Member IMC Group Tungaloy

GENERAL CATALOG - VOL. 1

TURNING GROOVING

we improve, we evolve, we **ADD**



2025/2026



Member IMC Group Tungaloy

Tungaloy's Insights – Smart Manufacturing

Tungaloy, as one of the leaders in the metal removal industry, offers the latest innovations in grades and geometries for superb performance and tool life.

Tungaloy's latest innovations in cutting tools contribute to carbon neutrality

TUNGALOY ADDFORCE ACCELERATED LINES

THINK GREEN

VOL. 1

TURNING GROOVING

A Grade A001 -

B Insert B001 -

C External Toolholder C001 -

D Internal Toolholder D001 -

E Threading Tool E001 -

F Parting, Grooving F001 -

G Miniature Machining G001 -

H Milling Cutter H001 -

I Endmill I001 -

J Drilling Tool J001 -

K Tooling System K001 -

L User's Guide L001 -

M Alphanumeric Index M001 -

About Tungaloy Cutting Tool Catalog

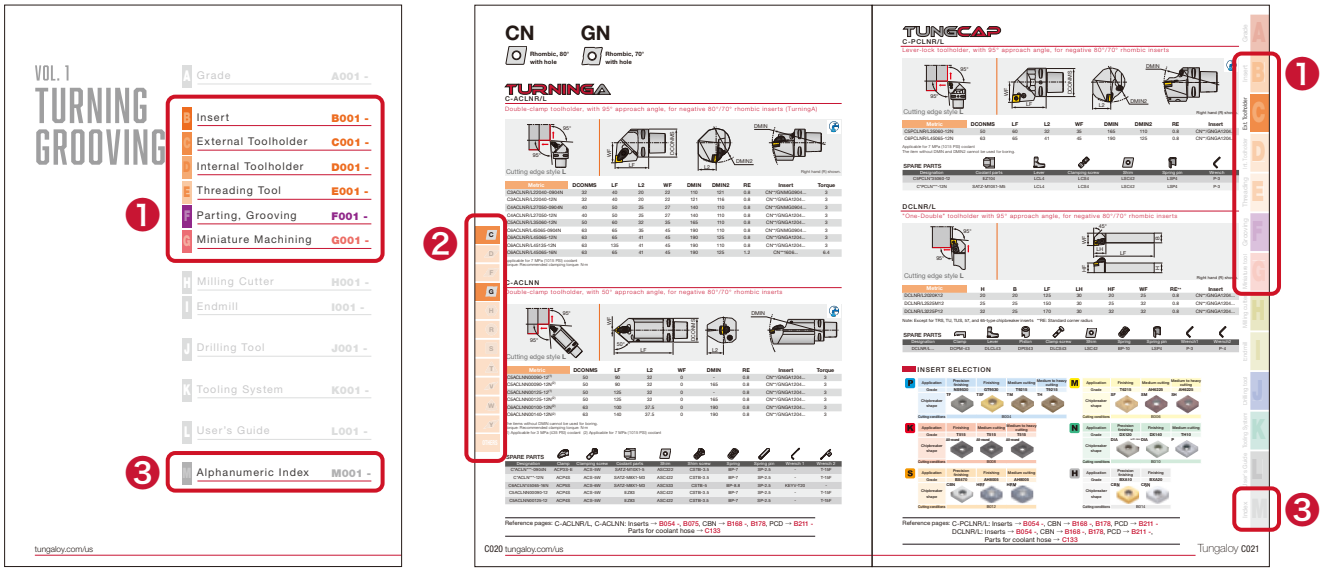
Note in using this catalog:

★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in inch (in) and millimeters (mm) where applicable.

★ For indexable tools, such as toolholders, cutters, drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:



❶ Select the tool category at the product group index.

❷ Select the tool type at the insert shape on the left pages.

❸ The index is in the alphanumerical order. Use it for your product search.

How to read the list for the standard items:

★ Designations for indexable tools – toolholders, adapters, etc.

· Orders are to be received for the tools with the designations in the catalog.

· For the tool with right- and left-hand options, the designation includes **R/L** as shown below.

Ex. 1: Designation: A16Q-STFP**R/L**13-D180

You can order both right- and left-hand tools. A16Q-STFP**R**13-D180 (a right-hand tool) and A16Q-STFP**L**13-D180 (a left-hand tool) will be available.

Ex. 2: Designation: A20R-STFP**R**13-D220

You can order only right-hand tools. Please contact us when you need left-hand tools.

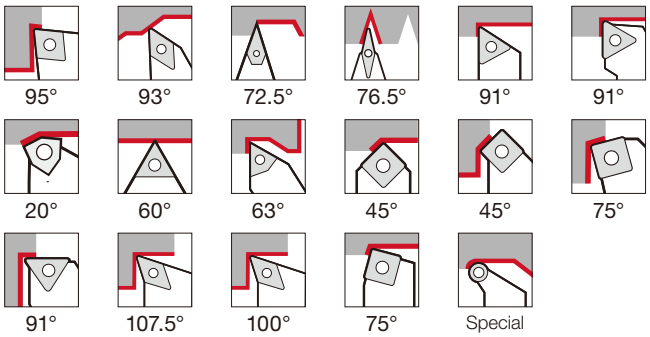
★ Lineup for inserts and solid tools

Blank : Please contact us regarding the product.

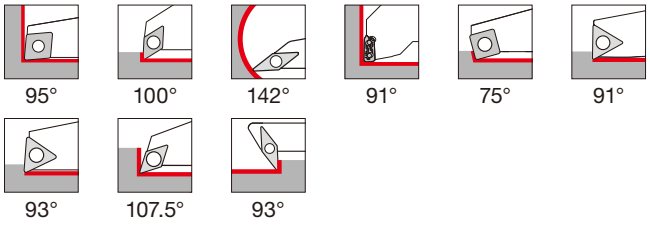
About Tungaloy Cutting Tool Catalog

Icons at the left side of each page

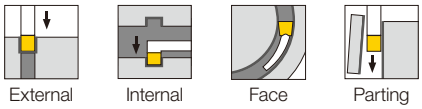
External toolholder (cutting edge shape / angle)



Internal toolholder (cutting edge shape / angle)



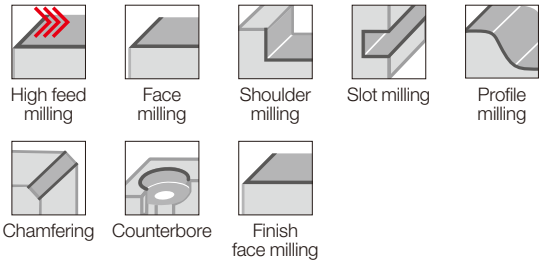
Parting, Grooving



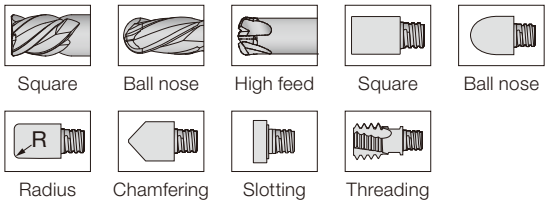
Miniature machining



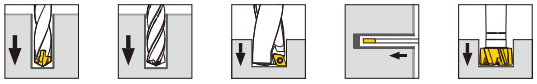
Mill



Endmill

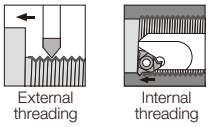


Drill

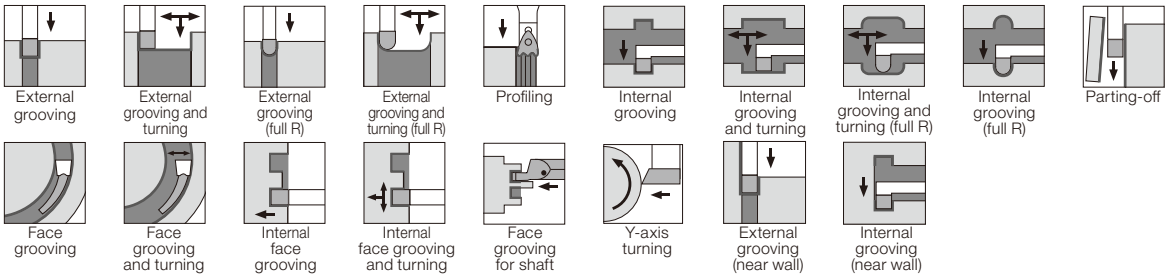


Icons for applications of each product

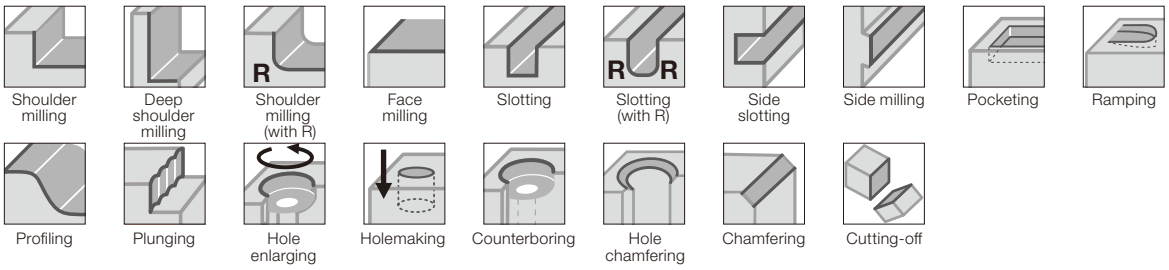
Threading



Grooving



Milling



Drilling



About the dimension symbols conforming to ISO13399

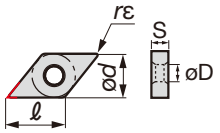
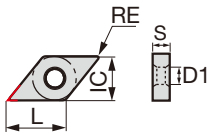
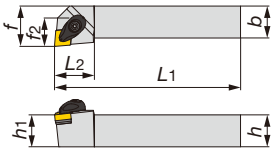
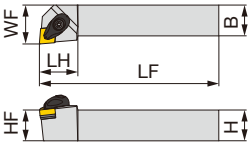
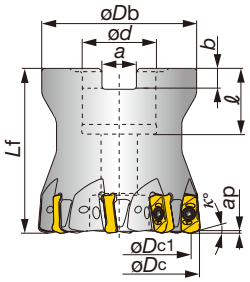
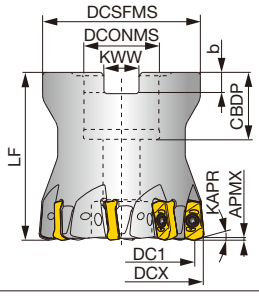
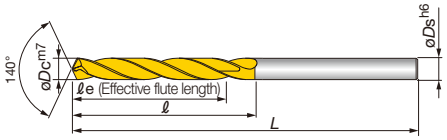
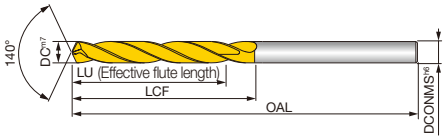
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard.
Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition to General Catalog (paper catalog), we are also updating the symbols in e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. *ap*	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	*ød*1	Mounting hole diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DMIN	*øDm*	Minimum machining diameter
EPSR	-	Nose angle
GAN	-	Rake angle (insert)
IC	*ød*	Inscribed circle diameter
INSD	A	Insert diameter (round type)
INSL	B	Insert length
KAPR	κ	Approach angle
LBB	-	Chipbreaker width
LE	A	Effective cutting edge length
LF	*L*1	Standard length
M	m	Distance from inscribed circle to cutting edge (m dimension)
PDX	t	Thread position (X direction)
PDY	*ℓ*3	Thread position (Y direction)
PNA	*θ*	Cutting edge angle
PSIRL	*θ*	Left-hand front cutting edge angle
PSIRR	*θ*	Right-hand front cutting edge angle
RE	*r*	Corner radius
S	T	Thickness
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	*øD*1, *øD*2, *øD*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	*øD*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	*øD*m	Minimum diameter in face grooving
DAXX	*øD*max	Maximum diameter in face grooving
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød*2	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	*θ*	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	*β*	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

About the dimension symbols conforming to ISO13399

Tooling system

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
BTED	*ød1*	Taper tip diameter
CRKS	S	Mounting screw size
DBC	*ød3*	Bolt hole pitch diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α, R.R.	Radial rake angle
GAMP	*θ*, A.R.	Axial rake angle
KAPR	κ	Cutting edge angle
LB	*L2*, *L3*	Body length
LF	*L*	Standard length
LPR	*L1*	Parting length
LS	*ℓs*	Shank length
LSC	*Lmin*	Clamp length
LSCX	*Lmax*	Maximum clamp length
OAH	H4	Overall height
OAL	*L*	Overall length
OAW	*W*	Overall width
THID	-	Mounting screw size
WB	*W*	Body width
WF	*f*	Standard width

Drilling

New symbol	Old symbol	Description
BD	*øD1*, *øD2*, *øD3*	Body external diameter
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CRKS	*S*	Mounting screw size
DC	*øDc*	Machining diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øD*	Connecting part diameter
KAPR	κ	Cutting edge angle
LCF	*ℓ*	Flute length
LF	*Lf*	Standard length (from the drill shoulder)
LPR	-	Parting length (from flange to tip)
LS	*ℓs*	Shank length
LU	*ℓ*	Machinable depth
NOF	z	Number of flutes
OAL	*L*	Overall length (from tip)
PL	PL	Distance from drill tip to shoulder
ZEFP	Z eff	Number of effective cutting edges on periphery

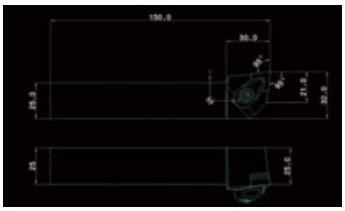
Milling

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
CBDP	*ℓ*	Mounting hole depth
CDX	Max. *ae*	Maximum slot width
CHW	k	Chamfer width on the corner
CICT	z	Number of inserts
CRKS	S	Mounting screw size
CW	W	Slotting edge width
CWN	-	Minimum slotting edge width
CWX	-	Maximum slotting edge width
DBC	*ød3*	Bolt hole pitch diameter
DC	*øDc*	Machining diameter
DCONMS	*ød*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øDb*	Mounting surface diameter on the machine
DCX	*øDc1*	Maximum machining diameter
GAMF	R.R.	Radial rake angle
GAMP	A.R.	Axial rake angle
H	T	Width across flat
KAPR	κ	Cutting edge angle
KWW	*a*	Drive key width
LF	*Lf*	Standard length
LH	*Lf*	Neck length
LS	*ℓs*	Shank length
NOF	z	Number of flutes
OAL	*L*, *L6*	Overall length
PDX	*t*	Thread position (X direction)
PNA	*θ*	Cutting edge angle
PSIR	*β*	Lead angle
RMPX	*θ*	Maximum ramping angle
THUB	T	Hub height (slot mill)
WT	Kg	Weight
ZEFP	Z eff	Number of effective cutting edges on the periphery

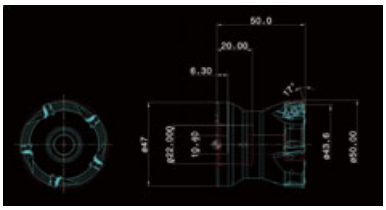
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● 2D data (DXF format file)



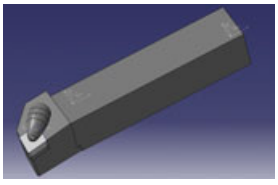
Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● 3D data Light type (STP format file): Can be used to check tool path and interference.

Turning: Equipped with an insert with a standard corner radius.

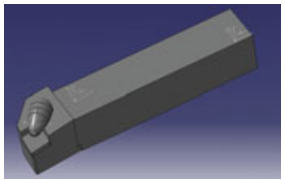


Milling: A rotating body model of an actual cutting edge curve and a body cross section.



● 3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on a CAD software.)

Turning



Milling



Insert



Insert - Content structure

- Inserts are grouped in Positive type, Negative type, and CBN/PCD.
- The list is in alphabetical order.
- The order of the list: C (80°) → D (55°) → R (360°) → S (90°) → T (60°) → V (35°) → W (80°) → Y (25°) → Other shapes
- The order of inserts:
  - Negative type (each shape with hole → without hole)
  - Positive type (each shape with hole → without hole)
- The order of chipbreakers:
  From precision finishing to heavy cutting, in the order of the values of cutting depth and feed rate.
- Insert without chipbreaker is on the last page of each shape.
- Introduces the proposed inserts according to the workpiece materials and the shape of workpiece materials.
- The standard cutting conditions for typical chipbreakers are at the bottom of the pages.
- ● in the catalog describes our standard items, and ▲ means the item to be discontinued in the future.

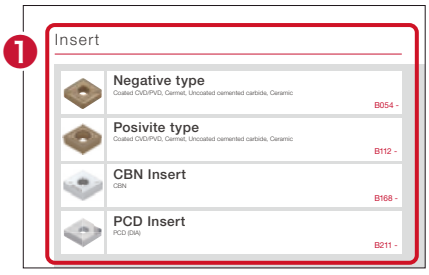
How to use the page

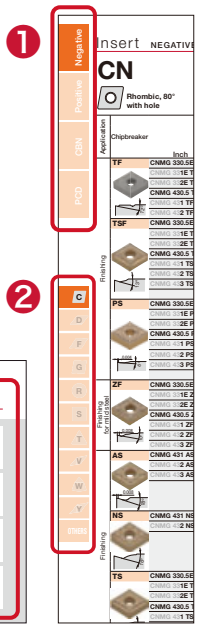
Method ①

Select an insert at the right end, and choose the information page by the insert type (❶) and the outer shape of the insert (❷) at the left end.

Method ②

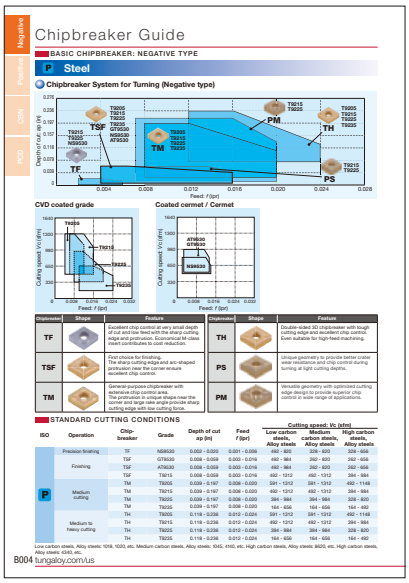
Check the page of each insert type from the index on B003 (❶), and choose the page of the setting information according to the outer shape of the insert (❷).

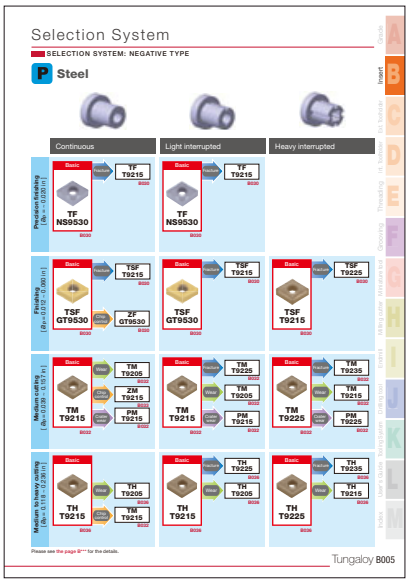




Method ③

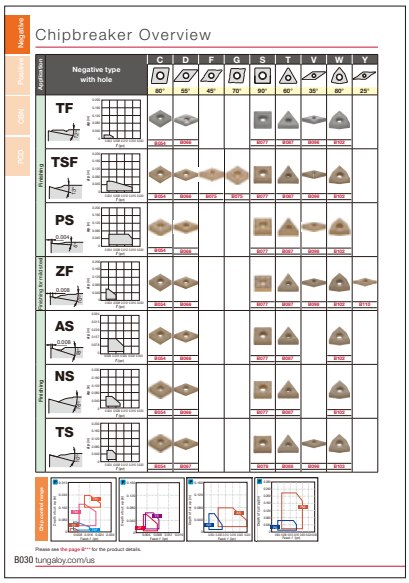
Select an insert at the chipbreaker introduction and the selection guide on B004 - B029 and check the details on the product page.





Method ④

Select an insert from the list of chipbreaker shapes on B030 - B053 and check the details on each page.



When ordering

- Please specify the designation, grade, and quantity.
  e.g. **CNMG 432 TM T9215 (CNMG120408-TM T9215) ... 10 pieces** (10 inserts per package)
  *You will find a note if the number per package is not 10.

Insert



Negative type

Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

B054 -



Posivite type

Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

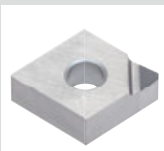
B112 -



CBN Insert

CBN

B168 -



PCD Insert

PCD (DIA)

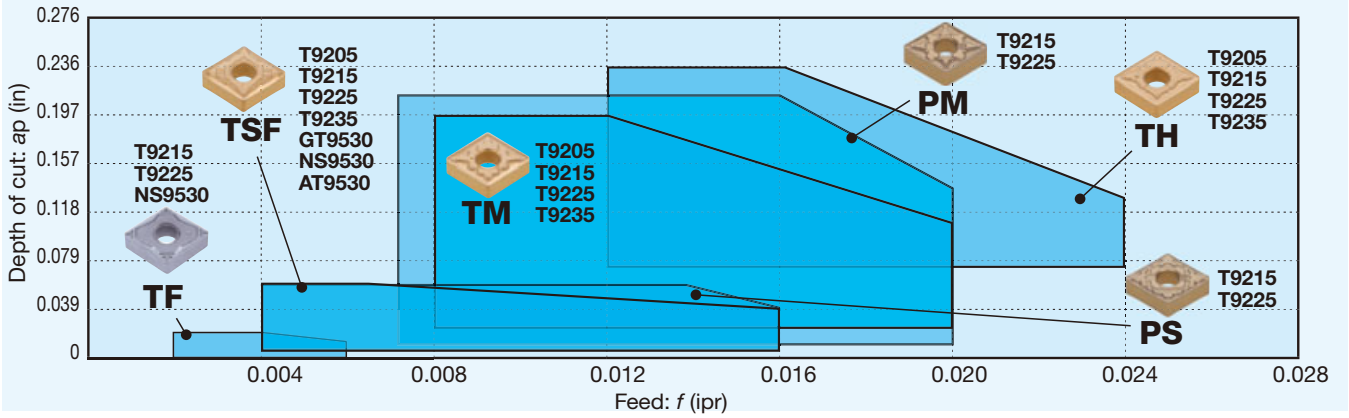
B211 -

Chipbreaker Guide

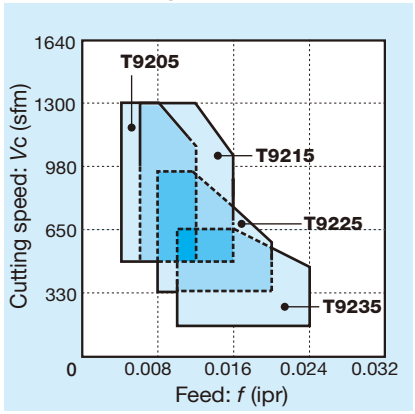
BASIC CHIPBREAKER: NEGATIVE TYPE

P Steel

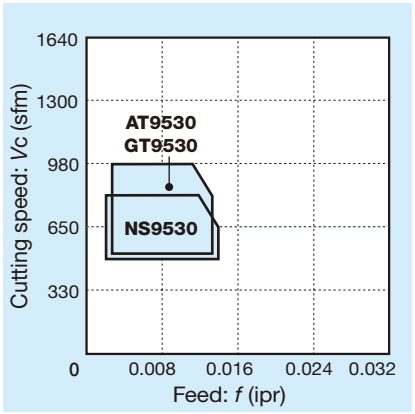
Chipbreaker System for Turning (Negative type)

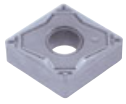


CVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
TF		Excellent chip control at very small depth of cut and low feed with the sharp cutting edge and protrusion. Economical M-class insert contributes to cost reduction.
TSF		First choice for finishing. The sharp cutting edge and arc-shaped protrusion near the corner ensure excellent chip control.
TM		General-purpose chipbreaker with extensive chip control area. The protrusion in unique shape near the corner and large rake angle provide sharp cutting edge with low cutting force.

Chipbreaker	Shape	Feature
TH		Double-sided 3D chipbreaker with tough cutting edge and excellent chip control. Even suitable for high-feed machining.
PS		Unique geometry to provide better crater wear resistance and chip control during turning at light cutting depths.
PM		Versatile geometry with optimized cutting edge design to provide superior chip control in wide range of applications.

STANDARD CUTTING CONDITIONS

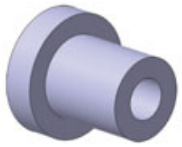
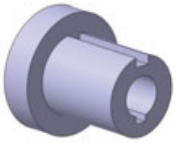
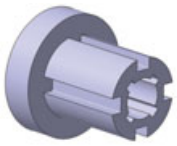
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	TF	NS9530	0.002 - 0.020	0.001 - 0.006	492 - 820	328 - 820	328 - 656
	Finishing	TSF	GT9530	0.008 - 0.059	0.003 - 0.016	492 - 984	262 - 820	262 - 656
		TSF	AT9530	0.008 - 0.059	0.003 - 0.016	492 - 984	262 - 820	262 - 656
		TSF	T9215	0.008 - 0.059	0.003 - 0.016	492 - 1312	492 - 1312	394 - 984
	Medium cutting	TM	T9205	0.039 - 0.197	0.008 - 0.020	591 - 1312	591 - 1312	492 - 1148
		TM	T9215	0.039 - 0.197	0.008 - 0.020	492 - 1312	492 - 1312	394 - 984
		TM	T9225	0.039 - 0.197	0.008 - 0.020	394 - 984	394 - 984	328 - 820
		TM	T9235	0.039 - 0.197	0.008 - 0.020	164 - 656	164 - 656	164 - 492
	Medium to heavy cutting	TH	T9205	0.118 - 0.236	0.012 - 0.024	591 - 1312	591 - 1312	492 - 1148
		TH	T9215	0.118 - 0.236	0.012 - 0.024	492 - 1312	492 - 1312	394 - 984
		TH	T9225	0.118 - 0.236	0.012 - 0.024	394 - 984	394 - 984	328 - 820
		TH	T9235	0.118 - 0.236	0.012 - 0.024	164 - 656	164 - 656	164 - 492

Low carbon steels, Alloy steels: 1018, 1020, etc. Medium carbon steels, Alloy steels: 1045, 4140, etc. High carbon steels, Alloy steels: 8620, etc. High carbon steels, Alloy steels: 4340, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

P Steel

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic **TF NS9530** B030 → Fracture: **TF T9215** B030	Basic **TF NS9530** B030 → Fracture: **TF T9215** B030	
Finishing [a_p = 0.012 ~ 0.060 in]	Basic **TSF GT9530** B030 → Fracture: **TSF T9215** B030; Chip control: **ZF GT9530** B030	Basic **TSF GT9530** B030 → Fracture: **TSF T9215** B030	Basic **TSF T9215** B030 → Fracture: **TSF T9225** B030
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic **TM T9215** B032 → Wear: **TM T9205** B032; Chip control: **ZM T9215** B033; Crater wear: **PM T9215** B032	Basic **TM T9215** B032 → Fracture: **TM T9225** B032; Wear: **TM T9205** B032; Crater wear: **PM T9215** B032	Basic **TM T9225** B032 → Fracture: **TM T9235** B032; Wear: **TM T9215** B032; Crater wear: **PM T9225** B032
Medium to heavy cutting [a_p = 0.118 ~ 0.236 in]	Basic **TH T9215** B036 → Wear: **TH T9205** B036; Chip control: **TM T9215** B032	Basic **TH T9215** B036 → Fracture: **TH T9225** B036; Wear: **TH T9205** B036	Basic **TH T9225** B036 → Fracture: **TH T9235** B036; Wear: **TH T9215** B036

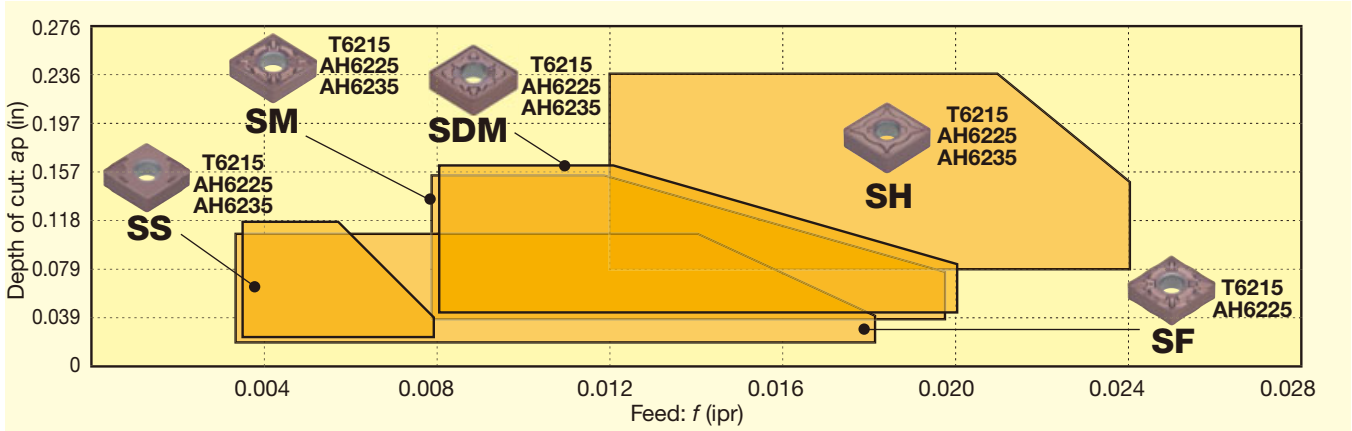
Please see the page B*** for the details.

Chipbreaker Guide

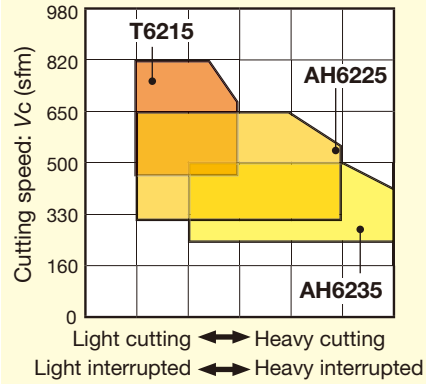
BASIC CHIPBREAKER: NEGATIVE TYPE

M Stainless Steel

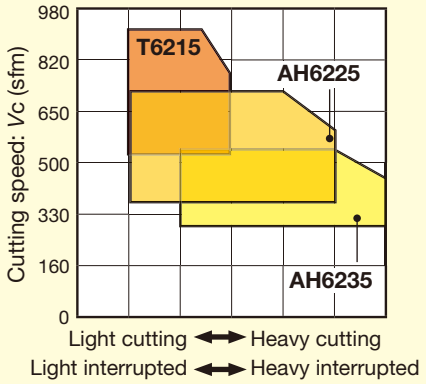
Chipbreaker System for Turning (Negative type)



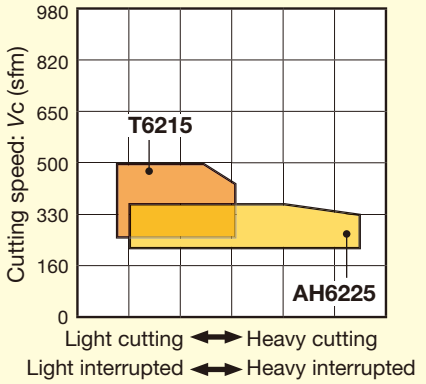
Austenitic stainless steel

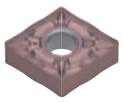
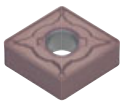


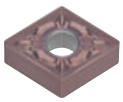
Ferritic / martensite stainless steel



Precipitation hardened stainless steel



Chipbreaker	Shape	Feature
SF		Excellent chip control with small depth of cut at high feed. Suitable for finishing stainless steel.
SH		Suitable for medium to heavy cutting. High fracture resistance with specially reinforced cutting edge. Ideal for machining that requires cutting edge strength. such as roughing and interrupted cutting.

Chipbreaker	Shape	Feature
SM		General-purpose chipbreaker with sharpness and good chip control. First choice for stainless steel.
SDM		Light cutting geometry for notch wear and crater wear resistance.

STANDARD CUTTING CONDITIONS

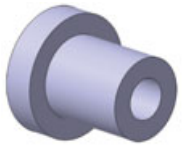
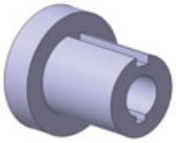
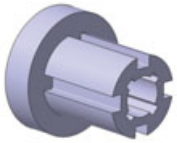
ISO	Operation	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
						Austenitic stainless steel	Ferritic / martensite stainless steel	Precipitation hardened stainless steel
M	Finishing	SF	T6215	0.020 - 0.098	0.003 - 0.018	459 - 787	525 - 919	262 - 492
			AH6225	0.020 - 0.098	0.003 - 0.018	295 - 656	361 - 787	197 - 361
			AH6235	0.020 - 0.098	0.003 - 0.018	164 - 492	230 - 558	-
	Medium cutting	SM	T6215	0.040 - 0.160	0.008 - 0.020	459 - 787	525 - 919	262 - 492
			AH6225	0.040 - 0.160	0.008 - 0.020	295 - 656	361 - 787	197 - 361
			AH6235	0.040 - 0.160	0.008 - 0.020	164 - 492	230 - 558	-
		SDM	T6215	0.040 - 0.160	0.008 - 0.020	459 - 787	525 - 919	262 - 492
			AH6225	0.040 - 0.160	0.008 - 0.020	295 - 656	361 - 787	197 - 361
			AH6235	0.040 - 0.160	0.008 - 0.020	164 - 492	230 - 558	-
	Heavy cutting	SH	T6215	0.080 - 0.240	0.012 - 0.024	459 - 787	525 - 919	262 - 492
			AH6225	0.080 - 0.240	0.012 - 0.024	295 - 656	361 - 787	197 - 361
			AH6235	0.080 - 0.240	0.012 - 0.024	164 - 492	230 - 558	-

Stainless steels: 304SS, 316SS etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

M Stainless Steel

	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.020 ~ 0.060 in]	Basic **SF T6215** B031 Fracture → **SF AH6225** B031 Chip control → **SS AH6215** B031 Crater wear → **SDM T6215** B033	Basic **SF AH6225** B031 Fracture → **SF AH6235** B031 Wear → **SF T6215** B031 Chip control → **SS AH6225** B031 Crater wear → **SDM AH6225** B033	Basic **SF AH6225** B031 Fracture → **SM AH6225** B031 Wear → **SF T6215** B031
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic **SM AH6225** B033 Wear → **SM T6215** B033 Chip control → **SS AH6225** B031 Crater wear → **SDM AH6225** B033	Basic **SM AH6225** B033 Fracture → **SM AH6235** B033 Wear → **SM T6215** B033 Chip control → **SS AH6225** B031 Crater wear → **SDM AH6225** B033	Basic **SM AH6235** B033 Fracture → **SH AH6235** B036 Wear → **SM AH6225** B033
Medium to heavy cutting [a_p = 0.079 ~ 0.236 in]	Basic **SH AH6225** B036 Fracture → **SH AH6235** B036 Wear → **SH T6215** B036 Chip control → **SM AH6225** B033	Basic **SH AH6225** B036 Fracture → **SH AH6235** B036 Wear → **SH T6215** B036	Basic **SH AH6235** B036 Wear → **SH AH6225** B036

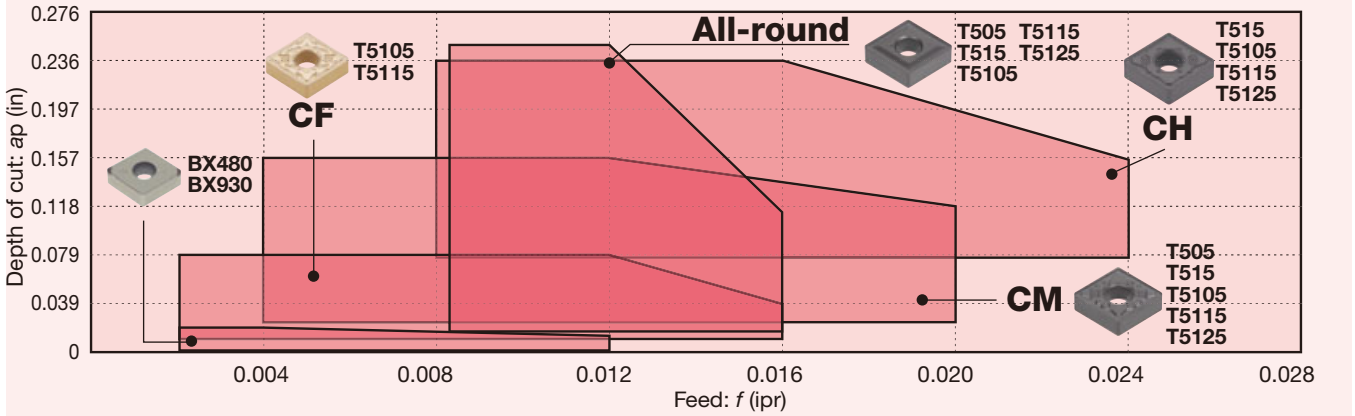
Please see the page B*** for the details.

Chipbreaker Guide

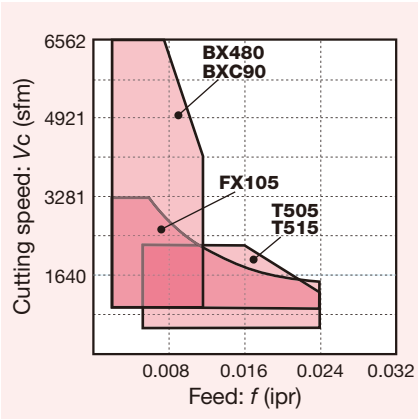
BASIC CHIPBREAKER: NEGATIVE TYPE

K Cast Iron

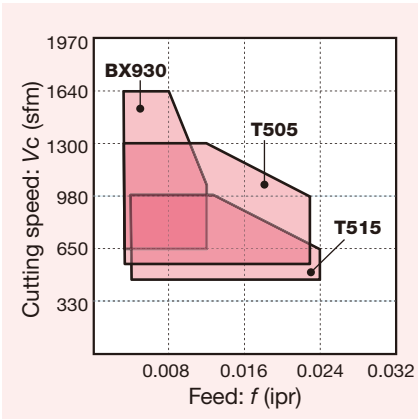
Chipbreaker System for Turning (Negative type)

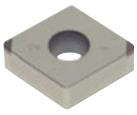
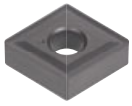


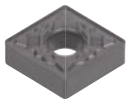
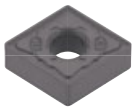
Gray cast iron



Ductile cast iron



Chipbreaker	Shape	Feature
-		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.
CF		Low cutting force chipbreaker for cast iron. Combined with an arc-shaped high rake angle (substantially 20°) drastically reduces cutting force and prevents the deformation and burr of thin-walled components.
All-round		Excellent performance in interrupted cutting. Highly reliable chipbreaker with great stability.

Chip-breaker	Shape	Feature
CM		First choice for cast iron. Versatile chipbreaker for a wide range of applications from continuous to interrupted cutting thanks to the positive land and wide chip pocket.
CH		Chipbreaker with reinforced cutting edge. The negative land and the land support provide stable insert seating and increase cutting edge strength, resulting in no fracture even in heavy cutting.

STANDARD CUTTING CONDITIONS

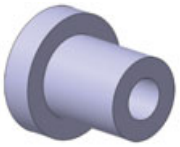
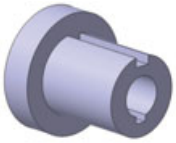
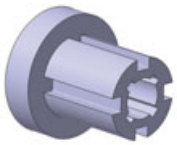
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
						Gray cast iron	Ductile cast iron
K	High speed cutting	-	BX930	0.002 - 0.020	0.002 - 0.008	984 - 3937	656 - 1640
		-	BX480	0.002 - 0.020	0.002 - 0.012	984 - 6562	656 - 984
		-	BXC90	0.003 - 0.118	0.002 - 0.016	984 - 6562	656 - 984
	Finishing	All-round	T505	0.039 - 0.197	0.004 - 0.020	591 - 2297	591 - 1312
		All-round	T515	0.039 - 0.197	0.004 - 0.020	492 - 2297	492 - 984
	Medium cutting	All-round	T505	0.039 - 0.197	0.004 - 0.020	591 - 2297	591 - 1312
		All-round	T515	0.039 - 0.197	0.004 - 0.020	492 - 2297	492 - 984
		CH	T515	0.118 - 0.236	0.008 - 0.024	492 - 2297	492 - 984
	Medium to heavy cutting	All-round	T515	0.039 - 0.197	0.004 - 0.020	492 - 2297	492 - 984
		CH	T515	0.118 - 0.236	0.008 - 0.024	492 - 2297	492 - 984

Gray cast iron: Class 25, etc. Ductile cast iron: 65-45-12, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

K Cast Iron

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic **BX480** → B168 - B188	Basic **BX480** → Fracture → **All-round T515** B033 → B168 - B188	Basic **BXC90** → B168 - B188
Finishing [a_p = 0.020 ~ 0.079 in]	Basic **All-round T505** → Fracture → **All-round T515** B033; Burr occurrence → **CF T5105** B031 → B033	Basic **All-round T515** → Wear → **All-round T505** B033; Fracture → **CH T515** B036; Burr occurrence → **CF T5115** B031 → B033	Basic **CH T515** → Wear → **All-round T505** B033; Burr occurrence → **All-round T515** B033 → B036
Medium cutting [a_p = 0.039 ~ 0.197 in]	Basic **All-round T505** → Fracture → **All-round T515** B033; Burr occurrence → **CF T5105** B031 → B033	Basic **All-round T515** → Wear → **All-round T505** B033; Fracture → **CH T515** B036; Burr occurrence → **CF T5115** B031 → B033	Basic **CH T515** → Wear → **All-round T505** B033; Fracture → **CH T5125** B036; Burr occurrence → **All-round T515** B033 → B036
Medium to heavy cutting [a_p = 0.118 ~ 0.236 in]	Basic **All-round T515** → Wear → **All-round T505** B033; Burr occurrence → **CF T5105** B031 → B033	Basic **All-round T515** → Wear → **All-round T505** B033; Fracture → **CH T515** B036; Burr occurrence → **CF T5115** B031 → B033	Basic **CH T515** → Wear → **All-round T505** B033; Fracture → **CH T5125** B036; Burr occurrence → **All-round T515** B033 → B036

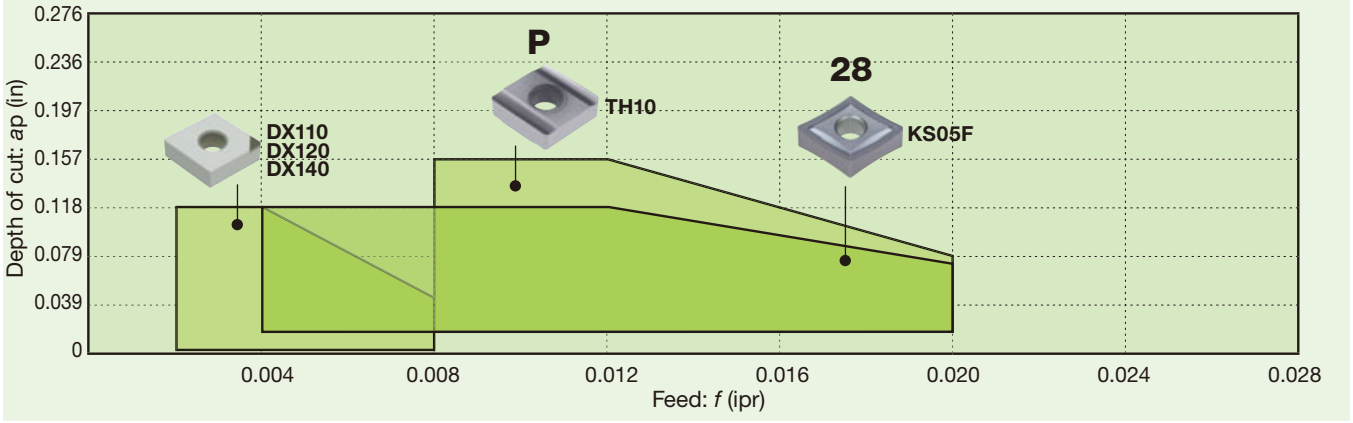
Please see the page B*** for the details.

Chipbreaker Guide

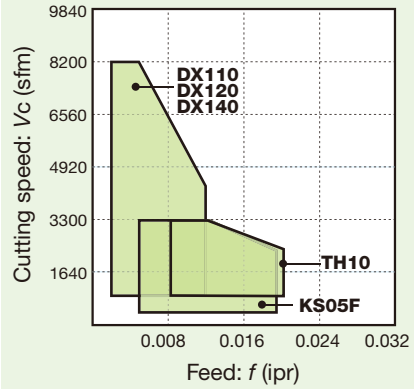
BASIC CHIPBREAKER: NEGATIVE TYPE

N Non-ferrous Metal

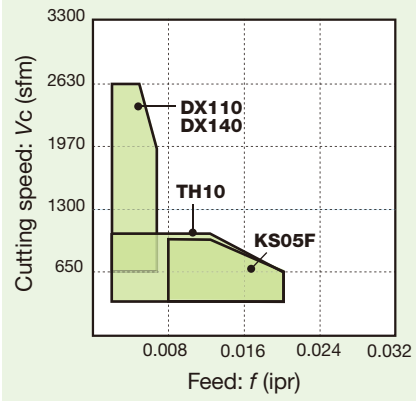
Chipbreaker System for Turning (Negative type)



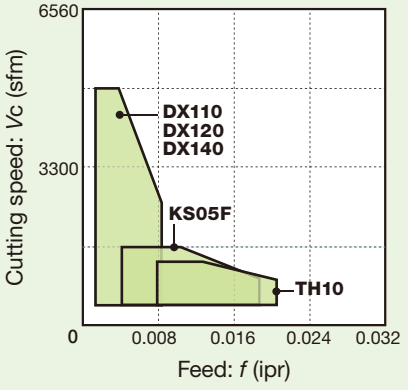
Aluminum alloy (Si < 12%)

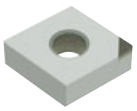
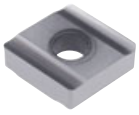


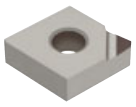
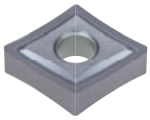
Aluminum alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
-		Excellent performance in high-speed finishing of non-ferrous metal, such as Aluminum and copper alloy, with diamond sintered body on the cutting edge.
P		Excellent sharpness for non-ferrous metal, such as Aluminum and copper alloy.

Chipbreaker	Shape	Feature
With chip-breaker		Wide chipbreaker for excellent chip control.
28		Low cutting geometry with large inclination for finishing to medium cutting range.

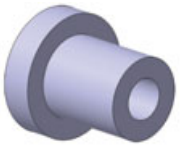
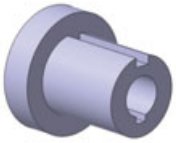
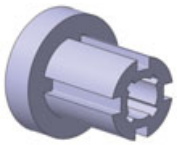
STANDARD CUTTING CONDITIONS

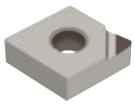
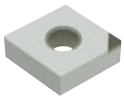
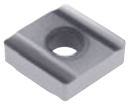
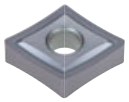
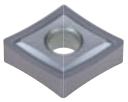
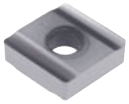
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Aluminum alloy (Si < 12%)	Aluminum alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	With	DX110	0.002 - 0.020	0.002 - 0.006	1640 - 8202	1312 - 2625	1640 - 4921
		-	DX140	0.002 - 0.020	0.002 - 0.008	984 - 8202	1312 - 2625	1640 - 4921
	Finishing	With	DX110	0.002 - 0.079	0.002 - 0.006	1640 - 8202	1312 - 2625	1640 - 4921
		-	DX140	0.002 - 0.079	0.002 - 0.006	984 - 5906	1312 - 1969	1312 - 3937
		P	TH10	0.02 - 0.157	0.008 - 0.020	328 - 3281	328 - 984	328 - 984
	Medium cutting	P	KS05F	0.02 - 0.118	0.004 - 0.020	328 - 3937	328 - 984	328 - 984
		P	KS05F	0.02 - 0.118	0.004 - 0.020	328 - 3937	328 - 984	328 - 984
		P	TH10	0.02 - 0.157	0.008 - 0.020	328 - 3281	328 - 984	328 - 984

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

N Non-ferrous Metal

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic  With chipbreaker **DX110** B211 - B212 → Wear → **DX140** B211 - B212	Basic  **DX140** B211 - B212 → Surface quality → With chipbreaker **DX110** B211 - B212 / Wear → **DX160** B211 - B212	
Finishing [a_p = 0.020 ~0.079 in]	Basic  **DX140** B211 - B212 → Surface quality → With chipbreaker **DX110** B211 - B212 / Wear → **DX160** B211 - B212	Basic  **DX140** B211 - B212 → Fracture → **P TH10** B035 / Wear → **DX160** B211 - B212	Basic  **P TH10** B035
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic  **28 KS05F** B035 → Wear → **DX140** B211 - B212	Basic  **28 KS05F** B035 → Wear → **DX140** B211 - B212	Basic  **P TH10** B035

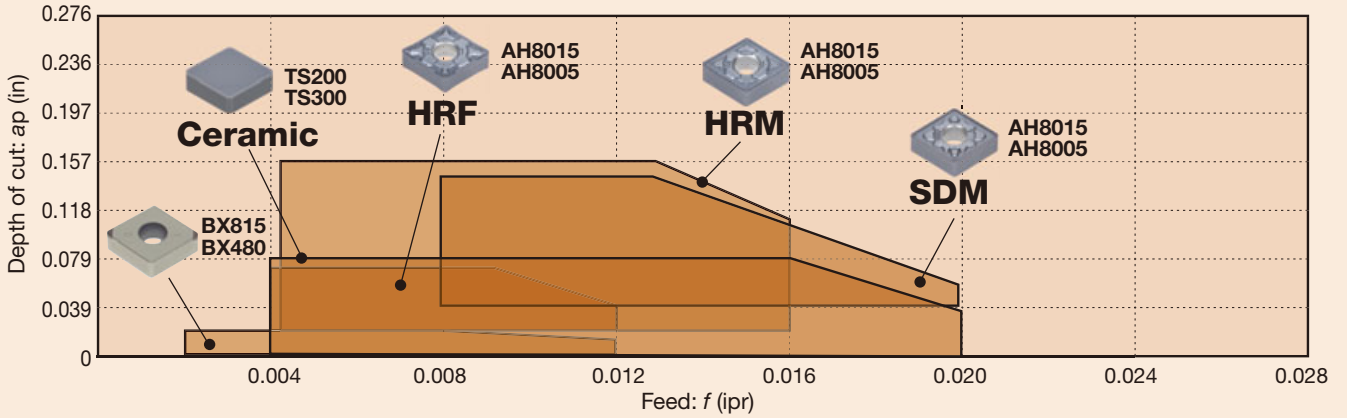
Please see the page B*** for the details.

Chipbreaker Guide

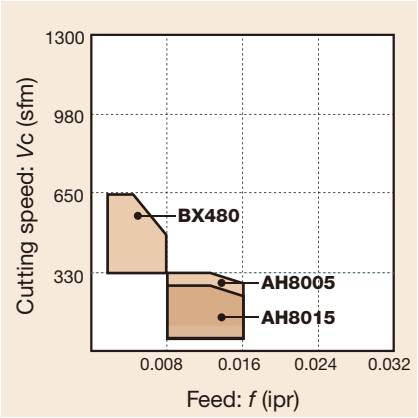
BASIC CHIPBREAKER: NEGATIVE TYPE

S Heat resistant superalloys

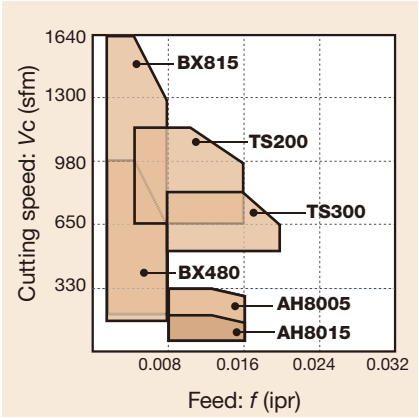
Chipbreaker System for Turning (Negative type)

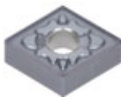


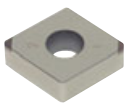
Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
HRF		Suitable for finishing superalloy. Unique protrusion improves chip control in cutting low depth.
HRM		First choice for heat-resistant alloy. The geometry optimized for a wide range of depths of cut.
SDM		Light cutting geometry for notch wear and crater wear resistance.

Chipbreaker	Shape	Feature
-		Excellent performance in finishing of heat-resistant alloy and titanium alloy with CBN sintered body on the cutting edge.
Ceramic		Suitable for roughing operation of heat-resistant alloy, due to the SiAlON ceramic with high-temperature strength.

STANDARD CUTTING CONDITIONS

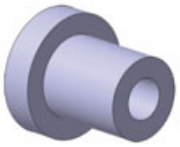
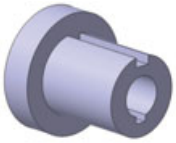
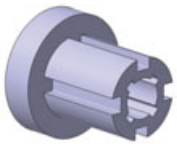
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
						Titanium alloy	Ni-base alloy
S	Precision finishing	-	BX480	0.004 - 0.020	0.002 - 0.008	330 - 660	230 - 984
		-	BX815	0.004 - 0.020	0.002 - 0.008	-	230 - 1640
	Finishing to medium cutting	-	TS200	0.004 - 0.079	0.004 - 0.016	-	656 - 1148
		-	TS300	0.004 - 0.079	0.008 - 0.020	-	492 - 820
		HRF	AH8005	0.020 - 0.059	0.002 - 0.010	66 - 328	66 - 328
		HRF	AH8015	0.020 - 0.059	0.002 - 0.010	66 - 262	66 - 164
		HRF	AH8015	0.020 - 0.059	0.002 - 0.010	33 - 197	33 - 131
	Medium cutting	HRM	AH8005	0.020 - 0.157	0.004 - 0.016	66 - 328	66 - 328
		HRM	AH8015	0.020 - 0.157	0.004 - 0.016	66 - 262	66 - 164
		HRM	AH8015	0.020 - 0.157	0.004 - 0.016	33 - 197	33 - 131

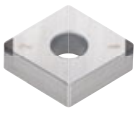
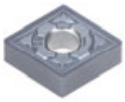
Ni-base alloy: INCONEL718, etc. Titanium alloy: Ti-6Al-4V, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

S Heat resistant superalloys

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic  **BX815** B168 - B188 → Fracture → **HRF AH8005** B031	Basic  **BX480** B168 - B188 → Fracture → **HRF AH8005** B031	
Finishing [a_p = 0.020 ~ 0.060 in]	Basic  **HRF AH8005** B031 → Fracture → **HRF AH8015** B031; Chip control → **28 AH8005** B035; High-speed wear → **TS300** B038, B039; Crater wear → **SDM AH8005** B033	Basic  **HRF AH8015** B031 → Fracture → **HRM AH8015** B034; Wear → **HRF AH8005** B031; Chip control → **28 AH8015** B035; Crater wear → **SDM AH8015** B033	Basic  **HRF AH8015** B031 → Fracture → **HRM AH8015** B034; Wear → **HRF AH8005** B031; Crater wear → **SDM AH8015** B033
Medium cutting [a_p = 0.020 ~ 0.157 in]	Basic  **HRM AH8005** B034 → Fracture → **HRM AH8015** B034; Burr occurrence → **HRF AH8015** B031; Chip control → **28 AH8005** B035; Crater wear → **SDM AH8005** B033	Basic  **HRM AH8015** B034 → Fracture → **SM AH6225** B033; Wear → **HRM AH8005** B034; Chip control → **28 AH8015** B035; Crater wear → **SDM AH8015** B033	Basic  **HRM AH8015** B034 → Wear → **HRF AH8005** B031; Crater wear → **SDM AH8015** B033

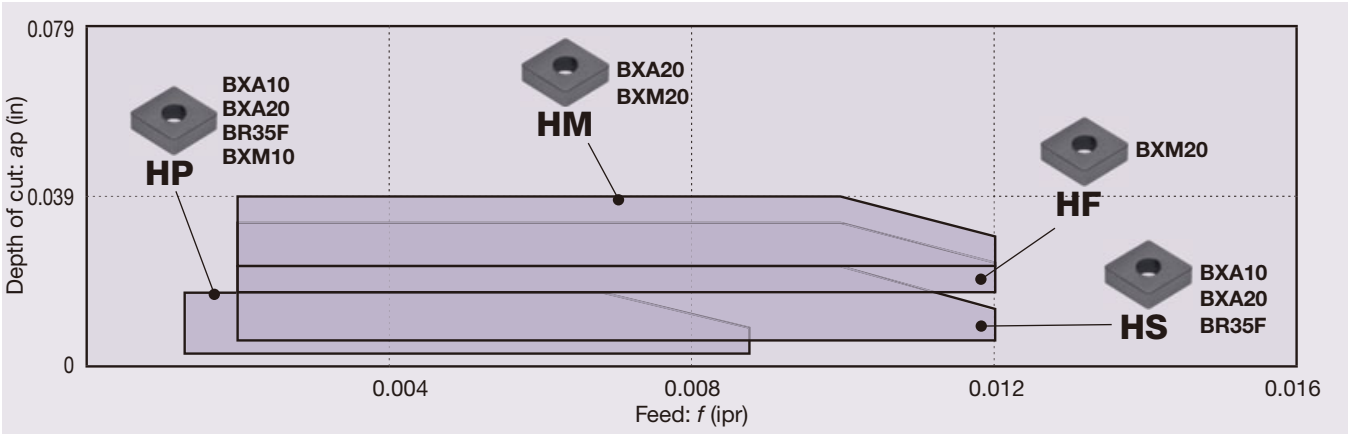
Please see the page B*** for the details.

Chipbreaker Guide

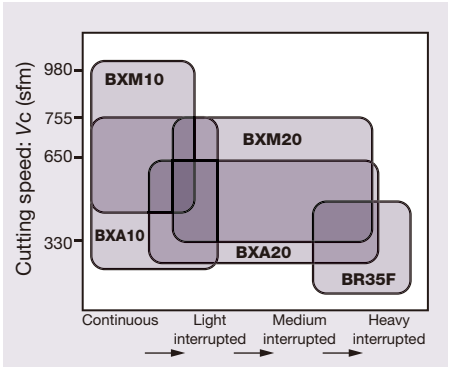
BASIC CHIPBREAKER: NEGATIVE TYPE

H Hard Materials

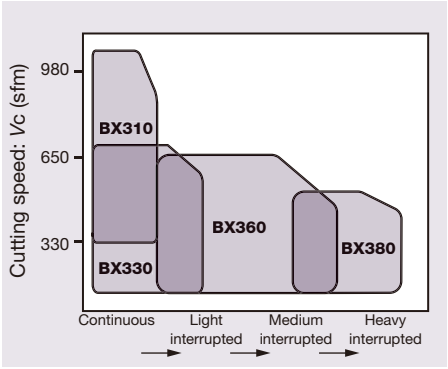
Chipbreaker System for Turning (Negative type)



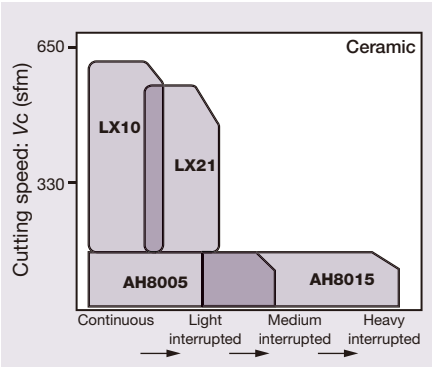
Coated CBN

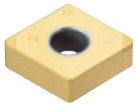


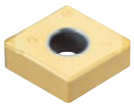
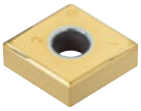
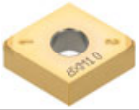
T-CBN



Ceramic, PVD coating



Chipbreaker	Shape	Feature
-		Excellent performance in finishing of hard material with CBN sintered body on the cutting edge.
- (Ceramic)		Realizes economical hardened steel medium speed finishing.
HRF		Excellent chip control in Hardent steel medium finishing.

Chipbreaker	Shape	Feature
HF		Excellent chip control in removing carburized layer at small depth of cut.
HM		Excellent chip control in removing carburized layer at large depth of cut.
HP		Excellent chip control in precision finishing.
HS		Provides the excellent chip-control at a high-feed condition in the precise finishing operation.

STANDARD CUTTING CONDITIONS

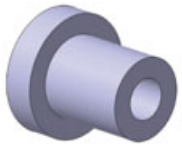
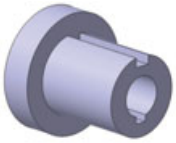
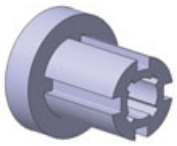
ISO	Operation	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
H	Precision finishing	HP	BXA10 BXA20 BR35F	0.001 - 0.01	0.001 - 0.009	230 - 1148
		HS	BXA10 BXA20 BR35F	0.004 - 0.014	0.002 - 0.012	230 - 1148
	Finishing	-	BXM10 BXM20 BXA20	0.002 - 0.020	0.002 - 0.010	230 - 1148
		-	LX10 LX21	0.002 - 0.020	0.002 - 0.010	197 - 591
	Removing of carburized layer	HF	BXM20	0.012 - 0.030	0.002 - 0.012	230 - 656
		HM	BXA20 BXM20	0.020 - 0.039	0.002 - 0.012	230 - 656
	Medium cutting	HRF	AH8005 AH8015	0.002 - 0.079	0.002 - 0.010	33 - 164

Hardened steels, Pre-hardened steels: D2, H13, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

H Hard Materials

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.014 in]	Basic **HP BXA10** B168 - B188 → High feed → **HS BXA10** B168 - B188	Basic **BXA20** B168 - B188 → Fracture → **-H BXA20** B168 - B188; → High-speed wear → **BXA10** B168 - B188	
Finishing [a_p = ~ 0.020 in]	Basic **BXA10** B168 - B188 → High-speed → **LX10** B038, B039	Basic **BXA20** B168 - B188 → Fracture → **-H BXA20** B168 - B188; → High-speed → **LX21** B038, B039; → High-speed wear → **BXA10** B168 - B188	Basic **BR35F** B168 - B188 → Fracture → **-HC BR35F** B168 - B188
Removing of carburized layer [a_p = ~ 0.039 in]	Basic **HF BXM20** B168 - B188	Basic **HM BXA20** B168 - B188	
Medium cutting [a_p = ~ 0.079 in]	Basic **HRF AH8005** B031 → Fracture → **HRF AH8015** B031	Basic **HRF AH8015** B031 → Fracture → **HRM AH8015** B034	Basic **HRF AH8015** B031 → Fracture → **HRM AH8015** B034

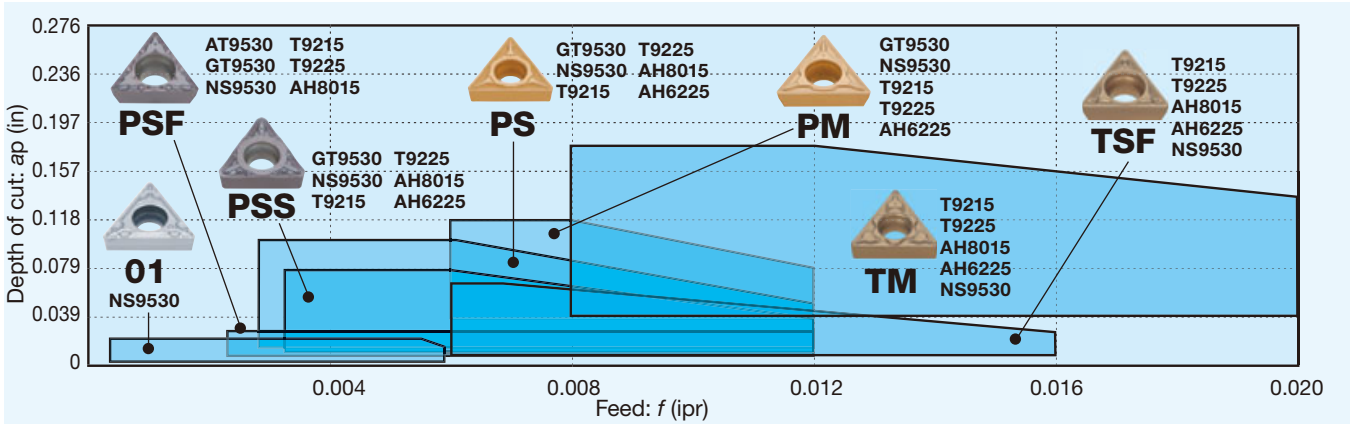
Please see the page B*** for the details.

Chipbreaker Guide

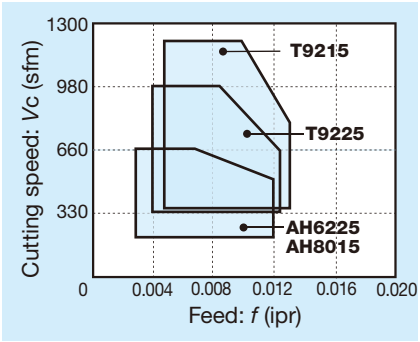
BASIC CHIPBREAKER: POSITIVE TYPE

P Steel

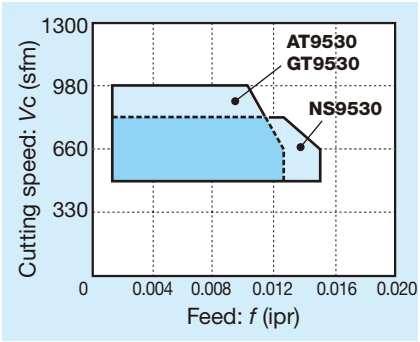
Chipbreaker System for Turning (Positive Type)

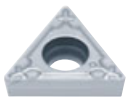
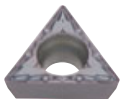
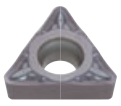


CVD / PVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
01		Excellent chip control in machining very small depth of cut thanks to the sharp cutting edge and protrusion.
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.

Chipbreaker	Shape	Feature
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.
TSF		Optimal chipbreaker width and geometry enable smooth chip control in high-feed machining.
TM		Optimal cutting edge design and chipbreaker shape achieve excellent chip control in large depth of cut machining.

STANDARD CUTTING CONDITIONS

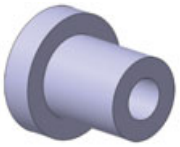
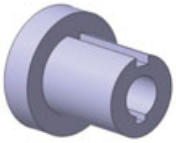
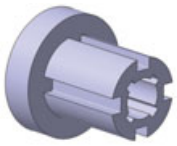
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	01	NS9530	0.002 - 0.020	0.001 - 0.006	492 - 820	262 - 722	262 - 591
		01	NS9530	0.002 - 0.020	0.001 - 0.006	492 - 820	262 - 722	262 - 591
	Finishing	PSS	NS9530	0.004 - 0.020	0.002 - 0.012	492 - 820	262 - 722	262 - 591
		PSS	NS9530	0.004 - 0.020	0.002 - 0.012	492 - 820	262 - 722	262 - 591
		PSS	NS9530	0.004 - 0.020	0.002 - 0.012	492 - 820	262 - 722	262 - 591
	Finishing to light cutting	PS	T9215	0.012 - 0.079	0.003 - 0.012	394 - 1148	328 - 1148	262 - 820
		PS	T9215	0.012 - 0.079	0.003 - 0.012	394 - 1148	328 - 1148	262 - 820
		PS	T9215	0.012 - 0.079	0.003 - 0.012	394 - 1148	328 - 1148	262 - 820
	Finishing to Medium cutting	PS	T9215	0.020 - 0.098	0.003 - 0.012	394 - 1148	328 - 1148	262 - 820
		PS	T9225	0.020 - 0.098	0.003 - 0.012	328 - 984	262 - 984	262 - 820
	Medium cutting	PM	T9215	0.040 - 0.120	0.006 - 0.012	492	328 - 656	262 - 591
		PM	T9225	0.040 - 0.120	0.006 - 0.012	394	262 - 591	262 - 394

Low carbon steels, Alloy steels: 1018, 1020, etc. Medium carbon steels, Alloy steels: 1045, 4140, etc. Hi carbon steels, Alloy steels: 8620, etc.
Hi carbon steels, Alloy steels: 4340, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

P Steel

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in.]	Basic: 01 NS9530 — B040, B045	Basic: 01 NS9530 — B040, B045 Fracture: PSF NS9530 — B040, B045, B049	
Finishing [a_p = 0.004 ~ 0.020 in.]	Basic: PSS NS9530 — B042, B046, B049 Fracture: PSS T9215 — B042, B046, B049 Wear: PSS GT9530 — B042, B046, B049 Chip control: PSF NS9530 — B040, B045, B049	Basic: PSS NS9530 — B042, B046, B049 Fracture: PSS T9215 — B042, B046, B049 Wear: PSS GT9530 — B042, B046, B049 Chip control: PSF NS9530 — B040, B045, B049	Basic: PSS NS9530 — B042, B046, B049 Fracture: PSS T9215 — B042, B046, B049 Wear: PSS GT9530 — B042, B046, B049 Chip control: PSF NS9530 — B040, B045, B049
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in.]	Basic: PS T9215 — B042, B046, B049 Fracture: PS T9225 — B042, B046, B049 Wear: PS NS9530 — B042, B046, B049 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049	Basic: PS T9215 — B042, B046, B049 Fracture: PS T9225 — B042, B046, B049 Wear: PS NS9530 — B042, B046, B049 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049	Basic: PS T9215 — B042, B046, B049 Fracture: PS T9225 — B042, B046 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049
Medium cutting [a_p = 0.039 ~ 0.118 in.]	Basic: PM T9215 — B044, B048 Fracture: PM T9225 — B044, B048 Wear: PM NS9530 — B044, B048 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049	Basic: PM T9215 — B044, B048 Fracture: PM T9225 — B044, B048 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049	Basic: PM T9215 — B044, B048 Fracture: PM T9225 — B044, B048 Chip control: TSF, TM T9215 — B040, B042, B045, B046, B049

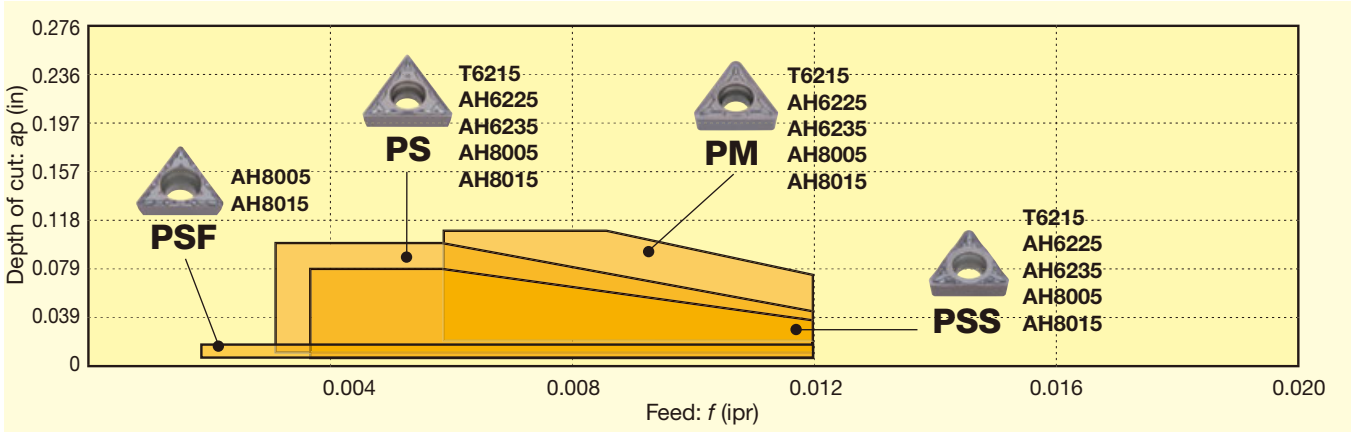
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

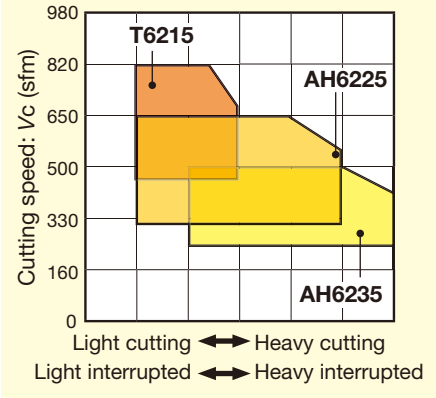
BASIC CHIPBREAKER: POSITIVE TYPE

M Stainless Steel

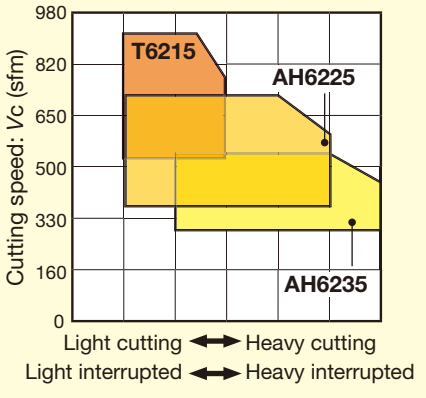
Chipbreaker System for Turning (Positive Type)



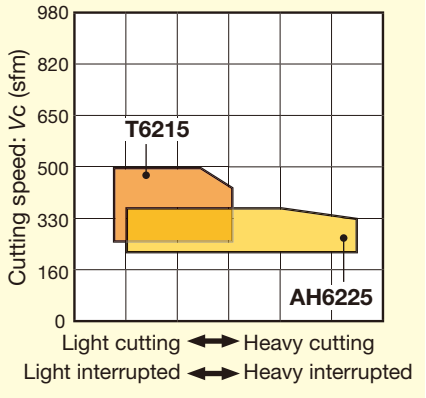
Austenitic stainless steel

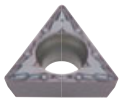
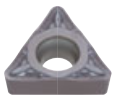


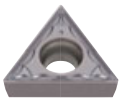
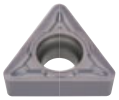
Ferritic / martensite stainless steel



Precipitation hardened stainless steel



Chipbreaker	Shape	Feature
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.

STANDARD CUTTING CONDITIONS

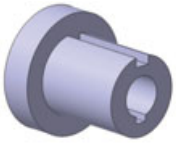
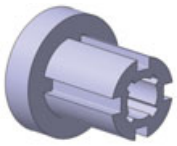
ISO	Operation	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
						Austenitic stainless steel	Ferritic / martensite stainless steel	Precipitation hardened stainless steel
M	Finishing	PSS	T6215	0.012 - 0.079	0.003 - 0.012	459 - 787	525 - 919	262 - 492
			AH6225	0.012 - 0.079	0.003 - 0.012	295 - 656	361 - 787	197 - 361
			AH6235	0.012 - 0.079	0.003 - 0.012	164 - 492	230 - 558	-
	Finishing to medium cutting	PS	T6215	0.020 - 0.098*	0.003 - 0.012	459 - 787	525 - 919	262 - 492
			AH6225	0.020 - 0.098*	0.003 - 0.012	295 - 656	361 - 787	197 - 361
			AH6235	0.020 - 0.098*	0.003 - 0.012	164 - 492	230 - 558	-
	Medium cutting	PM	T6215	0.039 - 0.118	0.006 - 0.012	459 - 787	525 - 919	262 - 492
			AH6225	0.039 - 0.118	0.006 - 0.012	295 - 656	361 - 787	197 - 361
			AH6235	0.039 - 0.118	0.006 - 0.012	164 - 492	230 - 558	-

* For CCMT0602 and DCMT0702 type inserts, *ap* = 0.020 - 0.098, Stainless steels: 304SS, 316SS, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

M Stainless Steel

	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.012 ~ 0.060 in]	Basic: PSS AH6225 (B042, B046, B049) → Wear: PSS T6215 (B042, B046, B049)	Basic: PSS AH6225 (B042, B046, B049) → Fracture: PSS AH6235 (B042, B046, B049); Wear: PSS T6215 (B042, B046, B049)	Basic: PSS AH6225 (B042, B046, B049) → Fracture: PSS AH6235 (B042, B046, B049); Wear: PSS T6215 (B042, B046, B049)
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in]	Basic: PS AH6225 (B042, B046, B049) → Wear: PS T6215 (B042, B046, B049)	Basic: PS AH6225 (B042, B046, B049) → Fracture: PM AH6235 (B044, B048); Wear: PS T6215 (B042, B046, B049)	Basic: PS AH6225 (B042, B046, B049) → Fracture: PM AH6235 (B044, B048); Wear: PS T6215 (B042, B046, B049)
Medium cutting [a_p = 0.039 ~ 0.118 in]	Basic: PM AH6225 (B044, B048) → Wear: PM T6215 (B044, B048)	Basic: PM AH6225 (B044, B048) → Fracture: PM AH6235 (B044, B048); Wear: PM T6215 (B044, B048)	Basic: PM AH6225 (B044, B048) → Fracture: PM AH6235 (B044, B048)

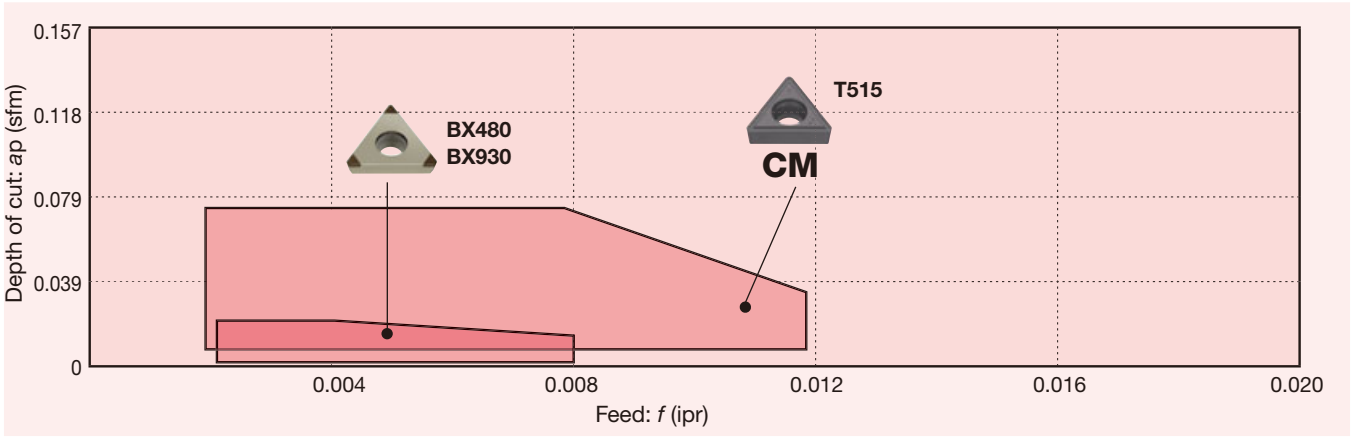
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

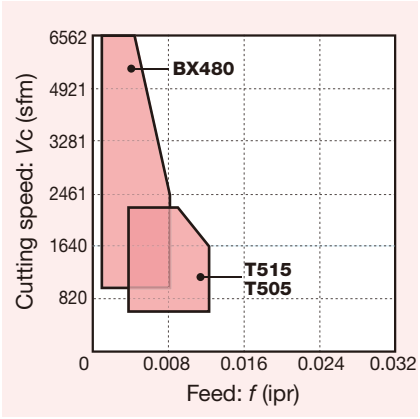
BASIC CHIPBREAKER: POSITIVE TYPE

K Cast Iron

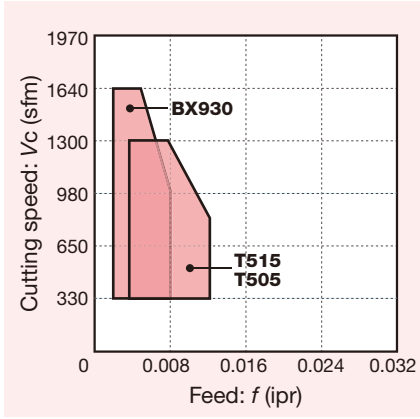
Chipbreaker System for Turning (Positive Type)



Gray cast iron



Ductile cast iron



Chipbreaker	Shape	Feature
-		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
CM		Highly versatile all-round chipbreaker with low cutting force. Suitable for finishing to medium cutting.

STANDARD CUTTING CONDITIONS

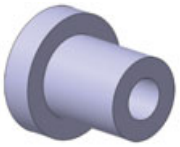
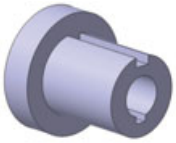
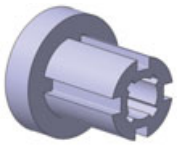
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
						Gray cast iron	Ductile cast iron
K	Precision finishing	-	BX930	0.002 - 0.020	0.002 - 0.008	980 - 3940	330 - 1640
		-	BX480	0.002 - 0.020	0.002 - 0.008	980 - 6560	-
	Finishing	CM	T515	0.002 - 0.079	0.002 - 0.012	500 - 2300	500 - 980
		CM	T515	0.002 - 0.079	0.002 - 0.012	330 - 660	330 - 660
	Medium cutting	CM	T515	0.002 - 0.079	0.002 - 0.012	330 - 980	330 - 820

Gray cast iron: Class 25, etc.
Ductile cast iron: 65-45-12, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

K Cast Iron

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic - **BX480** B189 - B210	Basic - **BX480** B189 - B210	
Finishing to Medium cutting [a_p = 0.020 ~ 0.118 in]	Basic **CM T515** B042, B046, B049 Wear → **CM T505** B042, B046, B049	Basic **CM T515** B042, B046, B049 Wear → **CM T505** B042, B046, B049	Basic **CM T515** B042, B046, B049 Wear → **CM T505** B042, B046, B049

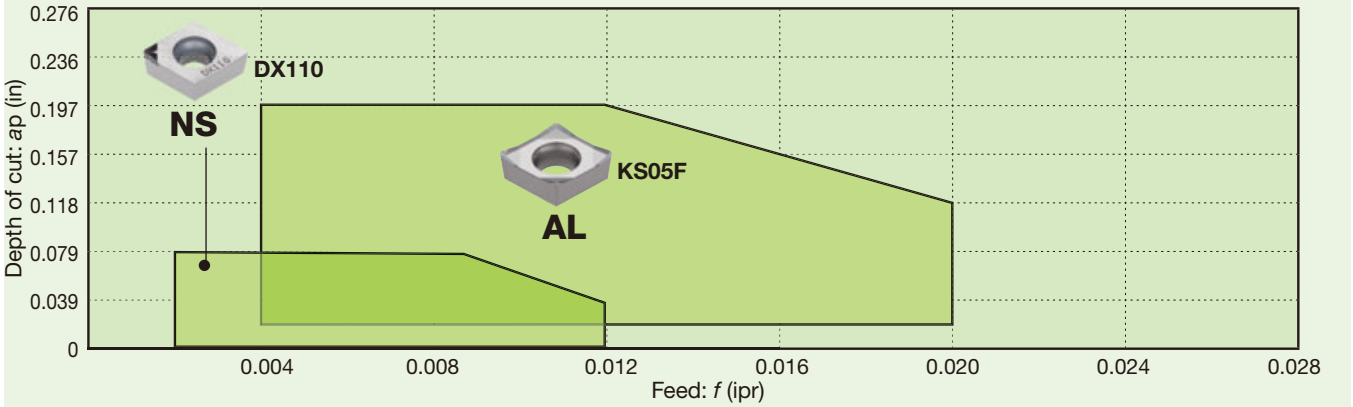
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

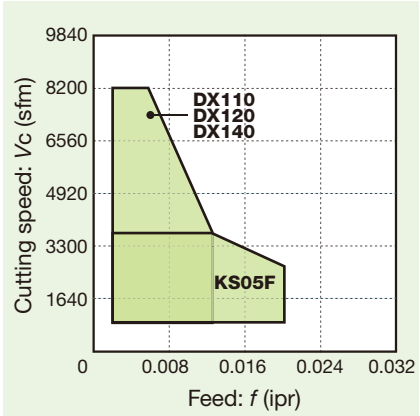
BASIC CHIPBREAKER: POSITIVE TYPE

N Non-ferrous Metal

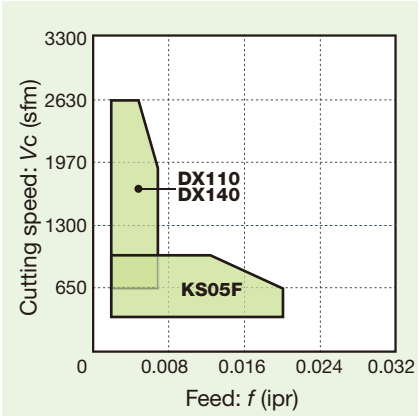
Chipbreaker System for Turning (Positive Type)



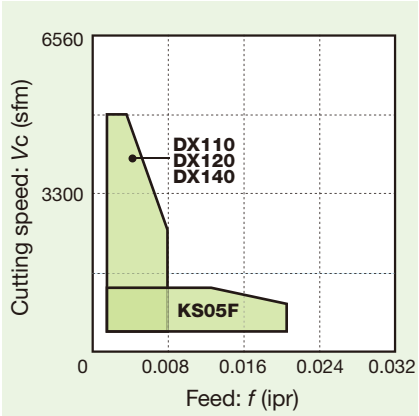
Aluminum alloy (Si < 12%)

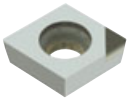
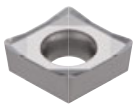


Aluminum alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
-		Excellent performance in high-speed finishing of non-ferrous metal with diamond sintered body on the cutting edge.
AL		Large rake angle and sharp cutting edge reduce cutting force. Lapped rake face prevents adhesion. Large inclination on the cutting edge (wavy cutting edge) for more stable chip control.

Chipbreaker	Shape	Feature
NS		A unique three-dimensional chipbreaker. Covers a wide range of condition from roughing to finishing.

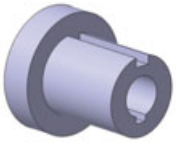
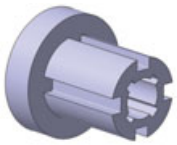
STANDARD CUTTING CONDITIONS

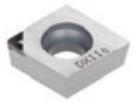
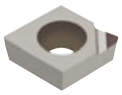
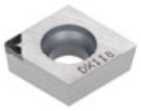
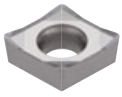
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Aluminum alloy (Si < 12%)	Aluminum alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	Continuous	NS	DX110	0.002 - 0.079	0.002 - 0.006	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	-	DX140	0.002 - 0.039	0.002 - 0.008	980 - 8200	-	1640 - 4920
	Finishing	Continuous	NS	DX110	0.002 - 0.079	0.002 - 0.012	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	-	DX140	0.002 - 0.039	0.002 - 0.006	980 - 5900	1310 - 1970	1310 - 3940
		Heavy interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 1970	330 - 660	-
	Medium cutting	Continuous	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 3940	330 - 980	330 - 980
		Light interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 2950	330 - 660	330 - 660
		Heavy interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 1970	330 - 660	-

Selection System

SELECTION SYSTEM: POSITIVE TYPE

N Non-ferrous Metal

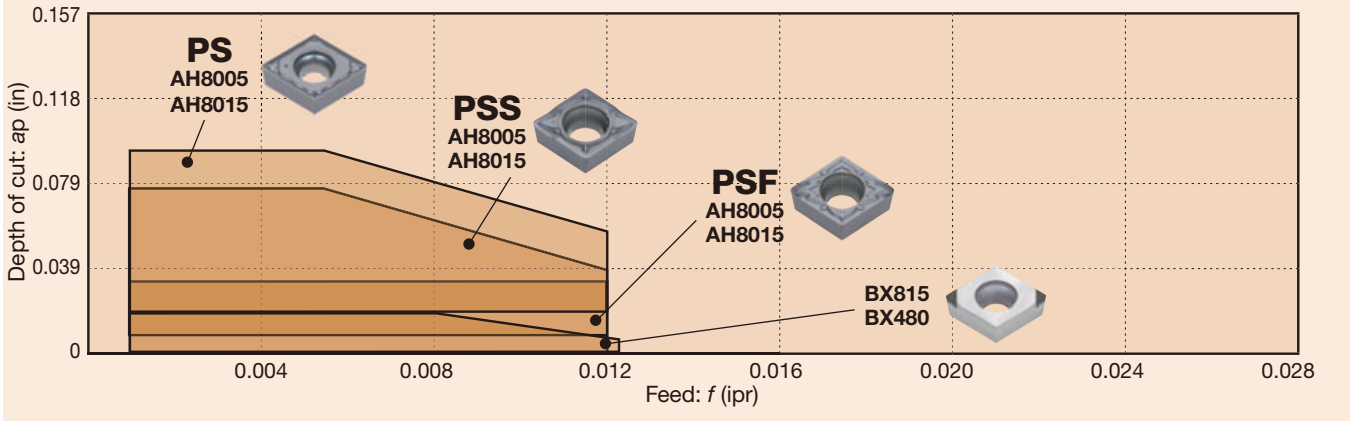
	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic  **NS DX110** B213 - Wear → **DX140** B213 -	Basic  **With chipbreaker DX110** B213 - Wear → **DX140** B213 -	
Finishing [a_p = 0.020 ~ 0.079 in]	Basic  **NS DX110** B213 - Wear → **DX160** B213 -	Basic  **DX140** B213 - Fracture → **AL KS05F** B043 Wear → **DX160** B213 -	Basic  **AL KS05F** B043
Medium cutting [a_p = 0.039 ~ 0.197 in]	Basic  **AL KS05F** B043 Wear → **With chipbreaker DX120** B213 -	Basic  **AL KS05F** B043 Wear → **DX140** B213 -	Basic  **AL KS05F** B043

Chipbreaker Guide

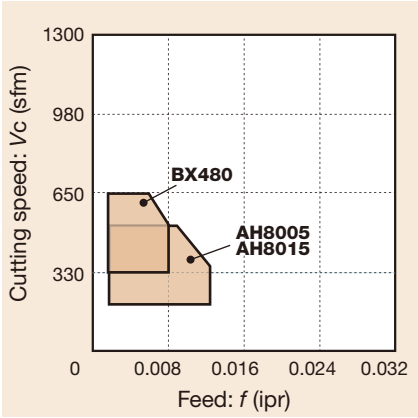
BASIC CHIPBREAKER: POSITIVE TYPE

S Heat resistant superalloys

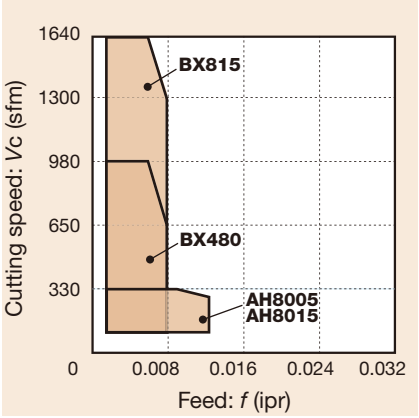
Chipbreaker System for Turning (Positive Type)



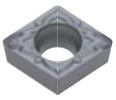
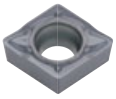
Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
-		Excellent performance in finishing of heat-resistant alloy and titanium alloy with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

STANDARD CUTTING CONDITIONS

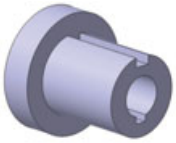
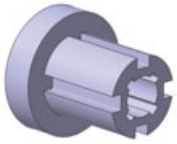
ISO	Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
						Titanium alloy	Ni-base alloy
S	Precision finishing	-	BX480	0.004 - 0.020	0.002 - 0.008	328 - 656	230 - 984
		-	BX815	0.004 - 0.020	0.002 - 0.008	-	230 - 1640
	Finishing	PSS	AH8015	0.012 - 0.079	0.001 - 0.012	66 - 492	66 - 328
		PSS	AH8015	0.012 - 0.079	0.001 - 0.012	66 - 492	66 - 328
	Finishing to medium cutting	PS	AH8015	0.020 - 0.098	0.001 - 0.012	66 - 492	66 - 328
		PS	AH8015	0.020 - 0.098	0.001 - 0.012	66 - 492	66 - 328

Ni-base alloy: INCONEL718, etc. Titanium alloy: Ti-6Al-4V, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

S Heat resistant superalloys

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic: **BX815** — B189 - B210	Basic: **BX480** — B189 - B210	
Finishing [a_p = 0.012 ~ 0.079 in]	Basic: **PSS AH8015** — B042, B046, B049 → Wear: **PSS AH8005** — B042, B046, B049	Basic: **PSS AH8015** — B042, B046, B049 → Wear: **PSS AH8005** — B042, B046, B049; Fracture: **PS AH8015** — B042, B046, B049	
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in]	Basic: **PS AH8015** — B042, B046, B049 → Wear: **PSS AH8005** — B042, B046, B049	Basic: **PS AH8015** — B042, B046, B049 → Fracture: **All-round AH8015** — B043, B047	Basic: **PS AH8015** — B042, B046, B049 → Fracture: **All-round AH8015** — B043, B047

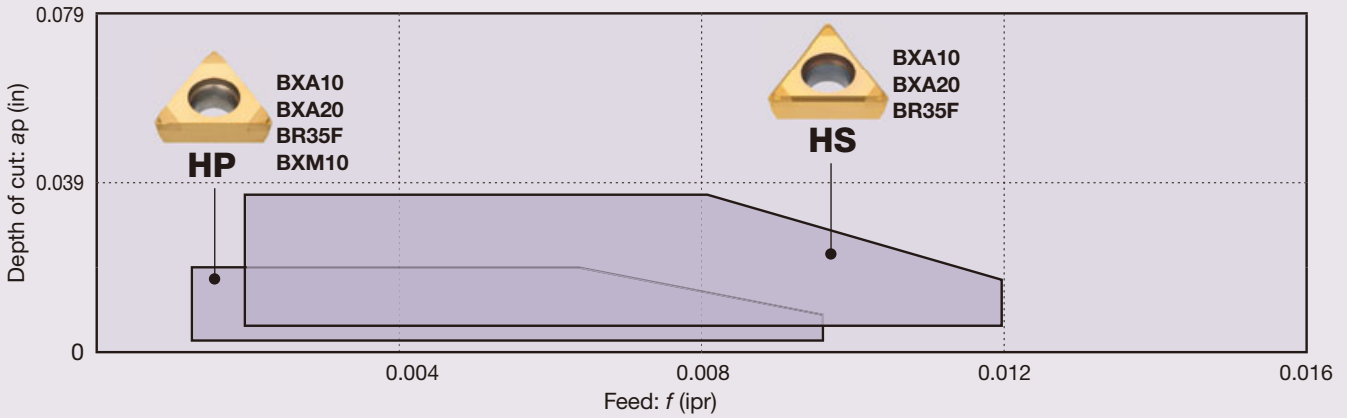
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

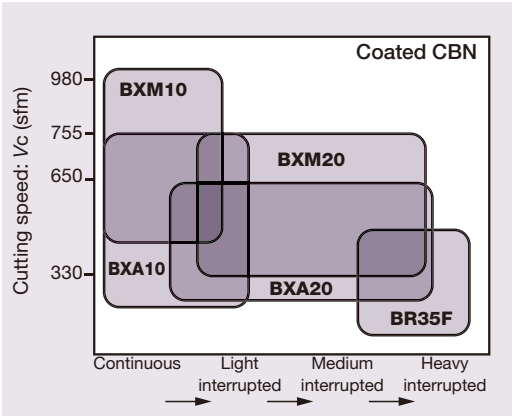
BASIC CHIPBREAKER: POSITIVE TYPE

H Hard Materials

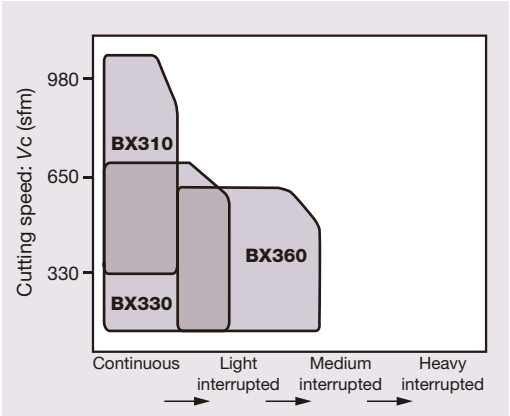
Chipbreaker System for Turning (Positive Type)



Coated CBN



CBN



Chipbreaker	Shape	Feature
-		Excellent performance in high-speed finishing of hard material with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
HP		Excellent chip control in precision finishing.
HS		Provides the excellent chip-control at a high-feed condition in the precise finishing operation.

STANDARD CUTTING CONDITIONS

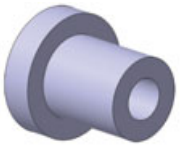
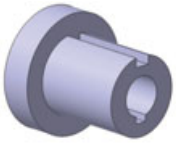
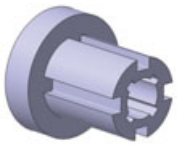
ISO	Operation	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
H	Precision finishing	HP	BXM10 BXA20 BR35F	0.001 - 0.010	0.001 - 0.009	230 - 1148
		HS	BXM10 BXA20 BR35F	0.004 - 0.014	0.002 - 0.012	230 - 1148
	Finishing	-	BXM10 BXA20 BR35F	0.002 - 0.020	0.002 - 0.010	230 - 1148

Hardened steels, Pre-hardened steels: D2, H13, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

H Hard Materials

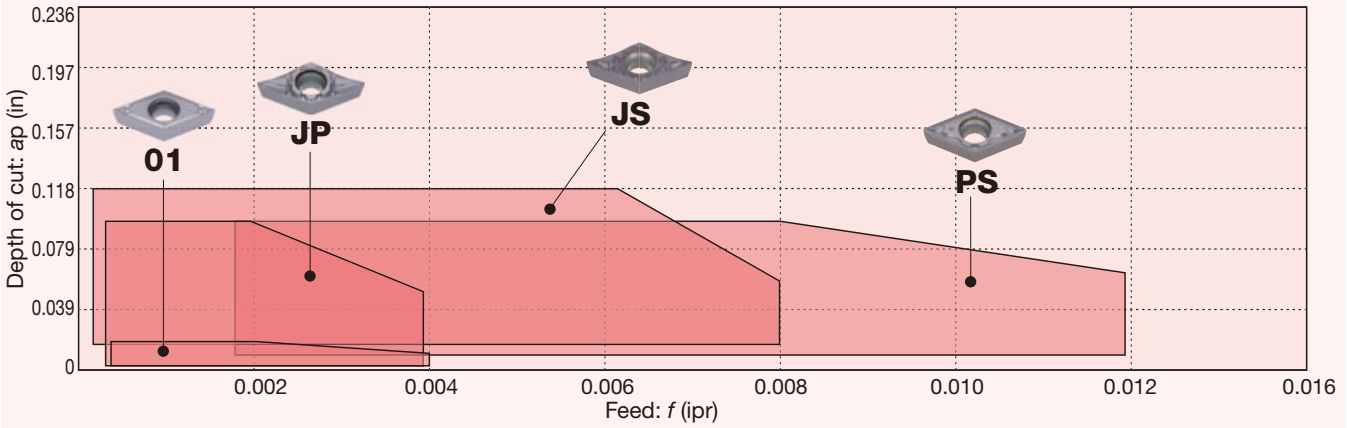




	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.014 in]	Basic **HP BXA10** B189 - → High-feed → **HS BXA10** B189 -	Basic **BXA20** B189 - → Fracture → **-H BXA20** B189 -	
Finishing [a_p = ~ 0.020 in]	Basic **BXA10** B189 -	Basic **BXA20** B189 - → Fracture → **-H BXA20** B189 - ; → High-speed wear → **BXA10** B189 -	Basic **SR BR35F** B189 - → Fracture → **HC BR35F** B189 -

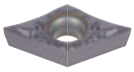
Chipbreaker Guide

For Miniature machining

BASIC CHIPBREAKER: POSITIVE TYPE

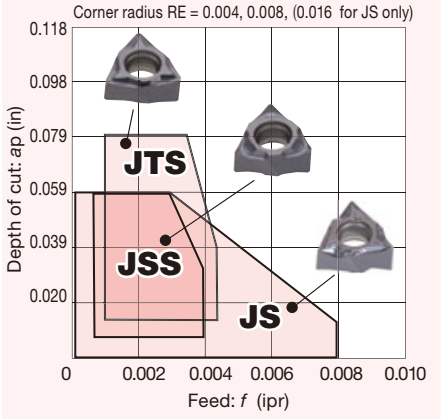


Chipbreaker	Shape	Feature
JP		Excellent performance in finishing of hard material with CBN sintered body on the cutting edge.

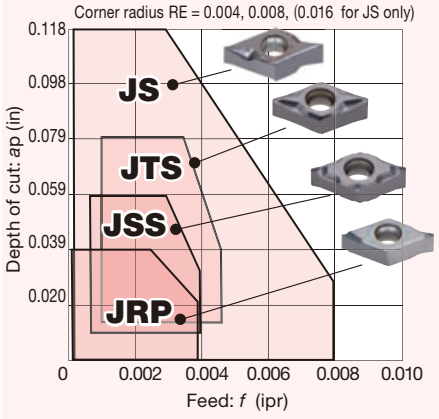
Chipbreaker	Shape	Feature
JS		Excellent chip control in removing carburized layer at small depth of cut.

BASIC CHIPBREAKER: DOUBLE-SIDED POSITIVE TYPE

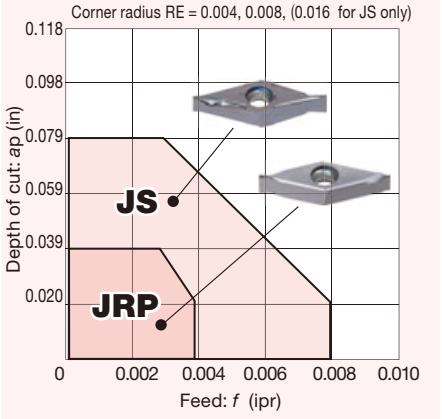
WXGU insert



DXGU insert



VXGU insert



STANDARD CUTTING CONDITIONS POSITIVE TYPE

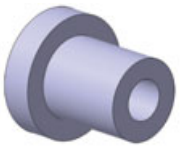
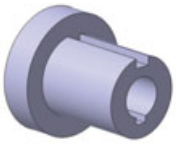
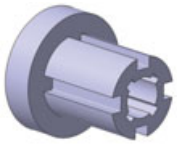
Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
Precision finishing	JP	SH725	0.002 - 0.098	0.001 - 0.004	33 - 656
Finishing	JP	SH725	0.002 - 0.098	0.001 - 0.004	164 - 820
	JS	SH725	0.008 - 0.118	0.001 - 0.008	33 - 656
Finishing to light cutting	JP	SH725	0.002 - 0.098	0.001 - 0.004	164 - 820
	JS	SH725	0.020 - 0.079	0.001 - 0.008	33 - 656
Medium cutting	JS	SH725	0.020 - 0.118	0.001 - 0.006	33 - 656
	PS	AH8015	0.020 - 0.098	0.001 - 0.008	66 - 656
	PS	AH6225	0.020 - 0.098	0.001 - 0.008	197 - 787

STANDARD CUTTING CONDITIONS DOUBLE-SIDED POSITIVE TYPE

Operation	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
Precision finishing	JRP	SH725	0.002 - 0.020	0.001 - 0.003	164 - 820
Finishing	JSS	SH725	0.008 - 0.059	0.001 - 0.004	164 - 820
	JS	SH725	0.008 - 0.118	0.001 - 0.008	164 - 820
Finishing to light cutting	JS	SH725	0.020 - 0.118	0.001 - 0.008	164 - 820
	JTS	SH725	0.020 - 0.079	0.001 - 0.004	164 - 820
Medium cutting	JS	SH725	0.020 - 0.118	0.001 - 0.008	164 - 820

Selection System

SELECTION SYSTEM: POSITIVE TYPE/DOUBLE-SIDED POSITIVE TYPE

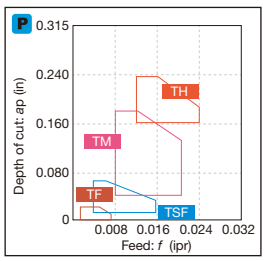
	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic Positive **JP SH725** Double-sided positive **JRP SH725** B040, B048, B052	Basic Positive **JP SH725** Double-sided positive **JRP SH725** B040, B048, B052	
Finishing [a_p = 0.004 ~ 0.020 in]	Basic Positive **JS SH725** Double-sided positive **JSS SH725** Chip control → **JP SH725** B040, B048 Fracture → **JSS AH725** B052 B040, B045, B049, B052	Basic Positive **JS SH725** Double-sided positive **JSS AH725** Chip control → **JP SH725** B040, B048 Fracture → **JSS AH725** B052 B040, B045, B049, B052	Basic Positive **JS SH725** Double-sided positive **JSS AH725** B040, B045, B049, B052
Finishing to medium cutting [a_p = 0.020 ~ 0.118 in]	Basic Positive **JS SH725** Double-sided positive **JTS SH725** Chip control → **JP SH725** B040, B048 Fracture → **JSS AH725** B052 B040, B045, B049, B052	Basic Positive **JS SH725** Double-sided positive **JTS SH725** Chip control → **JP SH725** B040, B048 Fracture → **JSS AH725** B052 B040, B045, B049, B052	Basic Positive **JS AH725** Double-sided positive **JTS AH725** Fracture → **TS AH8015** B052 B040, B045, B049, B052
Medium cutting [a_p = 0.039 ~ 0.157 (0.118) in]	Basic Positive **JS SH725** Double-sided positive **JS SH725** Fracture → **PS AH8015 AH6225** B042, B046, B049 Fracture → **JSS AH725** B052 B040, B045, B049, B052	Basic Positive **PS AH8015 AH6225** Double-sided positive **JS SH725** Fracture → **JTS AH725** B052 B042, B046, B049, B052	Basic Positive **PS AH8015 AH6225** Double-sided positive **JS SH725** B042, B046, B049, B052

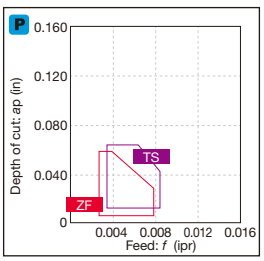
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle, B***/Double-sided.

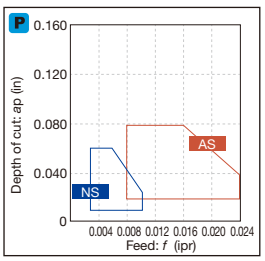
Chipbreaker Overview

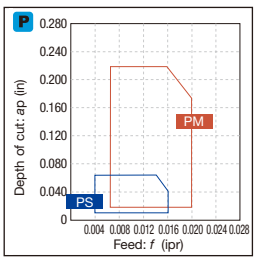
Application	Negative type with hole	C	D	F	G	S	T	V	W	Y
		80°	55°	45°	70°	90°	60°	35°	80°	25°
Finishing	TF	B054	B066			B077	B087	B098	B102	
Finishing	TSF	B054	B066	B075	B075	B077	B087	B098	B102	
Finishing	PS	B054	B066			B077	B087	B098	B102	
Finishing for mild steel	ZF	B054	B066			B077	B087	B098	B102	B110
Finishing	AS	B054	B066			B077	B087		B102	
Finishing	NS	B054	B066			B077	B087		B102	
Finishing	TS	B054	B067			B078	B088	B098	B103	

Chip control range

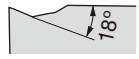
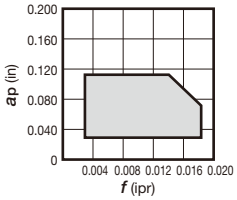
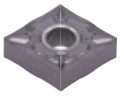
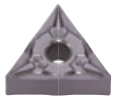
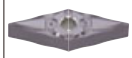
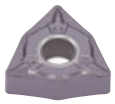
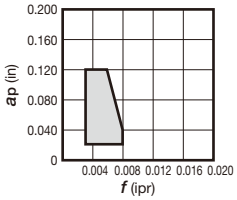
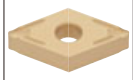
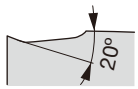
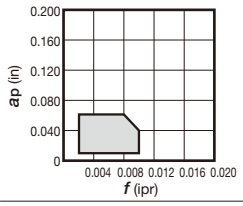
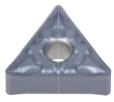
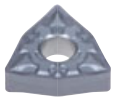
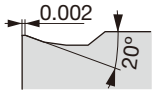
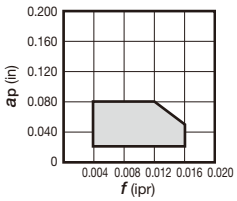
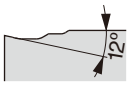
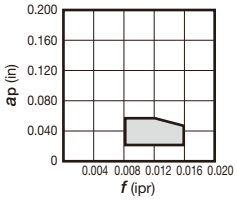
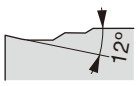
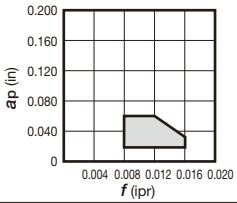
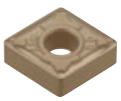
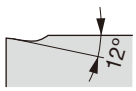
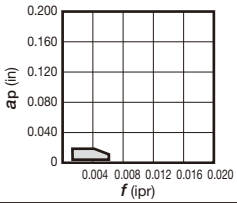
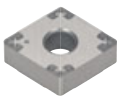
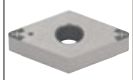




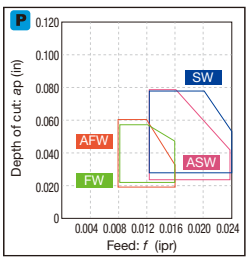


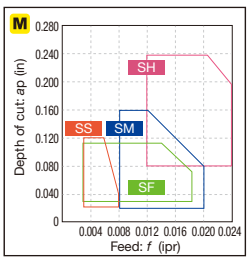


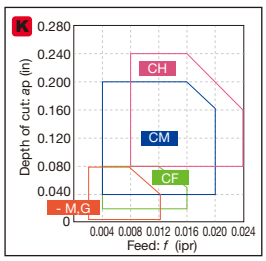
Please see the page B*** for the product details.

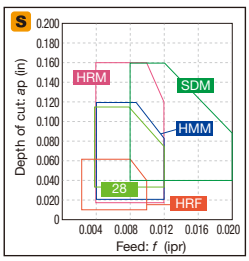
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing	**SF**  	 B055	 B067	 B078	 B088	 B098	 B103	
Finishing	**SS**  	 B055	 B067	 B078	 B088	 B098	 B103	
Finishing	**HRF**  	 B055	 B067	 B078	 B088	 B098	 B103	
Finishing	**CF**  	 B055	 B068	 B078	 B088	 B099	 B104	
Finishing (wiper)	**FW**  	 B056	 B068		 B088		 B104	
Finishing (wiper)	**AFW**  	 B056					 B104	
Finishing	**01**  	 B056	 B068	 B078	 B089	 B099	 B104	

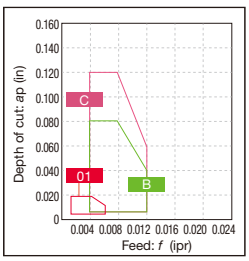
Chip control range







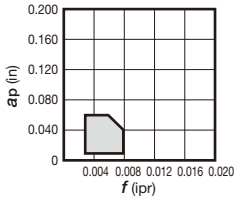
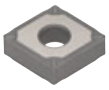
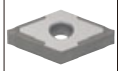
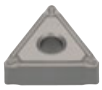
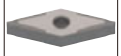
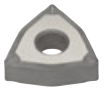
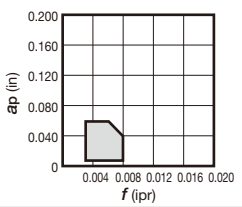
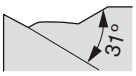
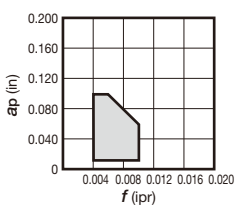
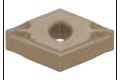
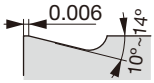
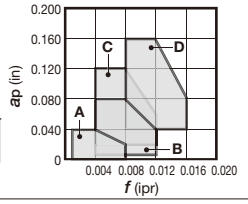
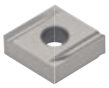
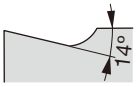
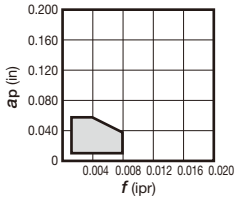
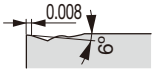
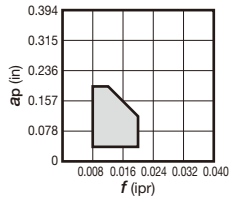
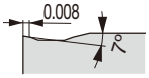
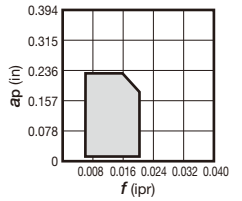




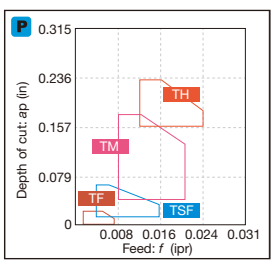
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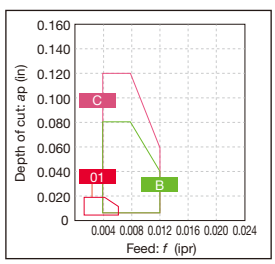
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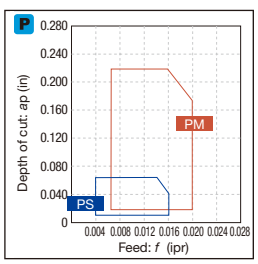
Chipbreaker Overview

Application	Negative type with hole	C	D	F	G	S	T	V	W
		80°	55°	45°	70°	90°	60°	35°	80°
Finishing	11  	 B056	 B068			 B078	 B089	 B099	 B104
Finishing for mild steel	17  	 B056	 B068			 B079	 B089		 B104
Boring (double side)	CB  	 B056	 B068				 B089		 B104
Finishing	A~D  	 B056				 B079	 B090		
Finishing	W  						 B090		
Medium cutting	TM  	 B057	 B069	 B075	 B075	 B079	 B090	 B099	 B105
	PM  	 B057	 B069			 B079	 B091	 B099	 B105

Chip control range

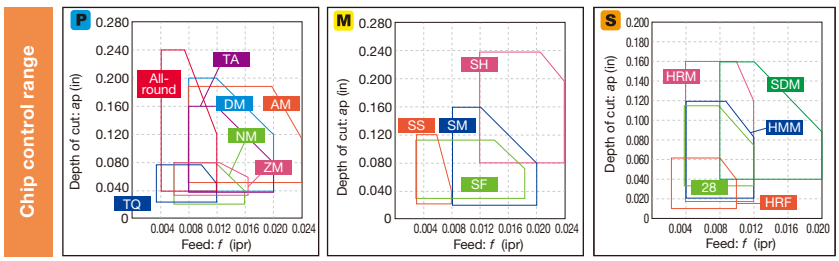






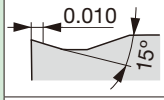
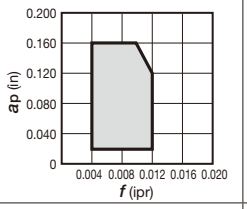
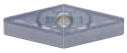
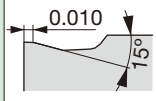
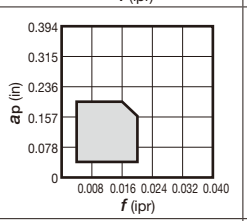
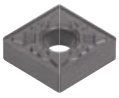
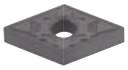
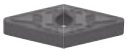
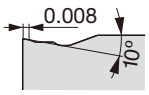
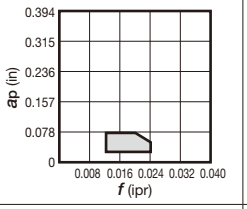
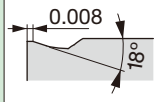
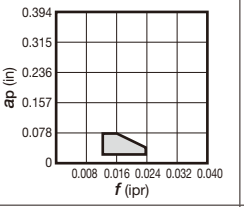
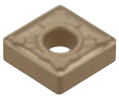
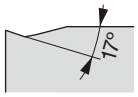
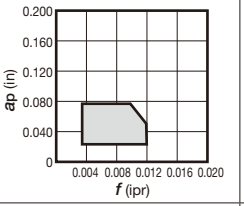
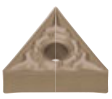
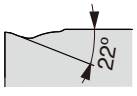
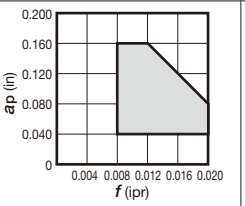
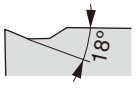
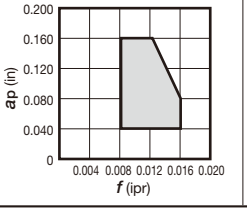
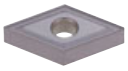
Please see the page B*** for the product details.

Application	Negative type with hole	C	D	S	T	V	W	Y
		80°	55°	90°	60°	35°	80°	25°
Medium cutting for mild steel	**ZM** 7°	B057	B069	B080	B091	B099	B105	B110
Medium cutting	**AM** 0.010 8°	B058	B069		B091		B106	
	NM 12°	B058	B070		B091		B106	
	DM 0.010 15°	B058	B070	B080	B092	B100	B106	
	All-round 0.008 15°	B058	B070	B080	B092	B100	B106	
	SM 0.010 10°	B059	B070	B080	B092	B100	B106	
	SDM 0.008 10°	B059	B070	B080	B092	B100	B106	

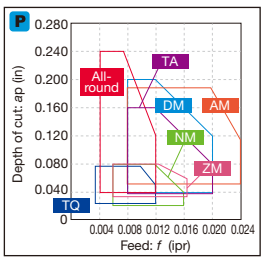


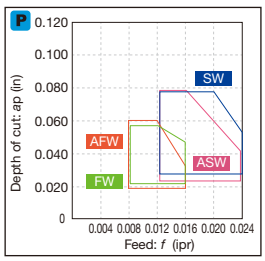
Please see the page B*** for the product details.

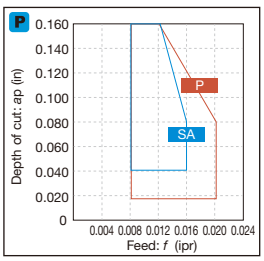
Chipbreaker Overview

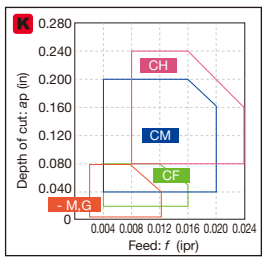
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Medium cutting	**HRM**  	 B059	 B070	 B081	 B092	 B100	 B106	
Medium cutting	**CM**  	 B059	 B071	 B080	 B092	 B100	 B107	
Medium cutting (wiper)	**SW**  	 B059	 B071		 B093		 B107	
Medium cutting (wiper)	**ASW**  	 B060					 B107	
Medium cutting	**TQ**  	 B060	 B071		 B093	 B100	 B107	
Medium cutting	**TA**  	 B060		 B081	 B093		 B107	
Medium cutting	**SA**  	 B060	 B071	 B081	 B093		 B108	

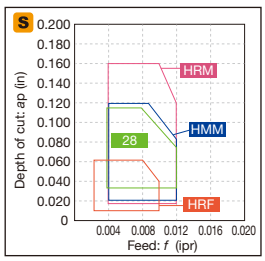
Chip control range





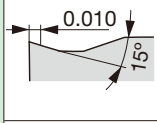
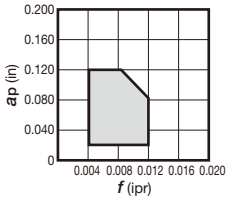
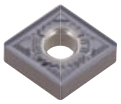
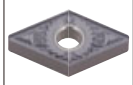
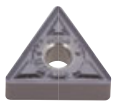
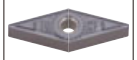
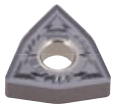
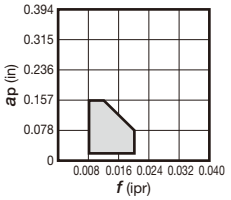
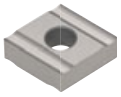
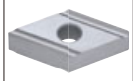
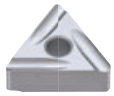
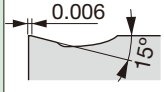
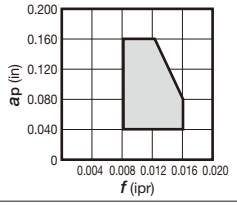
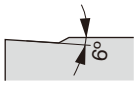
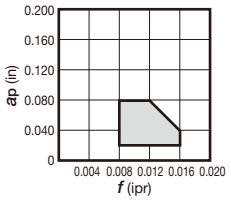
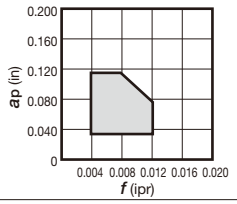
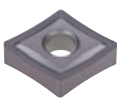
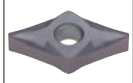
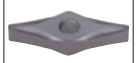
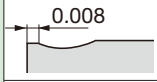
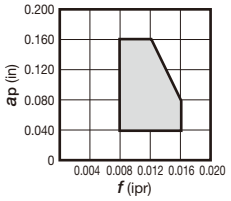
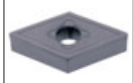
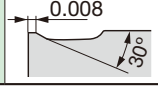
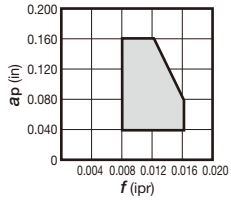
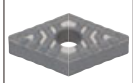




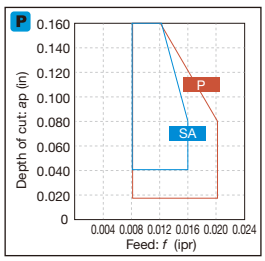


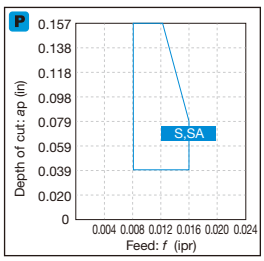
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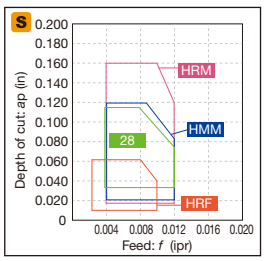
Please see the page B*** for the product details.

Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Medium cutting	**HMM**  	 B060	 B071	 B081	 B093	 B100	 B108	
	P  	 B060	 B072	 B081	 B094			
	S 0.006  	 B060	 B072	 B082	 B094			
	27  	 B061	 B072	 B082	 B094		 B108	
	28  	 B061	 B072		 B094	 B101		
	33 0.008  	 B061	 B072	 B082	 B094	 B101	 B108	
	37 0.008  	 B061	 B072	 B082	 B094		 B108	

Chip control range

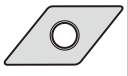
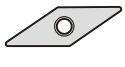
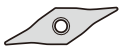
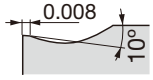
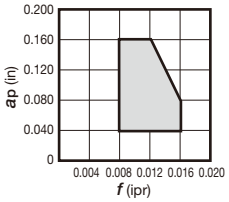
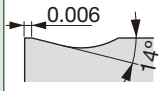
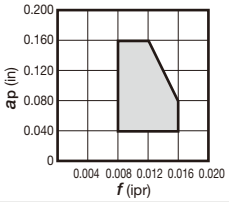
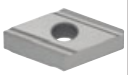
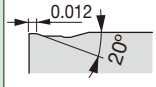
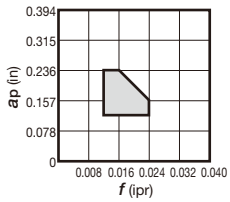
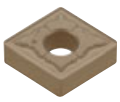
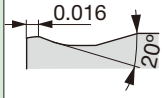
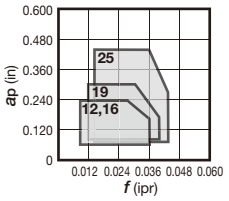
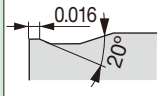
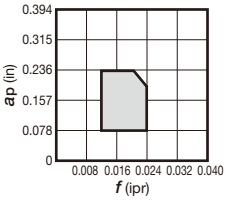
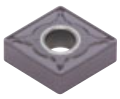
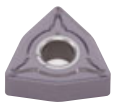
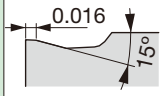
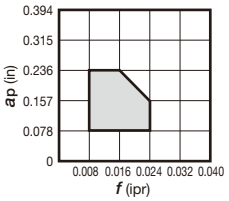
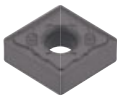
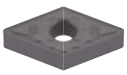
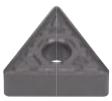
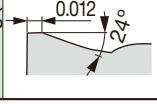
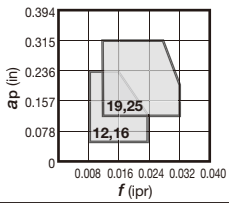




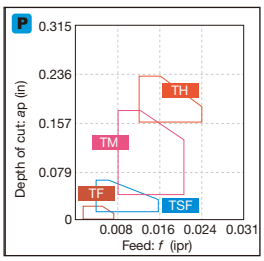


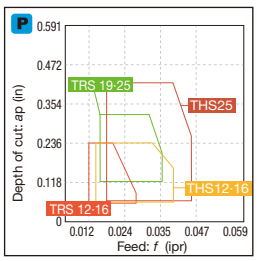
Please see the page B*** for the product details.

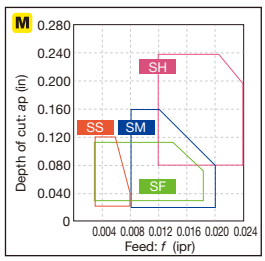
Chipbreaker Overview

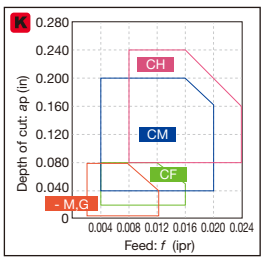
Application	Negative type with hole	C	D	S	T	V	W	Y
								
		80°	55°	90°	60°	35°	80°	25°
Medium cutting	**38**  	 B061	 B072		 B095			
	Parallel  		 B072					
Medium to heavy cutting	**TH**  	 B061	 B073	 B082	 B095		 B108	
	THS  	 B062	 B073	 B082	 B095		 B108	
	SH  	 B062	 B073	 B083			 B109	
	CH  	 B062	 B073	 B083	 B095		 B109	
Medium to heavy cutting (single side)	**TRS**  	 B062		 B083				

Chip control range



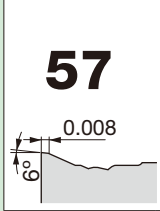
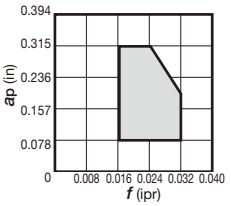
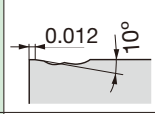
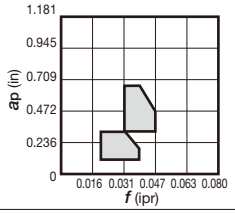
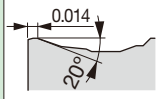
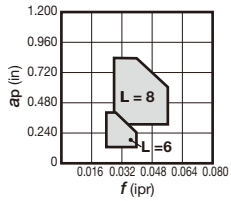
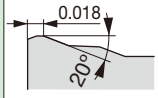
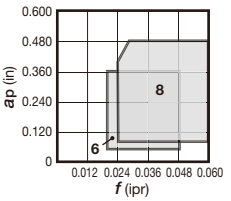
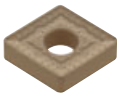
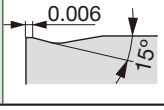
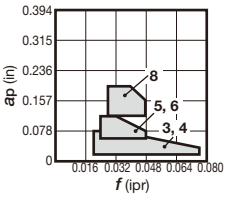




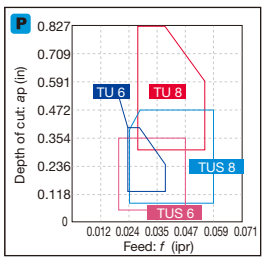


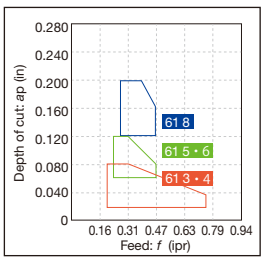
*-M,G: Without chipbreaker

Please see the page B*** for the product details.

Application	Negative type with hole	C	D	R	S	T	V	W
		80°	55°		90°	60°	35°	80°
Medium to heavy cutting (single side)	57  	 B062	 B073		 B083	 B095		
	65  	 B062			 B083			
Heavy cutting (single side)	TU  	 B063			 B084			
	TUS  	 B063			 B084			
Heavy cutting	61  			 B076				

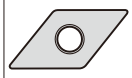
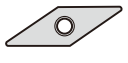
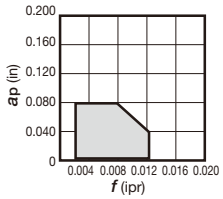
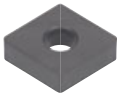
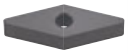
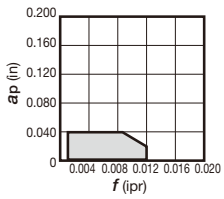
Chip control range

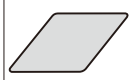
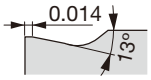
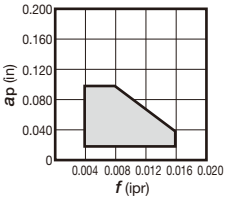




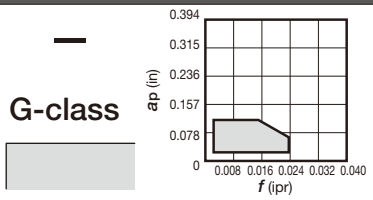
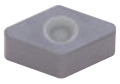
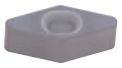
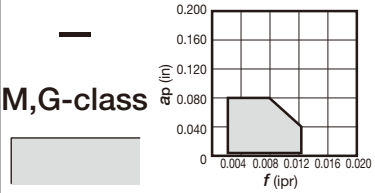
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Finishing to medium cutting	— M,G-class  	 B063	 B073, B074	 B076	 B084	 B096	 B101	 B109
	Wiper M-class  	 B064						

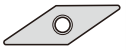
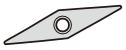
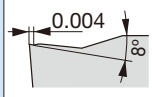
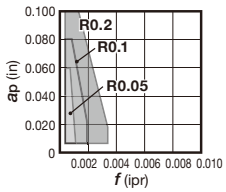
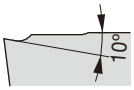
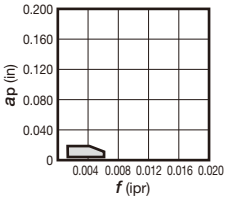
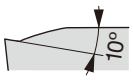
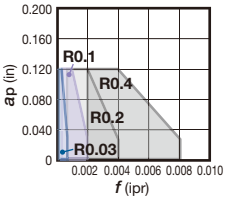
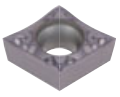
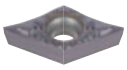
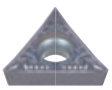
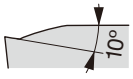
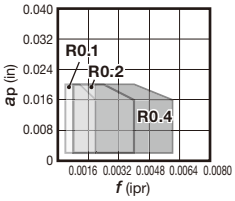
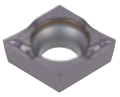
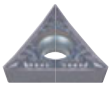
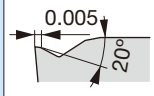
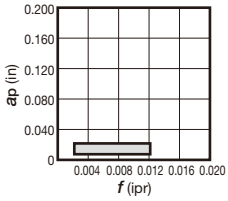
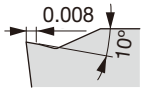
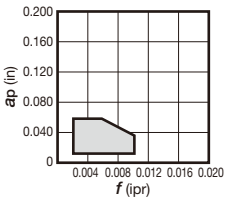
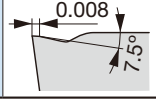
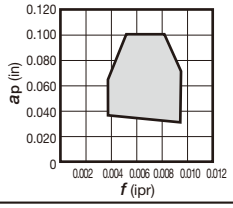
Application	Negative type without hole	C	D	KNMX	LNGN	R	S	T
								
		80°	55°	55°	90°		90°	60°
Finishing	S1  			 B110				

Please see the page B*** for the product details.

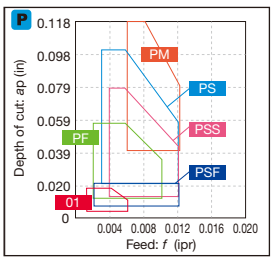
Application	Negative type without hole	C	D	H	R	S	T	V
		80°	55°	120°		90°	60°	35°
Finishing to medium cutting	G-class 	 B065	 B074	 B111		 B085		 B101
	M,G-class 	 B065	 B074		 B076	 B085	 B097	

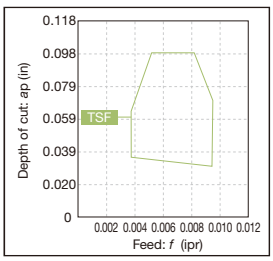
Please see the page B*** for the product details.

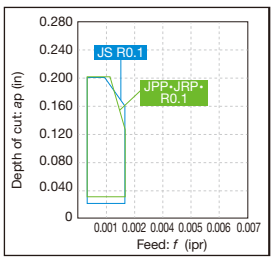
Chipbreaker Overview

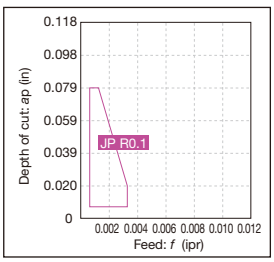
Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Precision finishing (sharp edge)	JP  	 B112	 B121			 B138		
	01  	 B112	 B121			 B138		
Finishing (sharp edge)	JS  	 B112	 B121			 B138		
Finishing	JS  	 B112	 B121			 B138		
	PSF  	 B113	 B121			 B138	 B152	
	PF  	 B113	 B122				 B152	
	TSF  	 B113	 B122			 B138	 B152	

Chip control range

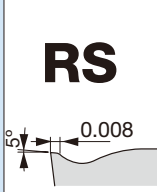
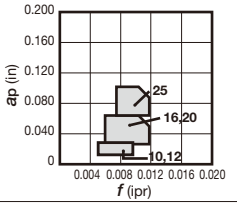
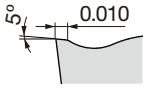
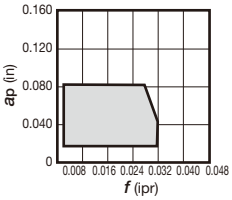
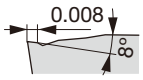
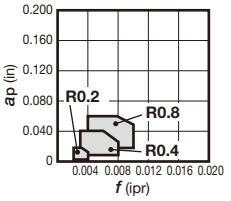
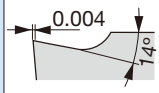
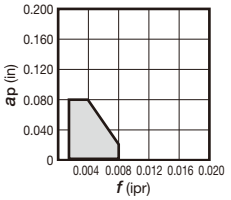
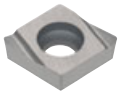
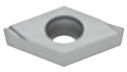
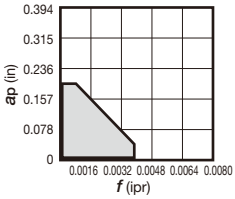
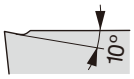
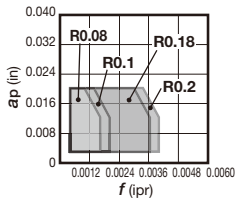
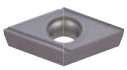
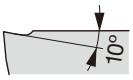
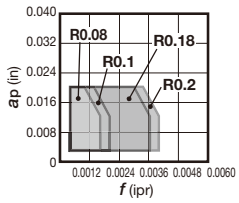
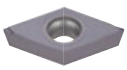




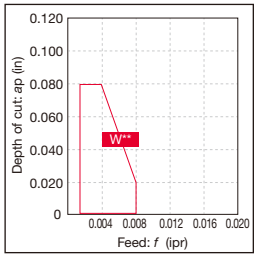


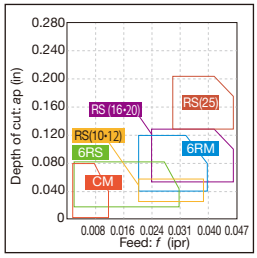


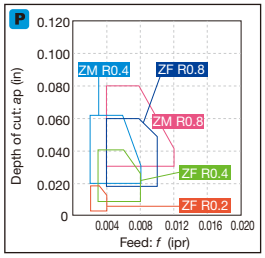
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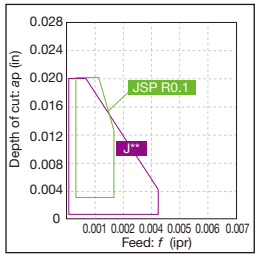
Application	Positive 7° with hole	C 80°	D 55°	R	S 90°	T 60°	V 35°	Y 25°
Finishing	**RS**  			 B130				
	6RS  			 B130				
	ZF  							 B159
	W**  	 B114, B115	 B122			 B139		
	J**  	 B113	 B122			 B139		
Finishing (sharp edge)	**JPP**  		 B123					
	JRP  		 B123					

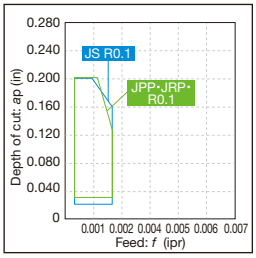
Chip control range





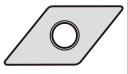
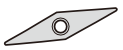
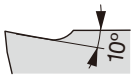
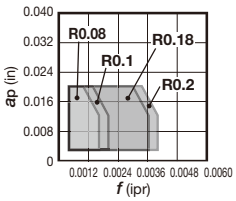
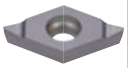
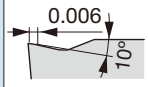
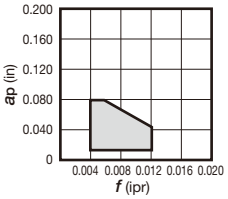
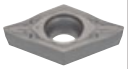
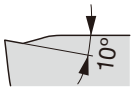
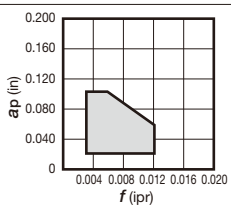
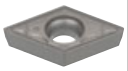
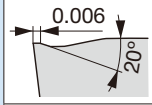
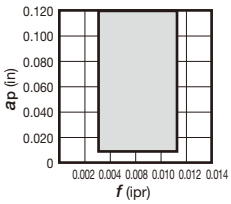
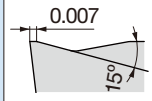
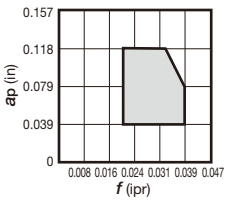
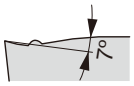
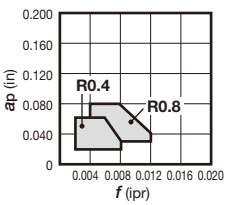
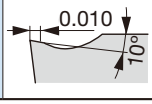
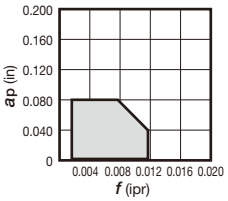




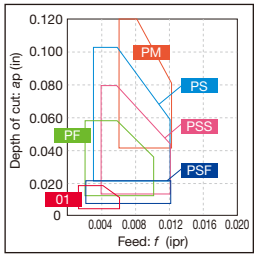


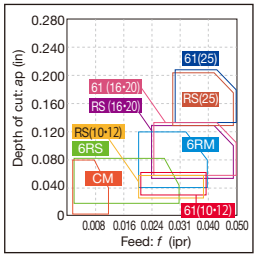
Please see the page B*** for the product details.

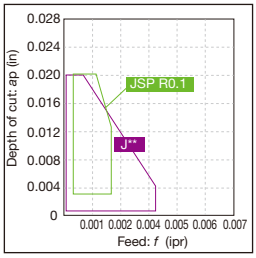
Chipbreaker Overview

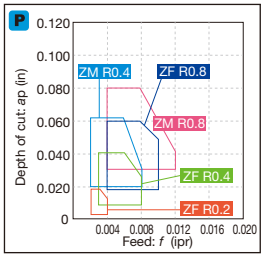
Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Finishing (sharp edge)	**JSP**  		 B123					
Finishing to medium cutting	**PSS**  	 B115	 B124			 B140	 B152	
	PS  	 B115	 B124		 B134	 B140	 B152	
	TM  	 B115	 B124			 B140	 B152	
	6RM  			 B130				
	ZM  							 B159
	CM  	 B115	 B124	 B130	 B134	 B140	 B152	

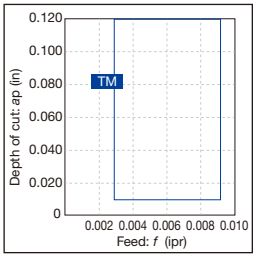
Chip control range



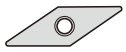
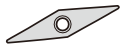
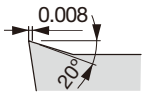
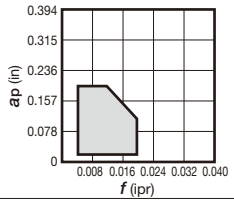
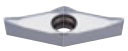
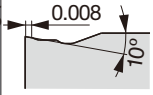
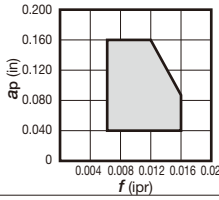
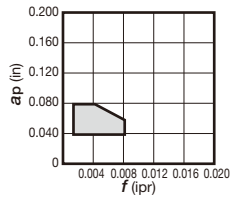
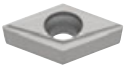
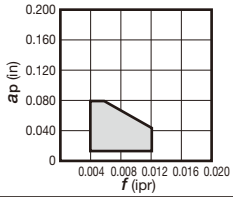
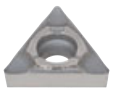
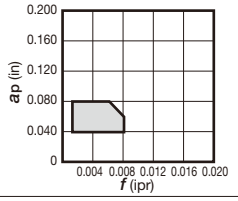
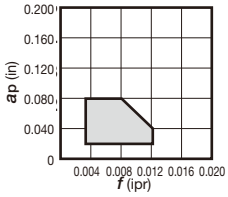
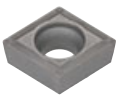
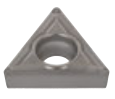
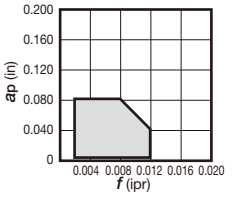
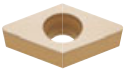




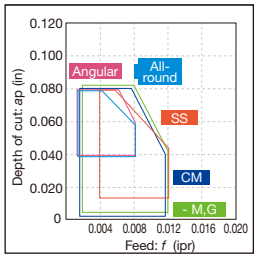


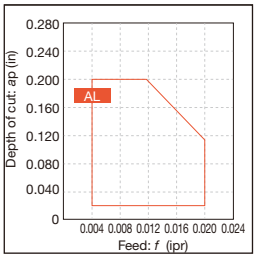


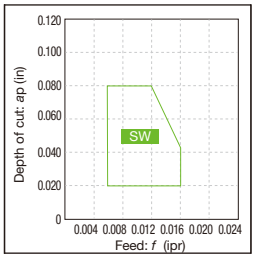
Please see the page B*** for the product details.

Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Finishing to medium cutting (for non-ferrous alloys)	**AL**  	 B116	 B124	 B130		 B140	 B153	
Finishing to medium cutting (wiper)	**SW**  	 B116						
Finishing to medium cutting	**All-round**  	 B116	 B124				 B153	
	SS  					 B141		
	Angular  	 B116	 B124					
	23  	 B116	 B125		 B134	 B141		
	— **M,G-class**  	 B116, B117	 B125					

Chip control range



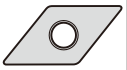
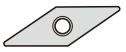
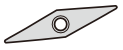
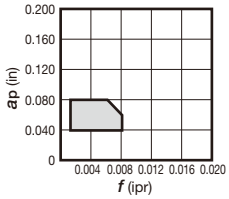
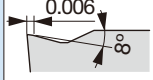
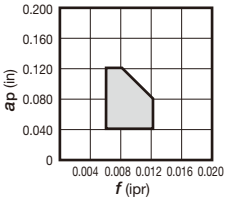
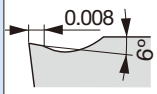
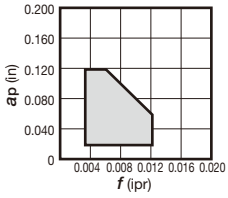
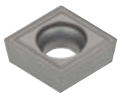
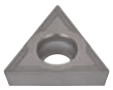
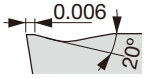
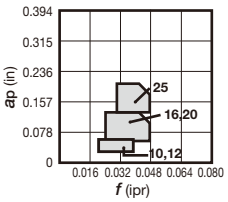




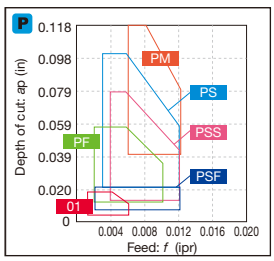
*-M,G: Without chipbreaker

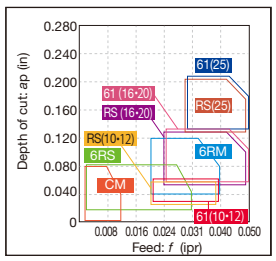
Please see the page B*** for the product details.

Chipbreaker Overview

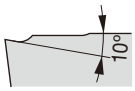
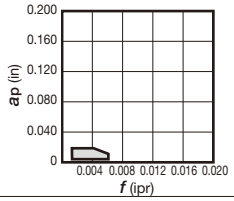
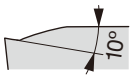
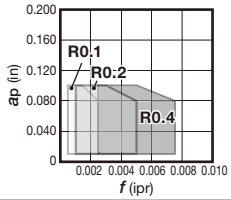
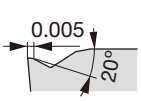
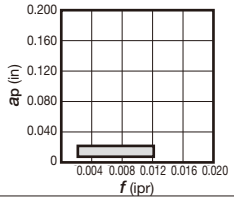
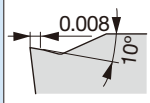
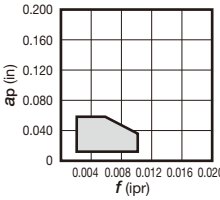
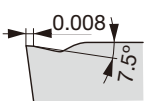
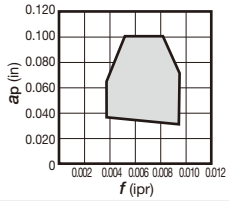
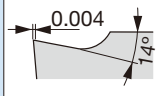
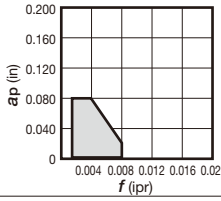
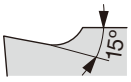
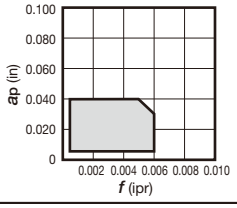
Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Finishing to medium cutting	— (with hand)  					 B141		
	PM  	 B117	 B125		 B134	 B141		
	24  	 B117	 B125		 B134	 B141	 B153	
Heavy cutting	61  			 B131				

Chip control range

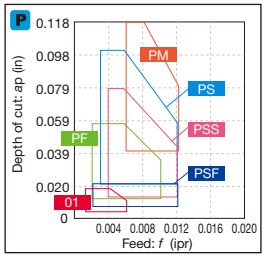


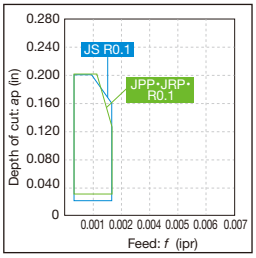


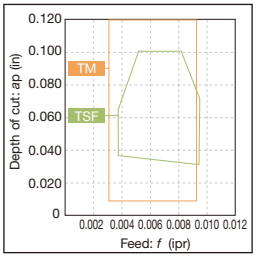
Please see the page B*** for the product details.

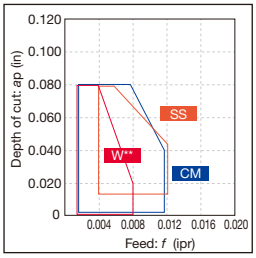
Application	Positive 11° with hole	C	D	E	S	T
		80°	55°	75°	90°	60°
Precision finishing	01  					B142
Precision finishing	JS  			B128		B142
Finishing	PSF  	B118				B142
Finishing	PF  	B118				B142
Finishing	TSF  	B118	B126			B143
Finishing	W**  	B118		B129	B135	B143, B144
Finishing	J08  			B128		

Chip control range



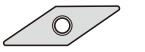
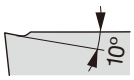
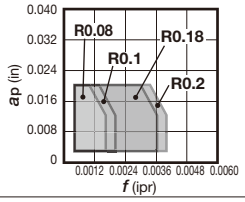
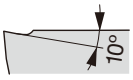
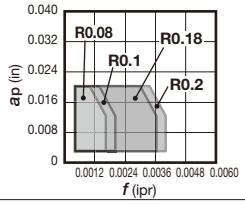
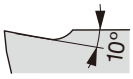
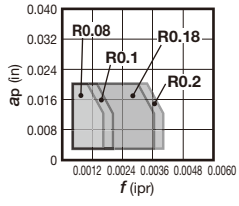
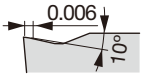
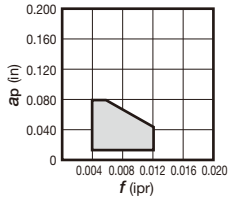
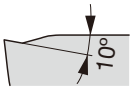
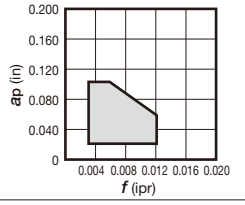
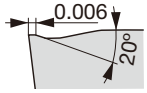
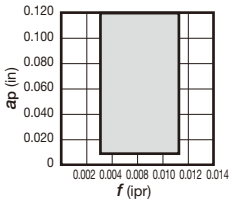
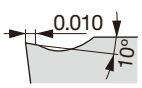
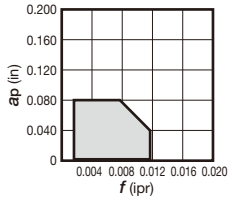




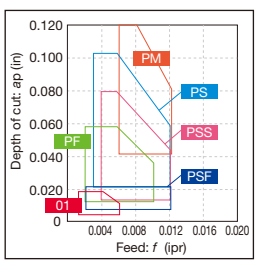


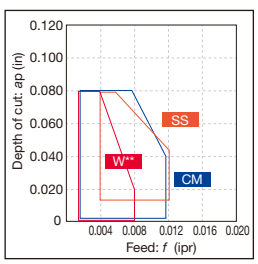
Please see the page B*** for the product details.

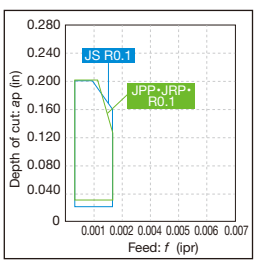
Chipbreaker Overview

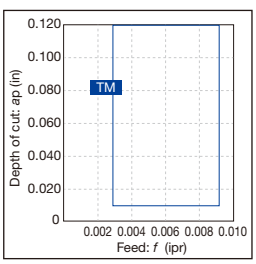
Application	Positive 11° with hole	C	D	S	T	V
						
		80°	55°	90°	60°	35°
Finishing (sharp edge)	**JPP**  					 B154
Finishing (sharp edge)	**JRP**  					 B154
Finishing (sharp edge)	**JSP**  					 B154
Finishing to medium cutting	**PSS**  	 B118			 B145	
Finishing to medium cutting	**PS**  	 B119	 B126	 B135	 B145	
Finishing to medium cutting	**TM**  	 B119	 B126		 B145	
Finishing to medium cutting	**CM**  	 B119		 B135	 B146	

Chip control range



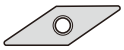
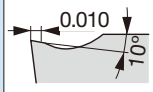
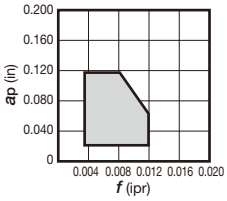
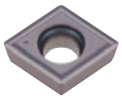
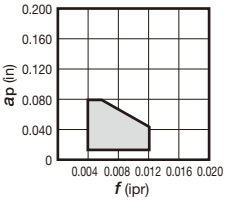
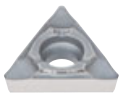
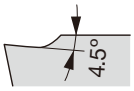
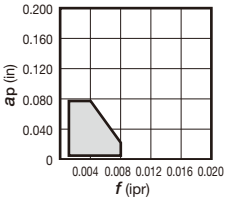
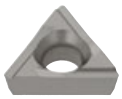
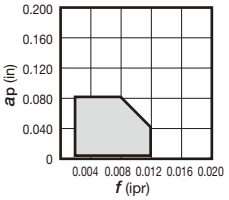
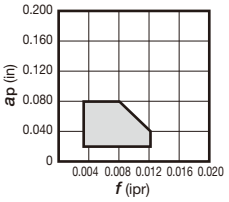
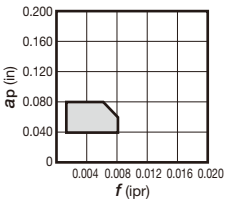
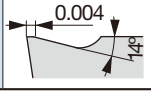
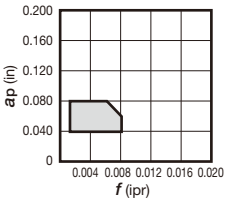
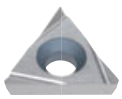




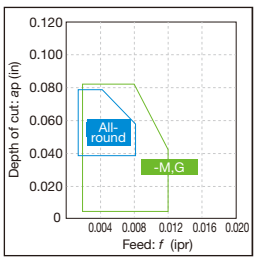


*Chip control range with typical R0.1

Please see the page B*** for the product details.

Application	Positive 11° with hole	C	S	T	V
					
		80°	90°	60°	35°
Finishing to medium cutting	**All-round**  	 B119			
	SS  			 B144	
	H**  			 B146	
	— **M,G-class**  	 B120	 B136	 B147	
	23  		 B135	 B146	
	— **(with hand)**  		 (Tungaloy standard hole specification) ISO non-compliant B136		
	— **(with hand)**  			 (Tungaloy standard hole specification) ISO non-compliant B146	

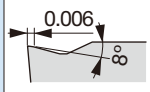
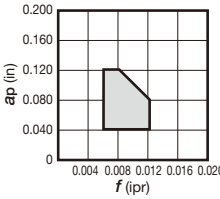
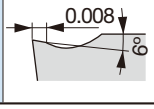
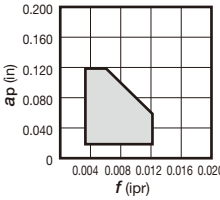
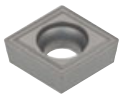
Chip control range

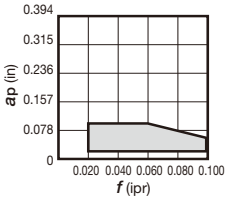


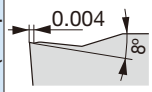
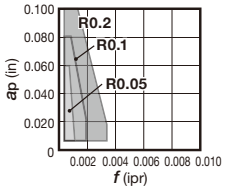
*-M,G: Without chipbreaker

Please see the page B*** for the product details.

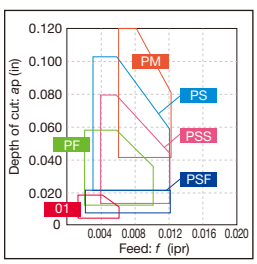
Chipbreaker Overview

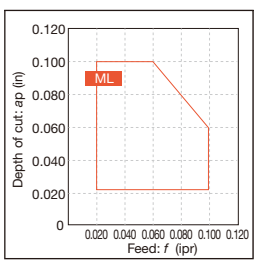
Application	Positive 11° with hole	C	S	T
		80°	90°	60°
Medium cutting	PM  	 B120		 B147
	24  	 B120	 B136	 B147

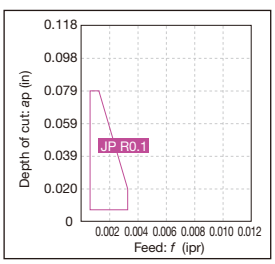
Application	Positive 11° with hole	W
		80°
Heavy cutting	ML  	 B155

Application	Positive 5° with hole	V
		35°
Precision finishing (sharp edge)	JP  	 B150

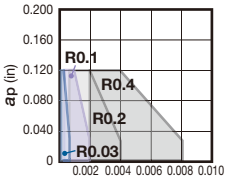
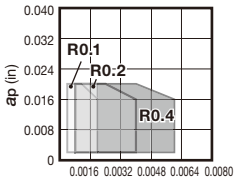
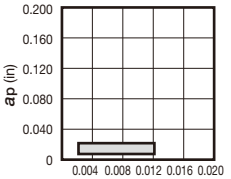
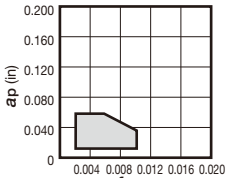
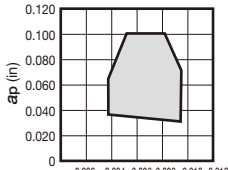
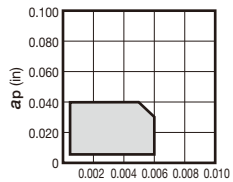
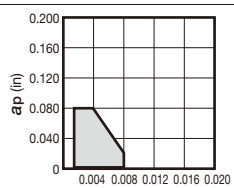
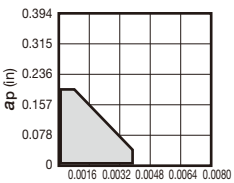
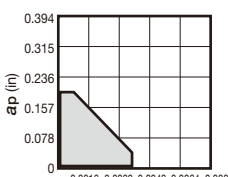
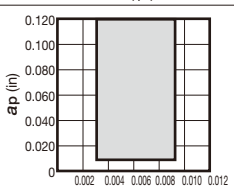
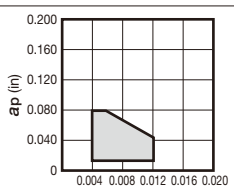
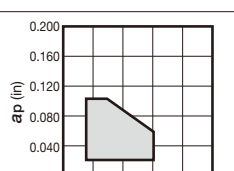
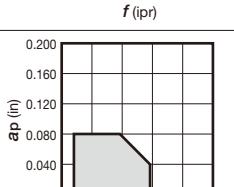
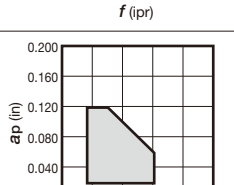
Chip control range



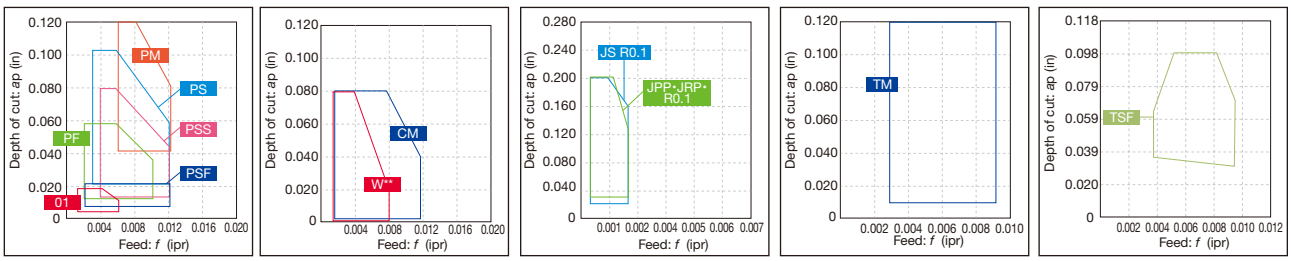




Please see the page B*** for the product details.

Application	Positive 5° with hole	V 35°	W 80°
Finishing (sharp edge)	**JS** 10° 	B150	
Finishing (sharp edge)	**JS** 10° 		B156
Finishing	**PSF** 0.005 20° 	B150	
Finishing	**PF** 0.008 10° 	B150	
Finishing	**TSF** 0.008 7.5° 	B150	
Finishing	**W08** 15° 		B156
Finishing	**W11** 15° 		B156
Finishing (sharp edge)	**J10** 30° 	B150	
Finishing	**J10** 30° 	B150	
Finishing to medium cutting	**TM** 0.006 20° 	B151	
Finishing to medium cutting	**PSS** 0.006 10° 	B151	
Finishing to medium cutting	**PS** 10° 	B151	
Finishing to medium cutting	**CM** 0.010 10° 	B151	
Medium cutting	**24** 0.008 6° 	B151	

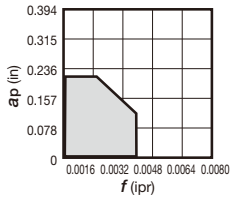
Chip control range

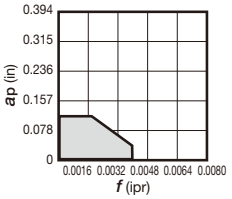


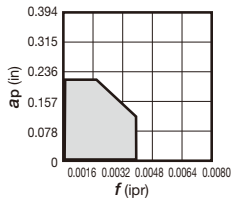
*Chip control range with typical R0.1

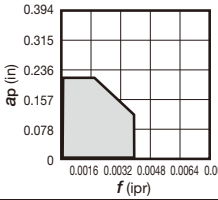
Please see the page B*** for the product details.

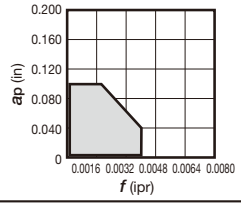
Chipbreaker Overview

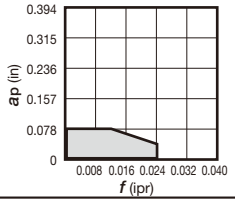
Application	Positive type with hole	JXF
Front turning	— 	 B159

Application	Positive type with hole	J10E
Back turning	— 	 B161

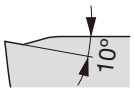
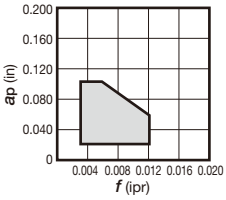
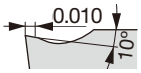
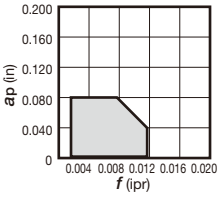
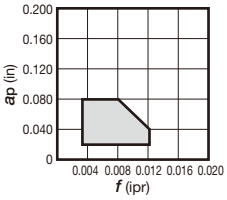
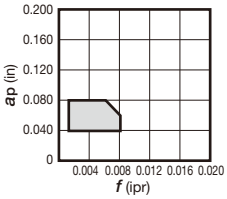
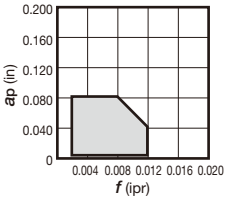
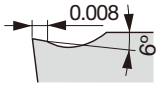
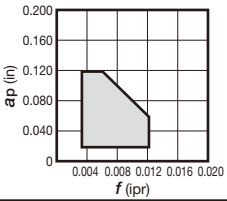
Application	Positive type with hole	JXB
Back turning	— 	 B160

Application	Positive type with hole	JXR
Reverse turning	— 	 B160

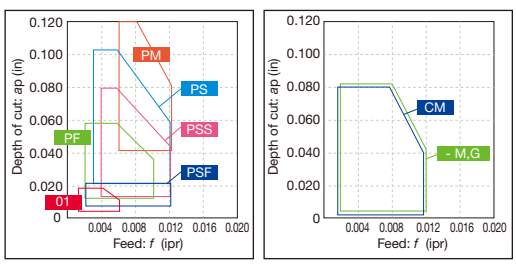
Application	Positive type with hole	JTB
Back turning	— 	 B161

Application	Round	RT
Medium cutting	— 	 Special round insert B131

Please see the page B*** for the product details.

Application	Positive 11° without hole	R	S	T
			90°	60°
Finishing to medium cutting	**PS**  			 B148
	CM  		 B137	 B148
	23  		 B137	 B148
	— (with hand)  		 B137	 B148
	— M,G-class  		 B137	 B148, B149
Medium cutting	**24**  			 B149

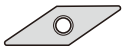
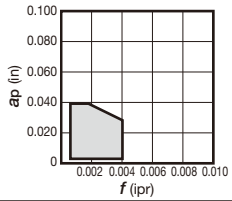
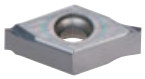
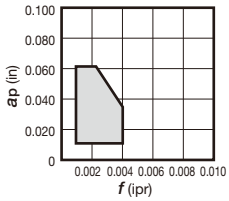
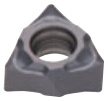
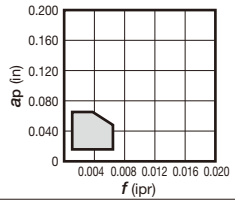
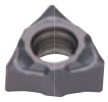
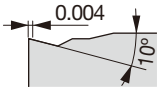
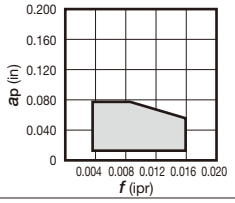
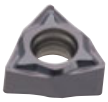
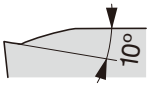
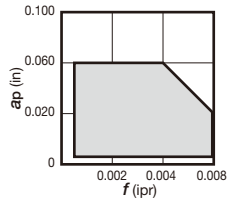
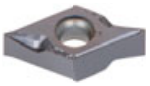
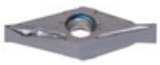
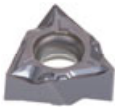
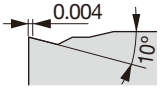
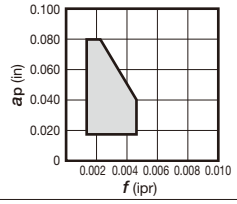
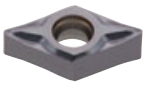
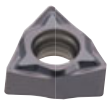
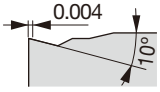
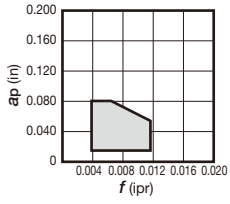
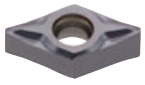
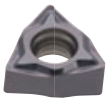
Chip control range



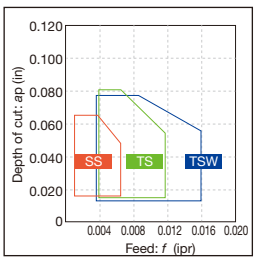
*-M,G: Without chipbreaker

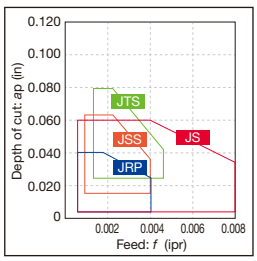
Please see the page B*** for the product details.

Chipbreaker Overview

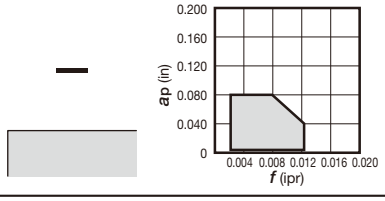
Application	Double-sided positive type with hole	C	D	V	W
					
		80°	55°	35°	80°
Finishing (sharp edge)	**JRP**  		 B126	 B155	
Finishing (sharp edge)	**JSS**  		 B126, B127		 B157
Finishing to medium cutting	**SS**  		 B127		 B157
Finishing	**TSW**  				 B157
Finishing to medium cutting (sharp edge)	**JS**  		 B127	 B155	 B157
Finishing to medium cutting (sharp edge)	**JTS**  		 B127		 B158
Finishing to medium cutting	**TS**  	 B120	 B127		 B158

Chip control range





Please see the page B*** for the product details.

Application	Positive 7° without hole	RCGX
		Special round insert
Medium cutting		 B132

Please see the page B*** for the product details.

Insert NEGATIVE TYPE

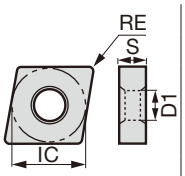
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T6215	T505	T515	AH8015	AH6225	AH120	GT9530	AT9530	NS9530	NS520	TH10
P	Steel	●	●ⓒ	●✠	✠	ⓒ				ⓒ✠	●ⓒ	●ⓒ	●ⓒ		●ⓒ	●ⓒ	●
M	Stainless		●ⓒ			●			ⓒ	●ⓒ	●ⓒ					●
K	Cast iron	●ⓒ	●ⓒ				●	●ⓒ			●ⓒ	●ⓒ	●ⓒ		●ⓒ	●
N	Non-ferrous															●
S	Superalloy								ⓒ		●ⓒ					
H	Hard material															



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	TF	CNMG 330.5E TF	CNMG090402E-TF	0.008	0.375	0.187	0.150
		CNMG 331E TF	CNMG090404E-TF	0.016	0.375	0.187	0.150
		CNMG 332E TF	CNMG090408E-TF	0.031	0.375	0.187	0.150
		CNMG 430.5 TF	CNMG120402-TF	0.008	0.500	0.187	0.203
		CNMG 431 TF	CNMG120404-TF	0.016	0.500	0.187	0.203
		CNMG 432 TF	CNMG120408-TF	0.031	0.500	0.187	0.203
	TSF	CNMG 330.5E TSF	CNMG090402E-TSF	0.008	0.375	0.187	0.150
		CNMG 331E TSF	CNMG090404E-TSF	0.016	0.375	0.187	0.150
		CNMG 332E TSF	CNMG090408E-TSF	0.031	0.375	0.187	0.150
		CNMG 430.5 TSF	CNMG120402-TSF	0.008	0.500	0.187	0.203
		CNMG 431 TSF	CNMG120404-TSF	0.016	0.500	0.187	0.203
		CNMG 432 TSF	CNMG120408-TSF	0.031	0.500	0.187	0.203
		CNMG 433 TSF	CNMG120412-TSF	0.047	0.500	0.187	0.203
	PS	CNMG 330.5E PS	CNMG090402E-PS	0.008	0.375	0.187	0.150
		CNMG 331E PS	CNMG090404E-PS	0.016	0.375	0.187	0.150
		CNMG 332E PS	CNMG090408E-PS	0.031	0.375	0.187	0.150
		CNMG 430.5 PS	CNMG120402-PS	0.008	0.500	0.187	0.203
		CNMG 431 PS	CNMG120404-PS	0.016	0.500	0.187	0.203
		CNMG 432 PS	CNMG120408-PS	0.031	0.500	0.187	0.203
		CNMG 433 PS	CNMG120412-PS	0.047	0.500	0.187	0.203
Finishing for mild steel	ZF	CNMG 330.5E ZF	CNMG090402E-ZF	0.008	0.375	0.187	0.150
		CNMG 331E ZF	CNMG090404E-ZF	0.016	0.375	0.187	0.150
		CNMG 332E ZF	CNMG090408E-ZF	0.031	0.375	0.187	0.150
		CNMG 430.5 ZF	CNMG120402-ZF	0.008	0.500	0.187	0.203
		CNMG 431 ZF	CNMG120404-ZF	0.016	0.500	0.187	0.203
		CNMG 432 ZF	CNMG120408-ZF	0.031	0.500	0.187	0.203
		CNMG 433 ZF	CNMG120412-ZF	0.047	0.500	0.187	0.203
Finishing	AS	CNMG 431 AS	CNMG120404-AS	0.016	0.500	0.187	0.203
		CNMG 432 AS	CNMG120408-AS	0.031	0.500	0.187	0.203
		CNMG 433 AS	CNMG120412-AS	0.047	0.500	0.187	0.203
	NS	CNMG 431 NS	CNMG120404-NS	0.016	0.500	0.187	0.203
		CNMG 432 NS	CNMG120408-NS	0.031	0.500	0.187	0.203
	TS	CNMG 330.5E TS	CNMG090402E-TS	0.008	0.375	0.187	0.150
		CNMG 331E TS	CNMG090404E-TS	0.016	0.375	0.187	0.150
		CNMG 332E TS	CNMG090408E-TS	0.031	0.375	0.187	0.150
		CNMG 430.5 TS	CNMG120402-TS	0.008	0.500	0.187	0.203
		CNMG 431 TS	CNMG120404-TS	0.016	0.500	0.187	0.203
		CNMG 432 TS	CNMG120408-TS	0.031	0.500	0.187	0.203
		CNMG 433 TS	CNMG120412-TS	0.047	0.500	0.187	0.203

● : Line up

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

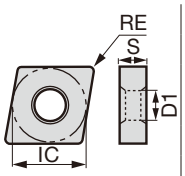
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

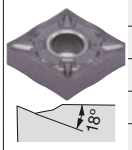
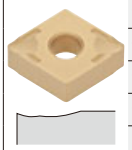
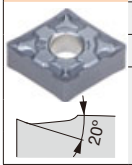
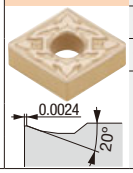
CN



Rhombic, 80° with hole

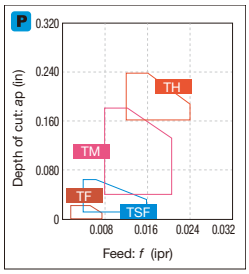
P	Steel	ɔ					ɔ✣	✣	●ɔ	●ɔ											
M	Stainless	●			●	ɔ	●ɔ	✣	●ɔ	●ɔ											
K	Cast iron		●	ɔ					●ɔ	●ɔ											
N	Non-ferrous																				
S	Superalloy				●	ɔ			●ɔ												
H	Hard material																				

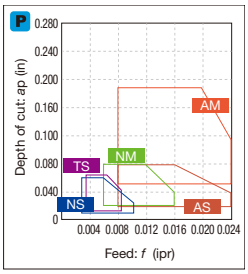


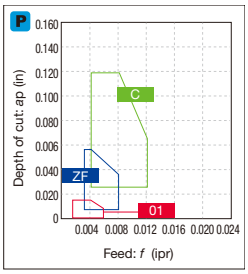
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6215	T5105	T5115	AH8005	AH8015	AH6225	AH6235	AH120	GH330	Dimension (in) RE	IC	S	D1
Finishing	**SF**	**CNMG 321 SF**	**CNMG090304-SF**	●					●				0.016	0.375	0.125	0.150
		CNMG 322 SF	CNMG090308-SF	●					●				0.031	0.375	0.125	0.150
		CNMG 431 SF	**CNMG120404-SF**	●					●				0.016	0.500	0.187	0.203
		CNMG 432 SF	CNMG120408-SF	●					●				0.031	0.500	0.187	0.203
		CNMG 433 SF	CNMG120412-SF	●					●				0.047	0.500	0.187	0.203
	SS	**CNMG 331E SS**	**CNMG090404E-SS**						●	●			0.016	0.375	0.187	0.150
		CNMG 332E SS	CNMG090408E-SS						●	●			0.031	0.375	0.187	0.150
		CNMG 431 SS	**CNMG120404-SS**	●					●	●	●	●	0.016	0.500	0.187	0.203
		CNMG 432 SS	CNMG120408-SS	●					●	●	●	●	0.031	0.500	0.187	0.203
		CNMG 433 SS	CNMG120412-SS	●					●	●		●	0.047	0.500	0.187	0.203
	HRF	**CNMG 431 HRF**	**CNMG120404-HRF**				●	●					0.016	0.500	0.187	0.203
		CNMG 432 HRF	CNMG120408-HRF				●	●					0.031	0.500	0.187	0.203
		CNMG 433 HRF	CNMG120412-HRF				●	●					0.047	0.500	0.187	0.203
	CF	**CNMG 431 CF**	**CNMG120404-CF**		●	●							0.016	0.500	0.187	0.203
		CNMG 432 CF	CNMG120408-CF		●	●							0.031	0.500	0.187	0.203
		CNMG 433 CF	CNMG120412-CF		●	●							0.047	0.500	0.187	0.203

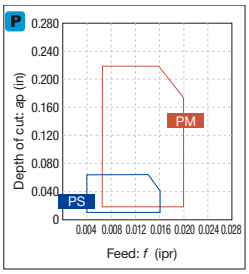
● : Line up

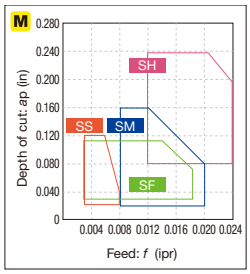
Chip control range

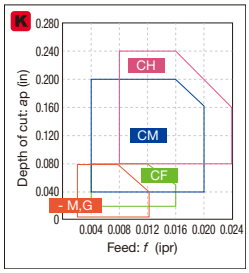


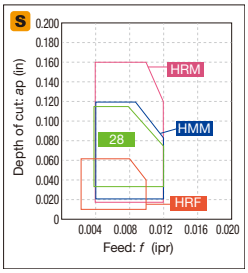












*-M,G: Without chipbreaker

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

Insert NEGATIVE TYPE

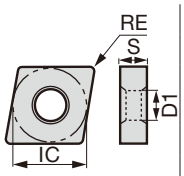
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

P	Steel	●	●ⓒ	●ⓒ	✠			●				●ⓒ	●ⓒ				●ⓒ	●ⓒ				●			
M	Stainless			●ⓒ				●														●			
K	Cast iron	●ⓒ	●ⓒ				●	●				●ⓒ	●ⓒ				●ⓒ	●ⓒ				●			
N	Non-ferrous																					●			
S	Superalloy							●																	
H	Hard material																								



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	Coated T9215	Coated T9225	Coated T9235	Coated T5105	Coated AH110	Coated cermet GT9530	Coated cermet GT720	Cermet NS9530	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing (wiper)	FW	CNMG 331E FW	CNMG090404E-FW	●	●	●				●		●			0.016	0.375	0.187	0.150
		CNMG 332E FW	CNMG090408E-FW	●	●	●				●		●			0.031	0.375	0.187	0.150
		CNMG 431 FW	CNMG120404-FW		●					●		●			0.016	0.500	0.187	0.203
		CNMG 432 FW	CNMG120408-FW	●	●	●				●		●			0.031	0.500	0.187	0.203
		*Wiper																
	AFW	CNMG 431 AFW	CNMG120404-AFW		●	●				●		●			0.016	0.500	0.187	0.203
		CNMG 432 AFW	CNMG120408-AFW	●	●	●	●	●		●					0.031	0.500	0.187	0.203
Finishing	01	CNGG 320.5-01	CNGG090302-01									●			0.008	0.375	0.125	0.150
		CNGG 321-01	CNGG090304-01									●			0.016	0.375	0.125	0.150
		CNGG 322-01	CNGG090308-01									●			0.031	0.375	0.125	0.150
		CNGG 430-01	CNGG120401-01						●						0.004	0.500	0.187	0.203
		CNGG 430.5-01	CNGG120402-01						●			●	●	●	0.008	0.500	0.187	0.203
		CNGG 431-01	CNGG120404-01						●			●	●	●	0.016	0.500	0.187	0.203
		CNGG 432-01	CNGG120408-01						●			●	●	●	0.031	0.500	0.187	0.203
	11	CNMG 431-11	CNMG120404-11							●		●		●	0.016	0.500	0.187	0.203
		CNMG 432-11	CNMG120408-11							●	●	●		●	0.031	0.500	0.187	0.203
Finishing for mild steel	17	CNMG 431-17	CNMG120404-17									●			0.016	0.500	0.187	0.203
		CNMG 432-17	CNMG120408-17									●			0.031	0.500	0.187	0.203
Boring (double sided)	CB	CNMG 321 CB	CNMG090304-CB									●			0.016	0.375	0.125	0.150
		CNMG 322 CB	CNMG090308-CB									●			0.031	0.375	0.125	0.150
Finishing	C	CNGG 431 R-C	CNGG120404R-C									●			0.016	0.500	0.187	0.203
		CNGG 431 L-C	CNGG120404L-C									●			0.016	0.500	0.187	0.203
		CNGG 432 R-C	CNGG120408R-C									●			0.031	0.500	0.187	0.203
		CNGG 432 L-C	CNGG120408L-C									●			0.031	0.500	0.187	0.203

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

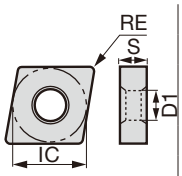
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

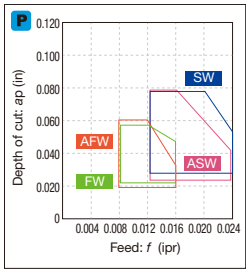
P	Steel	● ●ɔ ɔ✣ ✣ ɔ ɔ ✣ ✣ ɔ ● ●ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ●ɔ ✣ ɔ ● ●ɔ ●ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ ɔ ● ●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	ɔ ● ● ●ɔ
H	Hard material	

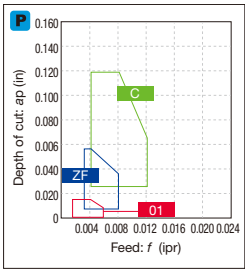


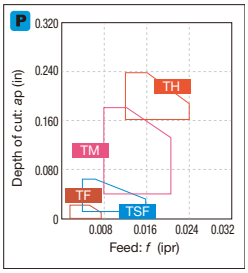
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T515	AH8015	AH6225	AH6235	AH725	AH110	AH120	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	TM	CNMG 321 TM	CNMG090304-TM		●	●												0.016	0.375	0.125	0.150
		CNMG 322 TM	CNMG090308-TM		●	●	●											0.031	0.375	0.125	0.150
		CNMG 331E TM	CNMG090404E-TM		●	●		●	●	●	●				●			0.016	0.375	0.187	0.150
		CNMG 332E TM	CNMG090408E-TM		●	●		●	●	●	●				●			0.031	0.375	0.187	0.150
		CNMG 333E TM	CNMG090412E-TM		●	●		●	●	●	●				●			0.047	0.375	0.187	0.150
		CNMG 431 TM	CNMG120404-TM	●	●	●	●	●	●	●	●	●			●			0.016	0.500	0.187	0.203
		CNMG 432 TM	CNMG120408-TM	●	●	●	●	●	●	●	●	●	●	●	●			0.031	0.500	0.187	0.203
		CNMG 433 TM	CNMG120412-TM	●	●	●	●	●	●	●	●	●		●	●			0.047	0.500	0.187	0.203
		CNMG 434 TM	CNMG120416-TM		●	●	●	●	●	●	●	●			●			0.063	0.500	0.187	0.203
		CNMG 542 TM	CNMG160608-TM		●													0.031	0.625	0.250	0.250
		CNMG 543 TM	CNMG160612-TM	●	●	●	●								●			0.047	0.625	0.250	0.250
		CNMG 642 TM	CNMG190608-TM	●	●	●	●								●			0.031	0.750	0.250	0.312
		CNMG 643 TM	CNMG190612-TM	●	●	●	●								●			0.047	0.750	0.250	0.312
	PM	CNMG 331E PM	CNMG090404E-PM		●	●		●		●	●							0.016	0.375	0.187	0.150
		CNMG 332E PM	CNMG090408E-PM		●	●		●		●	●							0.031	0.375	0.187	0.150
		CNMG 333E PM	CNMG090412E-PM		●	●		●		●	●							0.047	0.375	0.187	0.150
		CNMG 431-PM	CNMG120404-PM		●	●		●		●	●							0.016	0.500	0.187	0.203
		CNMG 432-PM	CNMG120408-PM		●	●		●		●	●							0.031	0.500	0.187	0.203
		CNMG 433-PM	CNMG120412-PM		●	●		●		●	●							0.047	0.500	0.187	0.203
		CNMG 434-PM	CNMG120416-PM		●	●		●		●	●							0.063	0.500	0.187	0.203
Medium cutting for mild steel	ZM	CNMG 331E ZM	CNMG090404E-ZM		●	●		●		●	●							0.016	0.375	0.187	0.150
		CNMG 332E ZM	CNMG090408E-ZM		●	●		●		●	●							0.031	0.375	0.187	0.150
		CNMG 333E ZM	CNMG090412E-ZM		●	●		●		●	●							0.047	0.375	0.187	0.150
		CNMG 431 ZM	CNMG120404-ZM		●	●		●		●	●							0.016	0.500	0.187	0.203
		CNMG 432 ZM	CNMG120408-ZM		●	●	●	●		●	●					●	●	0.031	0.500	0.187	0.203
		CNMG 433 ZM	CNMG120412-ZM		●	●	●	●		●	●					●		0.047	0.500	0.187	0.203
		CNMG 434 ZM	CNMG120416-ZM		●	●		●		●	●							0.063	0.500	0.187	0.203

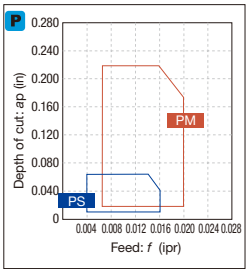
● : Line up

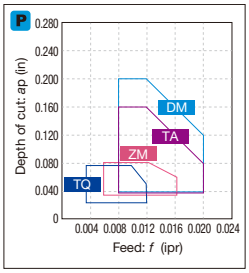
Chip control range











Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

Insert NEGATIVE TYPE

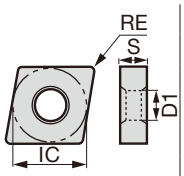
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

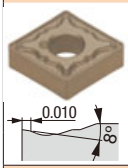
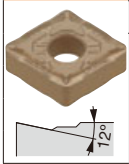
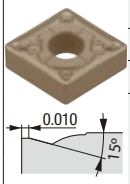
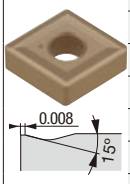
CN



Rhombic, 80° with hole

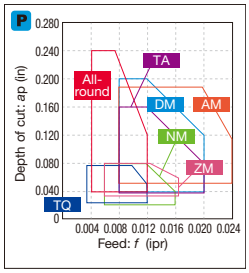
P	Steel	●	●ɔ	●ɔ✣	✣	ɔ							ɔ✣	●	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●	
M	Stainless		●ɔ			●						ɔ	●ɔ	●	●ɔ					●	
K	Cast iron	●ɔ	●ɔ				●	●ɔ	●	ɔ	✣			●	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●	
N	Non-ferrous																			●	
S	Superalloy											ɔ		●	●ɔ						
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	AH8015	AH6225	AH110	AH120	Coated cermet GT9530	GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium cutting	**AM**	**CNMG 432 AM**	**CNMG120408-AM**		●	●																	0.031	0.500	0.187	0.203
		CNMG 433 AM	CNMG120412-AM		●	●																	0.047	0.500	0.187	0.203
		CNMG 434 AM	CNMG120416-AM		●	●																	0.063	0.500	0.187	0.203
	NM	**CNMG 432 NM**	**CNMG120408-NM**	●	●	●	●													●			0.031	0.500	0.187	0.203
		CNMG 433 NM	CNMG120412-NM		●	●	●																0.047	0.500	0.187	0.203
	DM	**CNMG 431 DM**	**CNMG120404-DM**		●	●		●						●	●								0.016	0.500	0.187	0.203
		CNMG 432 DM	CNMG120408-DM	●	●	●	●	●						●	●								0.031	0.500	0.187	0.203
		CNMG 433 DM	CNMG120412-DM	●	●	●	●	●						●	●								0.047	0.500	0.187	0.203
		CNMG 434 DM	CNMG120416-DM		●	●		●						●	●								0.063	0.500	0.187	0.203
	All-round	**CNMG 321**	**CNMG090304**		●	●														●			0.016	0.375	0.125	0.150
		CNMG 322	CNMG090308	●	●	●	●												●	●			0.031	0.375	0.125	0.150
		CNMG 431	**CNMG120404**	●	●	●	●		●	●	●	●	●			●	●	●		●		●	0.016	0.500	0.187	0.203
		CNMG 432	CNMG120408	●	●	●	●		●	●	●	●	●			●	●	●		●	●	●	0.031	0.500	0.187	0.203
		CNMG 433	CNMG120412	●	●	●	●		●	●	●	●	●			●	●				●	●	0.047	0.500	0.187	0.203
		CNMG 434	CNMG120416	●	●	●	●		●	●	●	●	●										0.063	0.500	0.187	0.203
		CNMG 542	**CNMG160608**	●	●	●	●				●	●	●				●						0.031	0.625	0.250	0.250
		CNMG 543	CNMG160612	●	●	●	●			●	●	●	●				●						0.047	0.625	0.250	0.250
		CNMG 544	CNMG160616	●	●	●	●			●		●											0.063	0.625	0.250	0.250
		CNMG 642	**CNMG190608**		●	●	●																0.031	0.750	0.250	0.312
		CNMG 643	CNMG190612	●	●	●	●			●		●	●				●						0.047	0.750	0.250	0.312
		CNMG 644	CNMG190616		●	●	●			●		●	●				●						0.063	0.750	0.250	0.312

● : Line up

Chip control range



Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

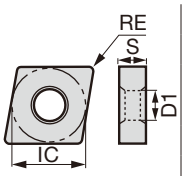
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

P	Steel	●	●ɔ	●ɔ✠	ɔ								ɔ✠	✠		ɔ					
M	Stainless		●ɔ		●						●	ɔ	●ɔ	✠		ɔ					
K	Cast iron	●ɔ	●ɔ			●	●ɔ	●	ɔ	✠						ɔ					
N	Non-ferrous																				
S	Superalloy										●	ɔ			ɔ	●					
H	Hard material																				

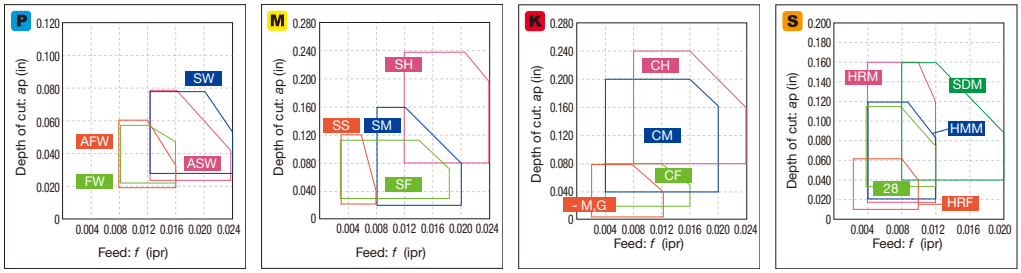


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T6215	T505	T515	T5105	T5115	T5125	AH8005	AH8015	AH6225	AH6235	AH905	AH725	Dimension (in) RE	IC	S	D1
Medium cutting	**SM**	**CNMG 331E SM**	**CNMG090404E-SM**				●								●				0.016	0.375	0.187	0.150
		CNMG 332E SM	CNMG090408E-SM				●								●				0.031	0.375	0.187	0.150
		CNMG 333E SM	CNMG090412E-SM				●								●				0.047	0.375	0.187	0.150
		CNMG 431 SM	**CNMG120404-SM**				●								●	●		●	0.016	0.500	0.187	0.203
		CNMG 432 SM	CNMG120408-SM				●								●	●	●	●	0.031	0.500	0.187	0.203
		CNMG 433 SM	CNMG120412-SM				●								●	●		●	0.047	0.500	0.187	0.203
		CNMG 543 SM	**CNMG160612-SM**				●								●				0.047	0.625	0.250	0.250
		CNMG 544 SM	CNMG160616-SM												●				0.063	0.625	0.250	0.250
		CNMG 643 SM	**CNMG190612-SM**												●				0.047	0.750	0.250	0.312
		CNMG 644 SM	CNMG190616-SM												●				0.063	0.750	0.250	0.312
	SDM	**CNMG 431 SDM**	**CNMG120404-SDM**				●						●	●	●	●			0.016	0.500	0.187	0.203
		CNMG 432 SDM	CNMG120408-SDM				●						●	●	●	●			0.031	0.500	0.187	0.203
		CNMG 433 SDM	CNMG120412-SDM				●						●	●	●	●			0.047	0.500	0.187	0.203
	HRM	**CNMG 431 HRM**	**CNMG120404-HRM**										●	●					0.016	0.500	0.187	0.203
		CNMG 432 HRM	CNMG120408-HRM										●	●					0.031	0.500	0.187	0.203
		CNMG 433 HRM	CNMG120412-HRM										●	●					0.047	0.500	0.187	0.203
		CNMG 542 HRM	**CNMG160608-HRM**										●	●					0.031	0.625	0.250	0.250
		CNMG 543 HRM	CNMG160612-HRM										●	●					0.047	0.625	0.250	0.250
		CNMG 643 HRM	**CNMG190612-HRM**										●	●					0.047	0.750	0.250	0.312
		CNMG 644 HRM	CNMG190616-HRM										●	●					0.063	0.750	0.250	0.312
	CM	**CNMG 431 CM**	**CNMG120404-CM**	●	●		●	●	●	●	●	●							0.016	0.500	0.187	0.203
		CNMG 432 CM	CNMG120408-CM	●	●		●	●	●	●	●	●							0.031	0.500	0.187	0.203
		CNMG 433 CM	CNMG120412-CM	●	●		●	●	●	●	●	●							0.047	0.500	0.187	0.203
		CNMG 542 CM	**CNMG160608-CM**	●	●		●	●	●	●	●	●							0.031	0.625	0.250	0.250
		CNMG 543 CM	CNMG160612-CM	●	●		●	●	●	●	●	●							0.047	0.625	0.250	0.250
Medium cutting (wiper)	**SW**	**CNMG 332E SW**	**CNMG090408E-SW**	●	●	●					●								0.031	0.375	0.187	0.150
		CNMG 333E SW	CNMG090412E-SW	●	●	●					●								0.047	0.375	0.187	0.150
		CNMG 432 SW	**CNMG120408-SW**	●	●	●			●		●								0.031	0.500	0.187	0.203
		CNMG 433 SW	CNMG120412-SW	●	●	●			●		●								0.047	0.500	0.187	0.203
		*Wiper																				

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Chip control range



Reference pages: External toolholder → C019 - J-Series toolholder → G036 Internal toolholder → D027 - TungCap → K008 -

Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

| | | |

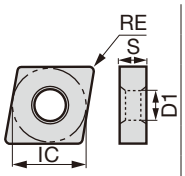
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

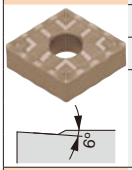
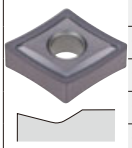
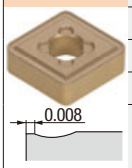
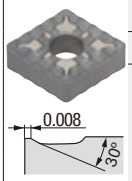
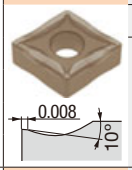
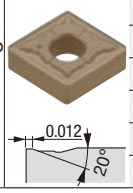
CN



Rhombic, 80° with hole

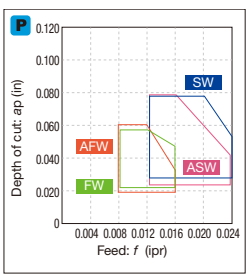
P	Steel	●	●◐	◐✠	✠				◐✠		◐	●	●◐	●◐	◐◐		◐◐				●				
M	Stainless		●◐				●	◐	●◐		◐	●	●◐	●◐							●				
K	Cast iron	●◐	●◐			●◐					◐	●	●◐	●◐	◐◐		◐◐		●	●					
N	Non-ferrous																		●	●					
S	Superalloy						●	◐		◐	●	●	●◐						●						
H	Hard material																								

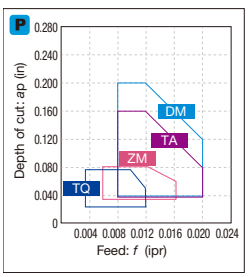


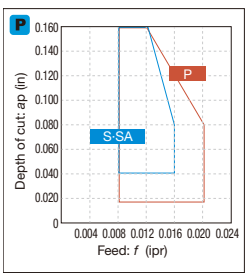
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T515	AH8005	AH8015	AH6225	AH905	AH725	AH110	AH120	GH330	Coated cermet GT720		Cermet NS9530		Uncoated KS05F	TH10	Dimension (in) RE	IC	S	D1
Medium cutting	27	CNMG 431-27	CNMG120404-27		●	●													●				0.016	0.500	0.187	0.203
		CNMG 432-27	CNMG120408-27		●	●	●							●					●				0.031	0.500	0.187	0.203
		CNMG 433-27	CNMG120412-27			●																	0.047	0.500	0.187	0.203
	28	CNGP 430-28	CNGP120401-28											●	●								0.004	0.500	0.187	0.203
		CNGP 430.5-28	CNGP120402-28									●		●	●								0.008	0.500	0.187	0.203
		CNGP 431-28	CNGP120404-28									●		●	●						●		0.016	0.500	0.187	0.203
		CNGP 432-28	CNGP120408-28									●		●	●						●		0.031	0.500	0.187	0.203
		CNGG 430.5-28	CNGG120402-28																		●		0.008	0.500	0.187	0.203
		CNGG 431-28	CNGG120404-28																		●		0.016	0.500	0.187	0.203
		CNGG 432-28	CNGG120408-28																		●		0.031	0.500	0.187	0.203
		CNMG 431-28	CNMG120404-28			●			●	●				●	●						●		0.016	0.500	0.187	0.203
		CNMG 432-28	CNMG120408-28						●	●				●	●						●		0.031	0.500	0.187	0.203
		CNMG 433-28	CNMG120412-28						●	●					●								0.047	0.500	0.187	0.203
	33	CNMG 432-33	CNMG120408-33											●			●						0.031	0.500	0.187	0.203
		CNMG 434-33	CNMG120416-33		●																		0.063	0.500	0.187	0.203
		CNMG 543-33	CNMG160612-33		●																		0.047	0.625	0.250	0.250
		CNMG 643-33	CNMG190612-33		●																		0.047	0.750	0.250	0.312
	37	CNMG 431-37	CNMG120404-37		●														●				0.016	0.500	0.187	0.203
		CNMG 432-37	CNMG120408-37		●	●										●			●			●	0.031	0.500	0.187	0.203
		CNMG 433-37	CNMG120412-37		●																		0.047	0.500	0.187	0.203
	38	CNMG 431-38	CNMG120404-38													●			●				0.016	0.500	0.187	0.203
		CNMG 432-38	CNMG120408-38		●								●			●			●				0.031	0.500	0.187	0.203
Medium to heavy cutting	TH	CNMG 432 TH	CNMG120408-TH	●	●	●	●	●		●	●				●								0.031	0.500	0.187	0.203
		CNMG 433 TH	CNMG120412-TH	●	●	●	●	●		●	●				●								0.047	0.500	0.187	0.203
		CNMG 434 TH	CNMG120416-TH	●	●	●	●	●		●					●								0.063	0.500	0.187	0.203
		CNMG 543 TH	CNMG160612-TH	●	●	●	●								●								0.047	0.625	0.250	0.250
		CNMG 544 TH	CNMG160616-TH	●	●	●	●								●								0.063	0.625	0.250	0.250
		CNMG 643 TH	CNMG190612-TH	●	●	●	●								●								0.047	0.750	0.250	0.312
		CNMG 644 TH	CNMG190616-TH	●	●	●	●								●								0.063	0.750	0.250	0.312

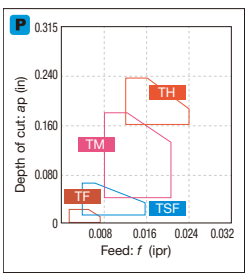
● : Line up

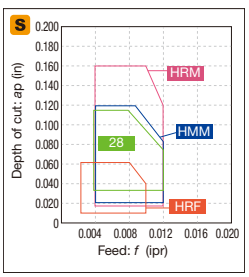
Chip control range











Insert NEGATIVE TYPE

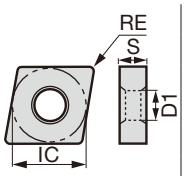
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

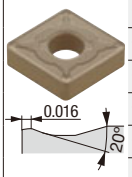
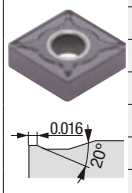
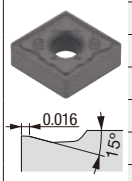
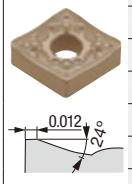
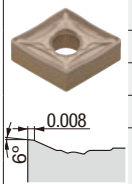
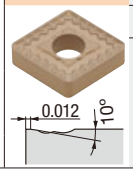
CN



Rhombic, 80° with hole

P	Steel	●	●◐	◐✠	✠					◐✠	✠													
M	Stainless		●◐							●◐	✠													
K	Cast iron	●◐	●◐			●◐	●	◐	✠															
N	Non-ferrous																							
S	Superalloy																							
H	Hard material																							



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T515	T5105	T5115	T5125	AH6225	AH6235	Dimension (in) RE	IC	S	D1
Medium to heavy cutting	**THS**	**CNMG 432 THS**	**CNMG120408-THS**	●	●	●	●							0.031	0.500	0.187	0.203
		**CNMG 433 THS**	**CNMG120412-THS**	●	●	●	●							0.047	0.500	0.187	0.203
		CNMG 434 THS	**CNMG120416-THS**	●	●	●	●							0.063	0.500	0.187	0.203
		CNMG 543 THS	**CNMG160612-THS**	●	●	●	●							0.047	0.625	0.250	0.250
		CNMG 544 THS	**CNMG160616-THS**	●	●	●	●							0.063	0.625	0.250	0.250
		CNMG 643 THS	**CNMG190612-THS**		●	●	●							0.047	0.750	0.250	0.312
		CNMG 644 THS	**CNMG190616-THS**		●	●	●							0.063	0.750	0.250	0.312
		CNMG 646 THS	**CNMG190624-THS**		●	●	●							0.094	0.750	0.250	0.312
		CNMG 866 THS	**CNMG250924-THS**		●	●	●							0.094	1.000	0.375	0.359
Medium to heavy cutting	**SH**	**CNMG 432 SH**	**CNMG120408-SH**									●	●	0.031	0.500	0.187	0.203
		**CNMG 433 SH**	**CNMG120412-SH**									●	●	0.047	0.500	0.187	0.203
		CNMG 434 SH	**CNMG120416-SH**									●	●	0.063	0.500	0.187	0.203
		CNMG 543 SH	**CNMG160612-SH**									●	●	0.047	0.625	0.250	0.250
		CNMG 544 SH	**CNMG160616-SH**									●	●	0.063	0.625	0.250	0.250
		CNMG 643 SH	**CNMG190612-SH**									●	●	0.047	0.750	0.250	0.312
		CNMG 644 SH	**CNMG190616-SH**									●	●	0.063	0.750	0.250	0.312
Medium to heavy cutting	**CH**	**CNMG 431 CH**	**CNMG120404-CH**						●	●	●			0.016	0.500	0.187	0.203
		**CNMG 432 CH**	**CNMG120408-CH**					●	●	●	●			0.031	0.500	0.187	0.203
		CNMG 433 CH	**CNMG120412-CH**					●	●	●	●			0.047	0.500	0.187	0.203
		CNMG 543 CH	**CNMG160612-CH**							●	●			0.047	0.625	0.250	0.250
		CNMG 544 CH	**CNMG160616-CH**							●	●			0.063	0.625	0.250	0.250
		CNMG 643 CH	**CNMG190612-CH**						●	●	●			0.047	0.750	0.250	0.312
		CNMG 644 CH	**CNMG190616-CH**						●	●	●			0.063	0.750	0.250	0.312
Medium to heavy cutting (single sided)	**TRS**	**CNMM 432 TRS**	**CNMM120408-TRS**	●	●	●	●							0.031	0.500	0.187	0.203
		**CNMM 433 TRS**	**CNMM120412-TRS**		●	●	●							0.047	0.500	0.187	0.203
		CNMM 543 TRS	**CNMM160612-TRS**		●	●	●							0.047	0.625	0.250	0.250
		CNMM 544 TRS	**CNMM160616-TRS**		●	●	●							0.063	0.625	0.250	0.250
		CNMM 644 TRS	**CNMM190616-TRS**		●	●	●							0.063	0.750	0.250	0.312
		CNMM 646 TRS	**CNMM190624-TRS**		●	●	●							0.094	0.750	0.250	0.312
		CNMM 866 TRS	**CNMM250924-TRS**		●	●	●							0.094	1.000	0.375	0.359
	57	**CNMM 431-57**	**CNMM120404-57**			●								0.016	0.500	0.187	0.203
		**CNMM 432-57**	**CNMM120408-57**		●	●								0.031	0.500	0.187	0.203
		CNMM 433-57	**CNMM120412-57**			●								0.047	0.500	0.187	0.203
		CNMM 643-57	**CNMM190612-57**			●								0.047	0.750	0.250	0.312
		CNMM 644-57	**CNMM190616-57**			●								0.063	0.750	0.250	0.312
	65	**CNMM 433-65**	**CNMM120412-65**		●	●								0.047	0.500	0.187	0.203
		**CNMM 544-65**	**CNMM160616-65**		●									0.063	0.625	0.250	0.250

● : Line up

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

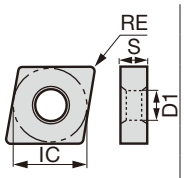
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

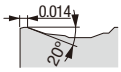
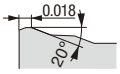
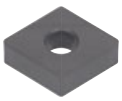
CN



Rhombic, 80° with hole

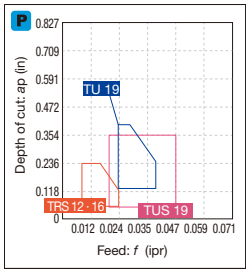
P	Steel	●	●ⓒ	●ⓒ✠	✠								●ⓒ			●					
M	Stainless		●ⓒ													●					
K	Cast iron	●ⓒ	●ⓒ			●	●ⓒ	●	ⓒ	✠			●ⓒ			●			●ⓒ		
N	Non-ferrous															●					
S	Superalloy																				
H	Hard material																				

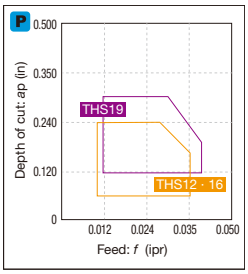


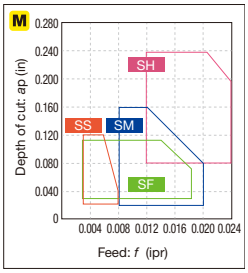
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T505	T515	T5105	T5115	T5125	Cermet NS520	Uncoated TH10	Ceramic FX105	Dimension (in) RE	IC	S	D1
Medium to heavy cutting (single sided)	TU	CNMM 643 TU	CNMM190612-TU			●	●									0.047	0.750	0.250	0.312
		CNMM 644 TU	CNMM190616-TU			●	●									0.063	0.750	0.250	0.312
		CNMM 646 TU	CNMM190624-TU		●	●	●									0.094	0.750	0.250	0.312
		CNMM 866 TU	CNMM250924-TU			●	●									0.094	1.000	0.375	0.359
																			
	TUS	CNMM 642 TUS	CNMM190608-TUS		●	●										0.031	0.750	0.250	0.312
		CNMM 643 TUS	CNMM190612-TUS		●	●	●									0.047	0.750	0.250	0.312
		CNMM 644 TUS	CNMM190616-TUS		●	●	●									0.063	0.750	0.250	0.312
		CNMM 646 TUS	CNMM190624-TUS		●	●	●									0.094	0.750	0.250	0.312
		CNMM 648 TUS	CNMM190632-TUS		●	●										0.125	0.750	0.250	0.312
		CNMM 864 TUS	CNMM250916-TUS		●	●	●									0.063	1.000	0.375	0.359
		CNMM 866 TUS	CNMM250924-TUS		●	●	●									0.094	1.000	0.375	0.359
		CNMM 868 TUS	CNMM250932-TUS		●	●										0.125	1.000	0.375	0.359
Finishing to medium cutting	-	CNMA 331E	CNMA090404E						●							0.016	0.375	0.187	0.150
		CNMA 332E	CNMA090408E						●							0.031	0.375	0.187	0.150
		CNMA 333E	CNMA090412E						●							0.047	0.375	0.187	0.150
		CNMA 334E	CNMA090416E						●							0.063	0.375	0.187	0.150
		CNMA 431	CNMA120404							●	●	●		●		0.016	0.500	0.187	0.203
		CNMA 432	CNMA120408	●				●	●	●	●	●	●	●	●	0.031	0.500	0.187	0.203
		CNMA 433	CNMA120412	●				●	●	●	●	●		●	●	0.047	0.500	0.187	0.203
		CNMA 434	CNMA120416	●						●	●	●		●	●	0.063	0.500	0.187	0.203
		CNMA 542	CNMA160608							●		●				0.031	0.625	0.250	0.250
		CNMA 543	CNMA160612						●	●	●	●				0.047	0.625	0.250	0.250
		CNMA 544	CNMA160616						●							0.063	0.625	0.250	0.250
		CNMA 643	CNMA190612						●		●	●				0.047	0.750	0.250	0.312
		CNMA 644	CNMA190616						●			●				0.063	0.750	0.250	0.312

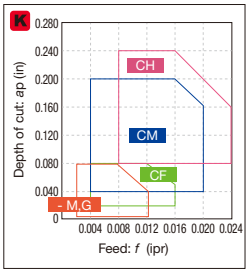
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

Insert NEGATIVE TYPE

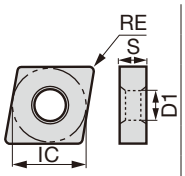
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

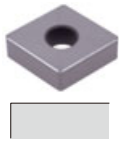
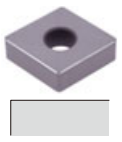
CN



Rhombic, 80° with hole

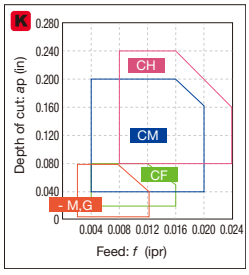
P	Steel	●ɔ					●	●ɔ	●ɔ															
M	Stainless																							
K	Cast iron	●ɔ					●	●ɔ	●ɔ															
N	Non-ferrous																							
S	Superalloy																							
H	Hard material									●ɔ	●ɔ	●ɔ												



Application	Chipbreaker	Designation Inch	Designation Metric	Cermet NS520	Ceramic TZ120	Ceramic FX105	Ceramic CX710	Ceramic LX10	Ceramic LX11	Ceramic LX21	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**Wiper**	**CNMA 432 W**	**CNMA120408W**			●					0.031	0.500	0.187	0.203
		CNMA 433 W	CNMA120412W			●					0.047	0.500	0.187	0.203
		CNMA 434 W	CNMA120416W			●					0.063	0.500	0.187	0.203
	-	**CNGA 431**	**CNGA120404**			●		●	▲	●	0.016	0.500	0.187	0.203
		CNGA 432	CNGA120408	●	●	●	●	●	▲	●	0.031	0.500	0.187	0.203
		CNGA 433	CNGA120412			●		●	▲	●	0.047	0.500	0.187	0.203
		CNGA 434	CNGA120416			●		●	▲		0.063	0.500	0.187	0.203
		CNGA 435	CNGA120420					●	▲		0.078	0.500	0.187	0.203

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C019 -
J-Series toolholder → G036
Internal toolholder → D027 -
TungCap → K008 -

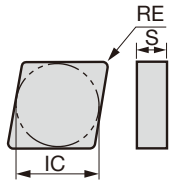
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° without hole

P	Steel	
M	Stainless	
K	Cast iron	●ⓒ ●ⓒ
N	Non-ferrous	
S	Superalloy	● ●
H	Hard material	●ⓒ ●ⓒ ●ⓒ

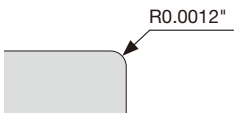


Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	LX10	LX11	LX21	CX710	TS200	TS300	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	**CNGD 453**	**CNGD120712**	●							0.047	0.500	0.313	-
		CNGD 45**4**	CNGD120**716**	●							0.063	0.500	0.313	-
	-	**CNMN 432**	**CNMN120408**	●							0.031	0.500	0.187	-
		CNMN 43**3**	CNMN1204**12**	●							0.047	0.500	0.187	-
		CNMN 43**4**	CNMN1204**16**	●							0.063	0.500	0.187	-
	-	**CNGN 432-E**	**CNGN120408-E**							●	0.031	0.500	0.187	-
		CNGN 43**3-E**	CNGN1204**12-E**							●	0.047	0.500	0.187	-
		CNGN 43**3-T1**	CNGN1204**12-T1**						●		0.047	0.500	0.187	-
		CNGN 43**1**	CNGN1204**04**		●	▲					0.016	0.500	0.187	-
		CNGN 43**2**	CNGN1204**08**	●	●	▲					0.031	0.500	0.187	-
		CNGN 43**3**	CNGN1204**12**	●	●	▲					0.047	0.500	0.187	-
		CNGN 43**4**	CNGN1204**16**	●	●	▲	●				0.063	0.500	0.187	-
		CNGN 43**5**	CNGN1204**20**	●							0.078	0.500	0.187	-
		CNGN 452-E	**CNGN120708-E**							●	0.031	0.500	0.313	-
		CNGN 45**3-E**	CNGN1207**12-E**						●	●	0.047	0.500	0.313	-
		CNGN 45**4-T1**	CNGN1207**16-T1**						●		0.063	0.500	0.313	
		CNGN 45**2**	CNGN1207**08**	●	●	▲					0.031	0.500	0.313	-
		CNGN 45**3**	CNGN1207**12**	●	●	▲					0.047	0.500	0.313	-
		CNGN 45**4**	CNGN1207**16**	●	●	▲					0.063	0.500	0.313	-
		CNGN 45**5**	CNGN1207**20**			▲					0.078	0.500	0.313	-

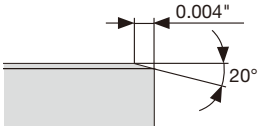
● : Line up
▲ : To be discontinued

Edge prep

E: Low cutting force



T1: Strong cutting edge



Reference pages: CNGD...: External toolholder → C027

Insert NEGATIVE TYPE

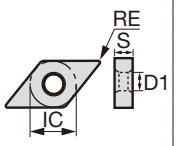
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T6215	T515	AH8015	AH6225	AH120	GT9530	AT9530	NS9530	TH10
P	Steel	●	●◐	◐✣	✣	◐			◐✣	●◐	●◐	●◐		●
M	Stainless		●◐			●		◐	●◐	●◐				●
K	Cast iron	●◐	●◐				●◐			●◐	●◐	●◐	●◐	●
N	Non-ferrous													●
S	Superalloy							◐		●◐				
H	Hard material													



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	TF	DNMG 330.5E TF	DNMG110402E-TF	0.008	0.375	0.187	0.150
		DNMG 331E TF	DNMG110404E-TF	0.016	0.375	0.187	0.150
		DNMG 332E TF	DNMG110408E-TF	0.031	0.375	0.187	0.150
		DNMG 430.5 TF	DNMG150402-TF	0.008	0.500	0.187	0.203
		DNMG 431 TF	DNMG150404-TF	0.016	0.500	0.187	0.203
		DNMG 432 TF	DNMG150408-TF	0.031	0.500	0.187	0.203
	TSF	DNMG 330.5E TSF	DNMG110402E-TSF	0.008	0.375	0.187	0.150
		DNMG 331E TSF	DNMG110404E-TSF	0.016	0.375	0.187	0.150
		DNMG 332E TSF	DNMG110408E-TSF	0.031	0.375	0.187	0.150
		DNMG 333E TSF	DNMG110412E-TSF	0.047	0.375	0.187	0.150
		DNMG 430.5 TSF	DNMG150402-TSF	0.008	0.500	0.187	0.203
		DNMG 431 TSF	DNMG150404-TSF	0.016	0.500	0.187	0.203
		DNMG 432 TSF	DNMG150408-TSF	0.031	0.500	0.187	0.203
		DNMG 433 TSF	DNMG150412-TSF	0.047	0.500	0.187	0.203
		DNMG 440.5 TSF	DNMG150602-TSF	0.008	0.500	0.250	0.203
		DNMG 441 TSF	DNMG150604-TSF	0.016	0.500	0.250	0.203
		DNMG 442 TSF	DNMG150608-TSF	0.031	0.500	0.250	0.203
		DNMG 443 TSF	DNMG150612-TSF	0.047	0.500	0.250	0.203
	PS	DNMG 330.5E PS	DNMG110402E-PS	0.008	0.375	0.187	0.150
		DNMG 331E PS	DNMG110404E-PS	0.016	0.375	0.187	0.150
		DNMG 332E PS	DNMG110408E-PS	0.031	0.375	0.187	0.150
		DNMG 430.5 PS	DNMG150402-PS	0.008	0.500	0.187	0.203
		DNMG 431 PS	DNMG150404-PS	0.016	0.500	0.187	0.203
		DNMG 432 PS	DNMG150408-PS	0.031	0.500	0.187	0.203
		DNMG 433 PS	DNMG150412-PS	0.047	0.500	0.187	0.203
		DNMG 440.5 PS	DNMG150602-PS	0.008	0.500	0.250	0.203
		DNMG 441 PS	DNMG150604-PS	0.016	0.500	0.250	0.203
		DNMG 442 PS	DNMG150608-PS	0.031	0.500	0.250	0.203
		DNMG 443 PS	DNMG150612-PS	0.047	0.500	0.250	0.203
Finishing for mild steel	ZF	DNMG 330.5E ZF	DNMG110402E-ZF	0.008	0.375	0.187	0.150
		DNMG 331E ZF	DNMG110404E-ZF	0.016	0.375	0.187	0.150
		DNMG 332E ZF	DNMG110408E-ZF	0.031	0.375	0.187	0.150
		DNMG 430.5 ZF	DNMG150402-ZF	0.008	0.500	0.187	0.203
		DNMG 431 ZF	DNMG150404-ZF	0.016	0.500	0.187	0.203
		DNMG 432 ZF	DNMG150408-ZF	0.031	0.500	0.187	0.203
		DNMG 433 ZF	DNMG150412-ZF	0.047	0.500	0.187	0.203
		DNMG 440.5 ZF	DNMG150602-ZF	0.008	0.500	0.187	0.203
		DNMG 441 ZF	DNMG150604-ZF	0.016	0.500	0.250	0.203
		DNMG 442 ZF	DNMG150608-ZF	0.031	0.500	0.250	0.203
		DNMG 443 ZF	DNMG150612-ZF	0.047	0.500	0.250	0.203
Finishing	AS	DNMG 431 AS	DNMG150404-AS	0.016	0.500	0.187	0.203
		DNMG 432 AS	DNMG150408-AS	0.031	0.500	0.187	0.203
		DNMG 433 AS	DNMG150412-AS	0.047	0.500	0.187	0.203
		DNMG 441 AS	DNMG150604-AS	0.016	0.500	0.250	0.203
		DNMG 442 AS	DNMG150608-AS	0.031	0.500	0.250	0.203
		DNMG 443 AS	DNMG150612-AS	0.047	0.500	0.250	0.203
	NS	DNMG 431 NS	DNMG150404-NS	0.016	0.500	0.187	0.203
		DNMG 432 NS	DNMG150408-NS	0.031	0.500	0.187	0.203

● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	● ●◐ ◐✣ ✣ ◐ ✣ ✣ ●◐ ●◐
M	Stainless	●◐ ● ◐ ●◐ ✣ ●◐ ●◐
K	Cast iron	●◐ ●◐ ●◐

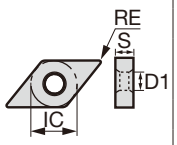
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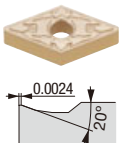
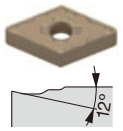
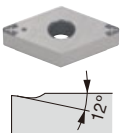
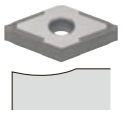
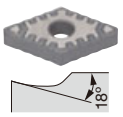
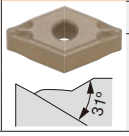
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9215	T5105	T5115	GH330	GH110	GT9530	GT720	NS9530	NS520	TH10
P	Steel	◐			◐	●	◐	◐	◐	◐	●
M	Stainless	◐			◐	●					●
K	Cast iron	◐	●	◐	◐	●	◐	◐	◐	◐	●
N	Non-ferrous										●
S	Superalloy					●					
H	Hard material										

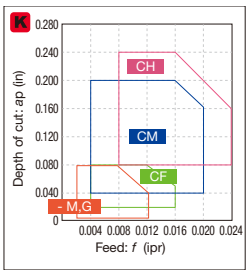


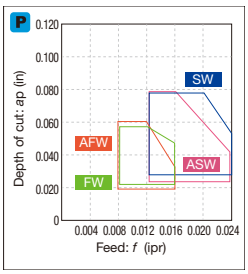
Application	Chipbreaker	Designation Inch	Designation Metric	Coated					Coated cermet		Cermet		Uncoated		Dimension (in)			
				T9215	T5105	T5115	GH330	GH110	GT9530	GT720	NS9530	NS520	TH10		RE	IC	S	D1
Finishing	CF	DNMG 431 CF	DNMG150404-CF		●	●									0.016	0.500	0.187	0.203
		DNMG 432 CF	DNMG150408-CF		●	●									0.031	0.500	0.187	0.203
		DNMG 433 CF	DNMG150412-CF		●	●									0.047	0.500	0.187	0.203
		DNMG 441 CF	DNMG150604-CF		●	●									0.016	0.500	0.250	0.203
		DNMG 442 CF	DNMG150608-CF			●									0.031	0.500	0.250	0.203
Finishing (wiper)	FW	DNMG 331E FW	DNMG110404E-FW	●											0.016	0.375	0.187	0.150
		DNMG 332E FW	DNMG110408E-FW	●											0.031	0.375	0.187	0.150
		DNMG 431 FW	DNMG150404-FW	●											0.016	0.500	0.187	0.203
		DNMG 432 FW	DNMG150408-FW	●											0.031	0.500	0.187	0.203
		DNMG 441 FW	DNMG150604-FW	●											0.016	0.500	0.250	0.203
		DNMG 442 FW	DNMG150608-FW	●											0.031	0.500	0.250	0.203
	*Wiper																	
Finishing	01	DNGG 330.5-01	DNGG110402-01								●				0.008	0.375	0.187	0.150
		DNGG 331-01	DNGG110404-01								●	●			0.016	0.375	0.187	0.150
		DNGG 332-01	DNGG110408-01							●	●				0.031	0.375	0.187	0.150
		DNGG 430.5-01	DNGG150402-01								●	●	●		0.008	0.500	0.187	0.203
		DNGG 431-01	DNGG150404-01					●			●	●	●		0.016	0.500	0.187	0.203
		DNGG 432-01	DNGG150408-01					●			●	●	●		0.031	0.500	0.187	0.203
	11	DNMG 331-11	DNMG110404-11								●				0.016	0.375	0.187	0.150
		DNMG 332-11	DNMG110408-11								●				0.031	0.375	0.187	0.150
		DNMG 431-11	DNMG150404-11				●				●		●		0.016	0.500	0.187	0.203
		DNMG 432-11	DNMG150408-11	●							●				0.031	0.500	0.187	0.203
Finishing for mild steel	17	DNMG 431-17	DNMG150404-17								●				0.016	0.500	0.187	0.203
		DNMG 432-17	DNMG150408-17								●				0.031	0.500	0.187	0.203
Boring (double sided)	CB	DNMG 331 CB	DNMG110404-CB						●		●				0.016	0.375	0.187	0.150
		DNMG 332 CB	DNMG110408-CB	●					●		●				0.031	0.375	0.187	0.150

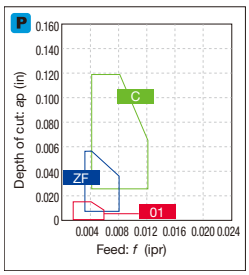
* Please see L011 - L015 about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Chip control range







*-M,G: Without chipbreaker

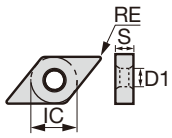
Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

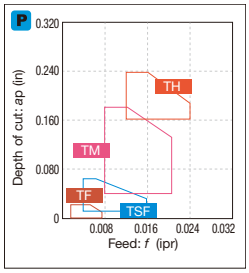
P	Steel	● ●◐ ◐✣ ✣ ◐ ◐✣ ✣ ◐ ● ●◐
M	Stainless	●◐ ● ◐ ◐✣ ✣ ◐ ● ●◐
K	Cast iron	●◐ ●◐ ✣ ●◐ ◐ ● ●◐ ●◐ ●◐
N	Non-ferrous	
S	Superalloy	● ◐ ● ● ●◐
H	Hard material	

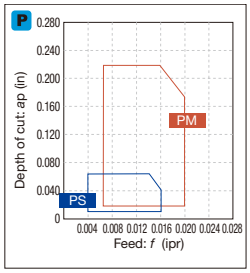


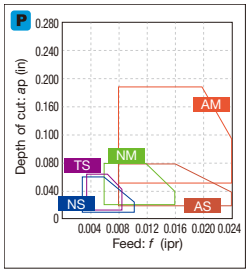
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T5125	T515	AH8005	AH8015	AH6225	AH6235	AH725	AH110	AH120	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	TM	DNMG 331E TM	DNMG110404E-TM		●	●		●				●	●				●			0.016	0.375	0.187	0.150
		DNMG 332E TM	DNMG110408E-TM		●	●		●				●	●				●			0.031	0.375	0.187	0.150
		DNMG 333E TM	DNMG110412E-TM		●	●		●				●	●				●			0.047	0.375	0.187	0.150
		DNMG 331 TM	DNMG110404-TM		●	●	●													0.016	0.375	0.187	0.150
		DNMG 332 TM	DNMG110408-TM		●	●	●													0.031	0.375	0.187	0.150
		DNMG 431 TM	DNMG150404-TM	●	●	●	●	●		●		●	●	●		●	●			0.016	0.500	0.187	0.203
		DNMG 432 TM	DNMG150408-TM	●	●	●	●	●		●		●	●	●	●	●	●			0.031	0.500	0.187	0.203
		DNMG 433 TM	DNMG150412-TM	●	●	●	●	●	●	●		●	●	●		●	●			0.047	0.500	0.187	0.203
		DNMG 434 TM	DNMG150416-TM		●	●		●		●		●	●	●			●			0.063	0.500	0.187	0.203
		DNMG 441 TM	DNMG150604-TM	●	●	●	●	●				●	●				●			0.016	0.500	0.250	0.203
		DNMG 442 TM	DNMG150608-TM	●	●	●	●	●				●	●				●			0.031	0.500	0.250	0.203
		DNMG 443 TM	DNMG150612-TM	●	●	●	●	●				●	●				●			0.047	0.500	0.250	0.203
		DNMG 444 TM	DNMG150616-TM	●	●	●	●	●			●		●							0.063	0.500	0.250	0.203
	PM	DNMG 331E PM	DNMG110404E-PM		●	●		●				●	●							0.016	0.375	0.187	0.150
		DNMG 332E PM	DNMG110408E-PM		●	●		●				●	●							0.031	0.375	0.187	0.150
		DNMG 333E PM	DNMG110412E-PM		●	●		●				●	●							0.047	0.375	0.187	0.150
		DNMG 431 PM	DNMG150404-PM		●	●		●				●	●							0.016	0.500	0.187	0.203
		DNMG 432 PM	DNMG150408-PM		●	●		●				●	●							0.031	0.500	0.187	0.203
		DNMG 433 PM	DNMG150412-PM		●	●		●				●	●							0.047	0.500	0.187	0.203
		DNMG 434 PM	DNMG150416-PM		●	●		●				●	●							0.063	0.500	0.187	0.203
		DNMG 441 PM	DNMG150604-PM		●	●		●				●	●							0.016	0.500	0.250	0.203
		DNMG 442 PM	DNMG150608-PM		●	●		●				●	●							0.031	0.500	0.250	0.203
		DNMG 443 PM	DNMG150612-PM		●	●		●				●	●							0.047	0.500	0.250	0.203
		DNMG 444 PM	DNMG150616-PM		●	●		●				●	●							0.063	0.500	0.250	0.203
Medium cutting for mild steel	ZM	DNMG 331E ZM	DNMG110404E-ZM		●	●		●				●	●							0.016	0.375	0.187	0.150
		DNMG 332E ZM	DNMG110408E-ZM		●	●		●				●	●							0.031	0.375	0.187	0.150
		DNMG 333E ZM	DNMG110412E-ZM		●	●		●				●	●							0.047	0.375	0.187	0.150
		DNMG 431 ZM	DNMG150404-ZM		●	●		●				●	●							0.016	0.500	0.187	0.203
		DNMG 432 ZM	DNMG150408-ZM		●	●	●	●				●	●					●	●	0.031	0.500	0.187	0.203
		DNMG 433 ZM	DNMG150412-ZM		●	●	●	●				●	●							0.047	0.500	0.187	0.203
		DNMG 434 ZM	DNMG150416-ZM		●	●		●				●	●							0.063	0.500	0.187	0.203
		DNMG 441 ZM	DNMG150604-ZM		●	●		●				●	●							0.016	0.500	0.250	0.203
		DNMG 442 ZM	DNMG150608-ZM		●	●	●	●				●	●							0.031	0.500	0.250	0.203
		DNMG 443 ZM	DNMG150612-ZM		●	●		●				●	●							0.047	0.500	0.250	0.203
		DNMG 444 ZM	DNMG150616-ZM		●	●		●				●	●							0.063	0.500	0.250	0.203
Medium cutting	AM	DNMG 432 AM	DNMG150408-AM		●	●														0.031	0.500	0.187	0.203
		DNMG 433 AM	DNMG150412-AM		●	●														0.047	0.500	0.187	0.203
		DNMG 434 AM	DNMG150416-AM		●	●														0.063	0.500	0.187	0.203
		DNMG 442 AM	DNMG150608-AM		●	●														0.031	0.500	0.250	0.203
		DNMG 443 AM	DNMG150612-AM		●	●														0.047	0.500	0.250	0.203
		DNMG 444 AM	DNMG150616-AM		●	●														0.063	0.500	0.250	0.203

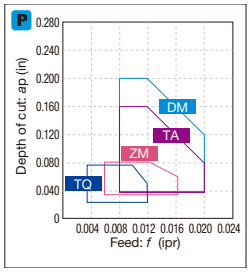
● : Line up

Chip control range









Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

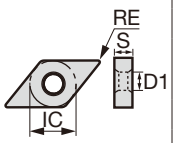
Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	● ●ⓒ ⓒ ✠ ✠ ⓒ ✠✠ ✠ ● ●ⓒ ⓒ ●
M	Stainless	●ⓒ ● ●ⓒ ✠ ● ●ⓒ ●
K	Cast iron	●ⓒ ⓒ ● ●ⓒ ● ⓒ ✠ ● ●ⓒ ⓒ ●ⓒ ⓒ ●
N	Non-ferrous	●
S	Superalloy	● ⓒ ● ●ⓒ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	AH8005	AH8015	AH6225	AH6235	AH110	AH120	Coated cermet GT9530	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium cutting	NM	DNMG 432 NM	DNMG150408-NM		●	●	●													●		●		0.031	0.500	0.187	0.203
		DNMG 433 NM	DNMG150412-NM	●	●	●	●																	0.047	0.500	0.187	0.203
		DNMG 442 NM	DNMG150608-NM																	●		●		0.031	0.500	0.250	0.203
	DM	DNMG 431 DM	DNMG150404-DM		●	●		●							●	●								0.016	0.500	0.187	0.203
		DNMG 432 DM	DNMG150408-DM		●	●	●	●							●	●								0.031	0.500	0.187	0.203
		DNMG 433 DM	DNMG150412-DM	●	●	●	●	●							●	●								0.047	0.500	0.187	0.203
		DNMG 434 DM	DNMG150416-DM		●	●		●							●	●								0.063	0.500	0.187	0.203
		DNMG 441 DM	DNMG150604-DM		●	●		●							●	●								0.016	0.500	0.250	0.203
		DNMG 442 DM	DNMG150608-DM		●	●	●	●							●	●								0.031	0.500	0.250	0.203
		DNMG 443 DM	DNMG150612-DM	●	●	●	●	●							●	●								0.047	0.500	0.250	0.203
		DNMG 444 DM	DNMG150616-DM	●	●	●		●							●	●								0.063	0.500	0.250	0.203
Finishing to medium cutting	All-round	DNMG 331	DNMG110404		●	●					●	●	●							●		●		0.016	0.375	0.187	0.150
		DNMG 332	DNMG110408	●	●	●	●				●	●	●							●		●		0.031	0.375	0.187	0.150
		DNMG 431	DNMG150404		●	●	●				●	●	●					●	●	●		●	●	0.016	0.500	0.187	0.203
		DNMG 432	DNMG150408	●	●	●	●		●	●	●	●	●					●	●	●		●	●	0.031	0.500	0.187	0.203
		DNMG 433	DNMG150412	●	●	●	●		●	●	●	●	●					●	●			●	●	0.047	0.500	0.187	0.203
		DNMG 434	DNMG150416		●	●					●	●	●											0.063	0.500	0.187	0.203
		DNMG 441	DNMG150604		●	●					●	●											●	0.016	0.500	0.250	0.203
		DNMG 442	DNMG150608	●	●	●	●		●	●	●	●	●										●	0.031	0.500	0.250	0.203
		DNMG 443	DNMG150612	●	●	●	●		●	●		●	●										●	0.047	0.500	0.250	0.203
		DNMG 444	DNMG150616		●	●																		0.063	0.500	0.250	0.203
Medium cutting	SM	DNMG 331E SM	DNMG110404E-SM					●								●								0.016	0.375	0.187	0.150
		DNMG 332E SM	DNMG110408E-SM					●								●								0.031	0.375	0.187	0.150
		DNMG 431 SM	DNMG150404-SM					●								●	●							0.016	0.500	0.187	0.203
		DNMG 432 SM	DNMG150408-SM					●								●	●							0.031	0.500	0.187	0.203
		DNMG 433 SM	DNMG150412-SM					●								●	●							0.047	0.500	0.187	0.203
		DNMG 441 SM	DNMG150604-SM					●								●	●							0.016	0.500	0.250	0.203
		DNMG 442 SM	DNMG150608-SM					●								●	●							0.031	0.500	0.250	0.203
		DNMG 443 SM	DNMG150612-SM					●								●	●							0.047	0.500	0.250	0.203
	SDM	DNMG 431 SDM	DNMG150404-SDM					●						●	●	●	●							0.016	0.500	0.187	0.203
		DNMG 432 SDM	DNMG150408-SDM					●						●	●	●	●							0.031	0.500	0.187	0.203
		DNMG 433 SDM	DNMG150412-SDM					●								●	●							0.047	0.500	0.187	0.203
		DNMG 441 SDM	DNMG150604-SDM					●								●	●							0.016	0.500	0.250	0.203
		DNMG 442 SDM	DNMG150608-SDM					●						●	●	●	●							0.031	0.500	0.250	0.203
		DNMG 443 SDM	DNMG150612-SDM					●						●	●	●	●							0.047	0.500	0.250	0.203
	HRM	DNMG 431 HRM	DNMG150404-HRM											●	●									0.016	0.500	0.250	0.203
		DNMG 432 HRM	DNMG150408-HRM											●	●									0.031	0.500	0.187	0.203
		DNMG 433 HRM	DNMG150412-HRM											●	●									0.047	0.500	0.187	0.203
		DNMG 441 HRM	DNMG150604-HRM											●	●									0.016	0.500	0.187	0.203
		DNMG 442 HRM	DNMG150608-HRM											●	●									0.031	0.500	0.250	0.203
		DNMG 443 HRM	DNMG150612-HRM											●	●									0.047	0.500	0.250	0.203

● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

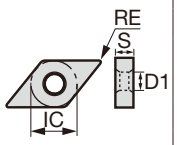
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

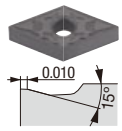
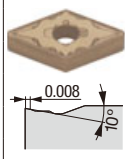
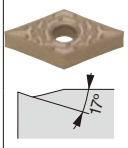
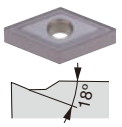
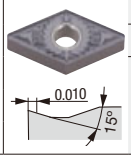
DN



Rhombic, 55° with hole

P	Steel	● ◐ ◐ ✣ ◐
M	Stainless	◐ ● ◐
K	Cast iron	◐ ◐ ● ◐ ● ◐ ✣ ◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloy	◐ ◐
H	Hard material	

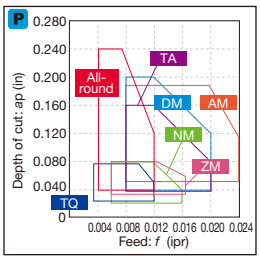


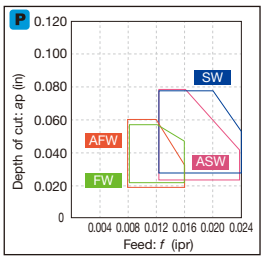
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T6215	T505	T515	T5105	T5115	T5125	AH905	AH120	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	**CM**	DNMG 431 CM	DNMG150404-CM	●	●		●	●	●	●	●	●						0.016	0.500	0.187	0.203
		DNMG 432 CM	DNMG150408-CM	●	●		●	●	●	●	●	●						0.031	0.500	0.187	0.203
		DNMG 433 CM	DNMG150412-CM	●	●		●	●	●	●	●	●						0.047	0.500	0.187	0.203
		DNMG 441 CM	DNMG150604-CM	●	●		●	●	●		●	●						0.016	0.500	0.250	0.203
		DNMG 442 CM	DNMG150608-CM	●	●		●	●	●	●	●	●						0.031	0.500	0.250	0.203
		DNMG 443 CM	DNMG150612-CM	●	●		●	●	●	●	●	●						0.047	0.500	0.250	0.203
Finishing (wiper)	**SW**	DNMG 332E SW	DNMG110408E-SW		●													0.031	0.375	0.187	0.150
		DNMG 333E SW	DNMG110412E-SW		●													0.047	0.375	0.187	0.150
		DNMG 432 SW	DNMG150408-SW		●													0.031	0.500	0.187	0.203
		DNMG 433 SW	DNMG150412-SW		●													0.047	0.500	0.187	0.203
		DNMG 442 SW	DNMG150608-SW		●													0.031	0.500	0.250	0.203
		DNMG 443 SW	DNMG150612-SW		●													0.047	0.500	0.250	0.203
		*Wiper																			
Medium cutting	**TQ**	DNMG 431 TQ	DNMG150404-TQ		●	●									●	●	●	0.016	0.500	0.187	0.203
		DNMG 432 TQ	DNMG150408-TQ		●	●									●	●	●	0.031	0.500	0.187	0.203
Medium cutting	**SA**	DNMG 431 SA	DNMG150404-SA											●				0.016	0.500	0.187	0.203
		DNMG 432 SA	DNMG150408-SA											●				0.031	0.500	0.187	0.203
		DNMG 441 SA	DNMG150604-SA											●				0.016	0.500	0.250	0.203
		DNMG 442 SA	DNMG150608-SA											●				0.031	0.500	0.250	0.203
	HMM	DNMG 431 HMM	DNMG150404-HMM										●					0.016	0.500	0.187	0.203
		DNMG 432 HMM	DNMG150408-HMM										●					0.031	0.500	0.187	0.203
		DNMG 433 HMM	DNMG150412-HMM										●					0.047	0.500	0.187	0.203

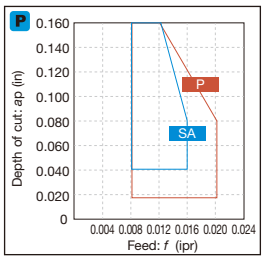
* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

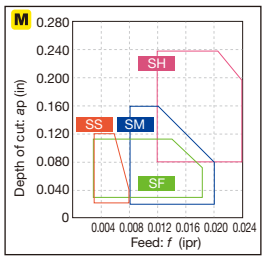
● : Line up

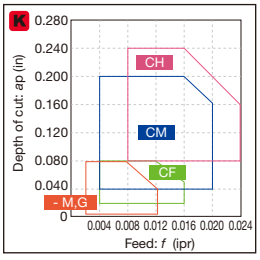
Chip control range

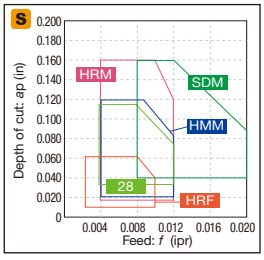












Reference pages: External toolholder → C036 -
Internal toolholder → D042 -
J-Series toolholder → G052
TungCap → K011 -

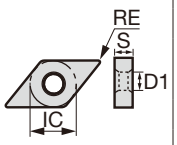
Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9215	T9225	T9235	AH8005	AH8015	AH6225	AH6235	AH110	AH120	GH110	GH330	GT9530	NS9530	TH10	KS05F
P	Steel	●ⓒ	●ⓒ✠	✠			ⓒ✠	✠	●	●ⓒ	●	●ⓒ	●ⓒ		●ⓒ		●	
M	Stainless	●ⓒ			●	ⓒ	●ⓒ	✠	●	●ⓒ	●	●ⓒ					●	
K	Cast iron	●ⓒ							●	●ⓒ	●	●ⓒ	●ⓒ		●ⓒ		●	●
N	Non-ferrous																●	●
S	Superalloy				●	ⓒ			●	●ⓒ	●							●
H	Hard material																	



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Medium cutting	**P**	**DNGG 430.5 R-P**	**DNGG150402R-P**	0.008	0.500	0.187	0.203
		DNGG 430.5 L-P	DNGG150402L-P	0.008	0.500	0.187	0.203
		DNGG 431 R-P	DNGG150404R-P	0.016	0.500	0.187	0.203
		DNGG 431 L-P	DNGG150404L-P	0.016	0.500	0.187	0.203
		DNGG 432 R-P	DNGG150408R-P	0.031	0.500	0.187	0.203
		DNGG 432 L-P	DNGG150408L-P	0.031	0.500	0.187	0.203
	S	**DNMG 431 R-S**	**DNMG150404R-S**	0.016	0.500	0.187	0.203
		DNMG 431 L-S	DNMG150404L-S	0.016	0.500	0.187	0.203
		DNMG 432 R-S	DNMG150408R-S	0.031	0.500	0.187	0.203
		DNMG 432 L-S	DNMG150408L-S	0.031	0.500	0.187	0.203
		DNMG 441 R-S	**DNMG150604R-S**	0.016	0.500	0.250	0.203
		DNMG 441 L-S	DNMG150604L-S	0.016	0.500	0.250	0.203
		DNMG 442 R-S	DNMG150608R-S	0.031	0.500	0.250	0.203
		DNMG 442 L-S	DNMG150608L-S	0.031	0.500	0.250	0.203
	27	**DNMG 431-27**	**DNMG150404-27**	0.016	0.500	0.187	0.203
		DNMG 432-27	DNMG150408-27	0.031	0.500	0.187	0.203
		DNMG 433-27	DNMG150412-27	0.047	0.500	0.187	0.203
	28	**DNMG 431-28**	**DNMG150404-28**	0.016	0.500	0.187	0.203
		DNMG 432-28	DNMG150408-28	0.031	0.500	0.187	0.203
		DNMG 441-28	**DNMG150604-28**	0.016	0.500	0.250	0.203
		DNMG 442-28	DNMG150608-28	0.031	0.500	0.250	0.203
	33	**DNMG 431-33**	**DNMG150404-33**	0.016	0.500	0.187	0.203
		DNMG 432-33	DNMG150408-33	0.031	0.500	0.187	0.203
	37	**DNMG 431-37**	**DNMG150404-37**	0.016	0.500	0.187	0.203
		DNMG 432-37	DNMG150408-37	0.031	0.500	0.187	0.203
		DNMG 442-37	**DNMG150608-37**	0.031	0.500	0.250	0.203
	38	**DNMG 433-38**	**DNMG150412-38**	0.047	0.500	0.187	0.203
	Parallel	**DNGG 431 R**	**DNGG150404R**	0.016	0.500	0.187	0.203
		DNGG 431 L	DNGG150404L	0.016	0.500	0.187	0.203
		DNGG 432 R	DNGG150408R	0.031	0.500	0.187	0.203
		DNGG 432 L	DNGG150408L	0.031	0.500	0.187	0.203

● : Line up

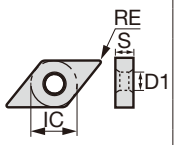
Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

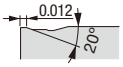
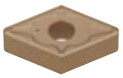
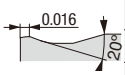
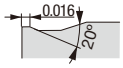
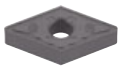
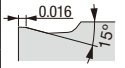
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

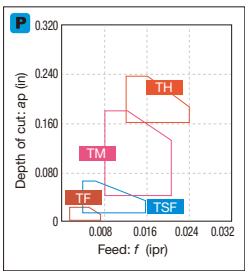
P	Steel	●ⓒ	ⓒ✠	✠							ⓒ✠	✠	●ⓒ	●ⓒ		●ⓒ		●		
M	Stainless	●ⓒ								ⓒ	●ⓒ	✠	●ⓒ					●		
K	Cast iron	●ⓒ			●	●ⓒ	●	ⓒ	✠				●ⓒ	●ⓒ		●ⓒ		●		
N	Non-ferrous																	●		
S	Superalloy									ⓒ			●ⓒ							
H	Hard material																			

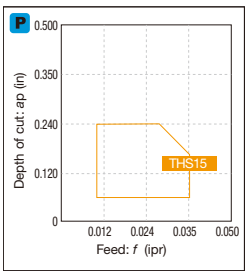


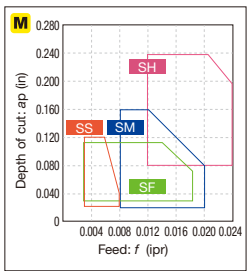
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T505	T515	T5105	T5115	T5125	AH8015	AH6225	AH6235	AH120	Coated cermet GT720	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium to heavy cutting	**TH**	**DNMG 432 TH**	**DNMG150408-TH**	●	●	●		●				●			●				0.031	0.500	0.187	0.203
		DNMG 433 TH	DNMG150412-TH	●	●	●		●				●			●				0.047	0.500	0.187	0.203
		DNMG 434 TH	DNMG150416-TH	●	●														0.063	0.500	0.187	0.203
		**DNMG 442 TH**	**DNMG150608-TH**	●	●	●									●				0.031	0.500	0.250	0.203
		DNMG 443 TH	DNMG150612-TH	●	●	●									●				0.047	0.500	0.250	0.203
		DNMG 444 TH	DNMG150616-TH	●	●	●													0.063	0.500	0.250	0.203
	THS	**DNMG 432 THS**	**DNMG150408-THS**	●	●	●													0.031	0.500	0.187	0.203
		DNMG 433 THS	DNMG150412-THS	●	●	●													0.047	0.500	0.187	0.203
		DNMG 434 THS	DNMG150416-THS	●	●														0.063	0.500	0.187	0.203
		**DNMG 442 THS**	**DNMG150608-THS**	●	●	●													0.031	0.500	0.250	0.203
		DNMG 443 THS	DNMG150612-THS	●	●	●													0.047	0.500	0.250	0.203
		DNMG 444 THS	DNMG150616-THS	●	●														0.063	0.500	0.250	0.203
	SH	**DNMG 432 SH**	**DNMG150408-SH**										●	●					0.031	0.500	0.187	0.203
		DNMG 433 SH	DNMG150412-SH										●	●					0.047	0.500	0.187	0.203
		DNMG 434 SH	DNMG150416-SH										●	●					0.063	0.500	0.187	0.203
		**DNMG 442 SH**	**DNMG150608-SH**										●	●					0.031	0.500	0.250	0.203
		DNMG 443 SH	DNMG150612-SH										●	●					0.047	0.500	0.250	0.203
	CH	**DNMG 431 CH**	**DNMG150404-CH**							●	●								0.016	0.500	0.187	0.203
		DNMG 432 CH	DNMG150408-CH					●	●	●	●								0.031	0.500	0.187	0.203
		DNMG 433 CH	DNMG150412-CH					●		●	●								0.047	0.500	0.187	0.203
		DNMG 442 CH	DNMG150608-CH							●	●								0.031	0.500	0.250	0.203
		DNMG 443 CH	DNMG150612-CH						●										0.047	0.500	0.250	0.203
Medium to heavy cutting (single side)	**57**	**DNMM 442-57**	**DNMM150608-57**		●														0.031	0.500	0.250	0.203
		DNMM 443-57	DNMM150612-57		●														0.047	0.500	0.250	0.203
Finishing to medium cutting	**-**	**DNMA 331E**	**DNMA110404E**					●											0.016	0.375	0.187	0.150
		DNMA 332E	DNMA110408E					●											0.031	0.375	0.187	0.150
		DNMA 333E	DNMA110412E					●											0.047	0.375	0.187	0.150
		**DNMA 431**	**DNMA150404**				●	●	●	●	●					●	●	●	0.016	0.500	0.187	0.203
		DNMA 432	DNMA150408				●	●	●	●	●							●	0.031	0.500	0.187	0.203
		DNMA 433	DNMA150412						●	●	●								0.047	0.500	0.187	0.203
		DNMA 441	**DNMA150604**				●	●											0.016	0.500	0.250	0.203
		DNMA 442	DNMA150608				●	●	●	●									0.031	0.500	0.250	0.203
		DNMA 443	DNMA150612						●	●	●								0.047	0.500	0.250	0.203

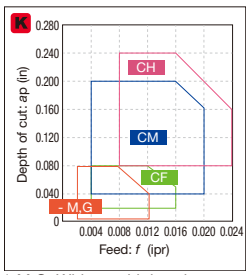
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

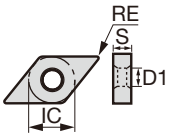
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	◐			●																												
M	Stainless				●																												
K	Cast iron	◐			●				◐																								
N	Non-ferrous				●																												
S	Superalloy																																
H	Hard material										◐	◐	◐																				

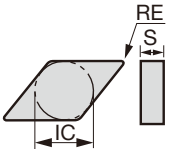


Application	Chipbreaker	Designation Inch	Designation Metric	Cermet NS520	Uncoated TH10	Ceramic FX105	Ceramic LX10	Ceramic LX11	Ceramic LX21	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	DNGA 431	DNGA150404	●	●		●	▲	●	0.016	0.500	0.187	0.203
		DNGA 432	DNGA150408	●	●	●	●	▲	●	0.031	0.500	0.187	0.203
		DNGA 433	DNGA150412			●	●	▲	●	0.047	0.500	0.187	0.203
		DNGA 434	DNGA150416			●		▲		0.063	0.500	0.187	0.203
		DNGA 441	DNGA150604				●	▲		0.016	0.500	0.250	0.203
		DNGA 442	DNGA150608				●	▲	●	0.031	0.500	0.250	0.203
		DNGA 443	DNGA150612				●	▲		0.047	0.500	0.250	0.203
		DNGA 444	DNGA150616				●	▲		0.063	0.500	0.250	0.203
		DNGA 445	DNGA150620				●	▲		0.078	0.500	0.250	0.203

DN

Rhombic, 55° without hole

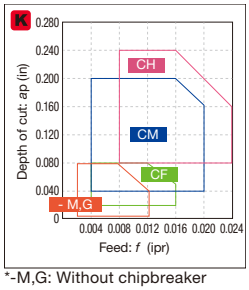
P	Steel																																
M	Stainless																																
K	Cast iron	◐																															
N	Non-ferrous																																
S	Superalloy																																
H	Hard material		◐	◐																													



Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	Ceramic LX10	Ceramic LX11	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	DNGD 452	DNGD150708	●			0.031	0.500	0.313	-
		DNGD 453	DNGD150712	●			0.047	0.500	0.313	-
		DNGD 454	DNGD150716	●			0.063	0.500	0.313	-
	-	DNGN 431	DNGN150404			●	0.016	0.500	0.187	-
		DNGN 432	DNGN150408		●	▲	0.031	0.500	0.187	-
		DNGN 433	DNGN150412	●		▲	0.047	0.500	0.187	-
		DNGN 434	DNGN150416	●			0.063	0.500	0.187	-
		DNGN 452	DNGN150708		●	▲	0.031	0.500	0.313	-
		DNGN 453	DNGN150712		●	▲	0.047	0.500	0.313	-
		DNGN 454	DNGN150716		●	▲	0.063	0.500	0.313	-

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

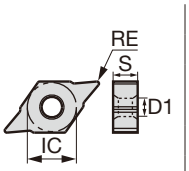
Reference pages: DNGA...: External toolholder → C036 -, Internal toolholder → D042 -
J-Series toolholder → G052, TungCap → K011 -
DNGD...: External toolholder → C042, C044

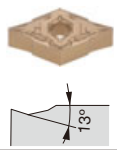
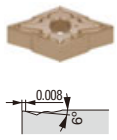
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

FN

Rhombic, 45° with hole

P	Steel	●ɔ ɔ✠ ɔ ✠
M	Stainless	●ɔ ● ɔ ●ɔ
K	Cast iron	●ɔ
N	Non-ferrous	
S	Superalloy	ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8015	AH6225	Dimension (in) RE	IC	S	D1
Finishing	TSF	FNMG 330.5E TSF	FNMG110402E-TSF	●	●	●	●	●	0.008	0.375	0.187	0.150
		FNMG 331E TSF	FNMG110404E-TSF	●	●	●	●	●	0.016	0.375	0.187	0.150
		FNMG 332E TSF	FNMG110408E-TSF	●	●	●	●	●	0.031	0.375	0.187	0.150
		FNMG 333E TSF	FNMG110412E-TSF	●	●	●	●	●	0.047	0.375	0.187	0.150
Medium cutting	TM	FNMG 331E TM	FNMG110404E-TM	●	●	●	●	●	0.016	0.375	0.187	0.150
		FNMG 332E TM	FNMG110408E-TM	●	●	●	●	●	0.031	0.375	0.187	0.150
		FNMG 333E TM	FNMG110412E-TM	●	●	●	●	●	0.047	0.375	0.187	0.150
		FNMG 334E TM	FNMG110416E-TM					●	0.063	0.375	0.187	0.150

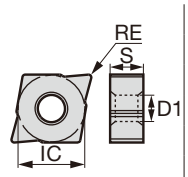
Make sure to offset the cutting edge position after insert change.
Please note that the insert shim may interfere with the workpiece when FNMG insert is used with Q-style toolholder to undercut a work diameter of 1.968" or smaller.

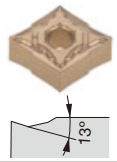
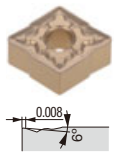
● : Line up

GN

Rhombic, 70° with hole

P	Steel	●ɔ ɔ✠ ɔ ✠
M	Stainless	●ɔ ● ɔ ●ɔ
K	Cast iron	●ɔ
N	Non-ferrous	
S	Superalloy	ɔ
H	Hard material	

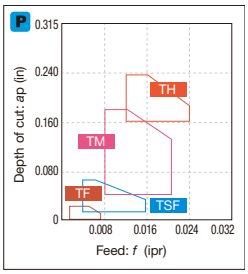


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8015	AH6225	Dimension (in) RE	IC	S	D1
Finishing	TSF	GNMG 330.5E TSF	GNMG090402E-TSF	●	●	●	●	●	0.008	0.375	0.187	0.150
		GNMG 331E TSF	GNMG090404E-TSF	●	●	●	●	●	0.016	0.375	0.187	0.150
		GNMG 332E TSF	GNMG090408E-TSF	●	●	●	●	●	0.031	0.375	0.187	0.150
Medium cutting	TM	GNMG 330.5E TM	-			●		●	0.008	0.375	0.187	0.150
		GNMG 331E TM	GNMG090404E-TM	●	●	●	●	●	0.016	0.375	0.187	0.150
		GNMG 332E TM	GNMG090408E-TM	●	●	●	●	●	0.031	0.375	0.187	0.150
		GNMG 333E TM	GNMG090412E-TM	●	●	●	●	●	0.047	0.375	0.187	0.150

Make sure to offset the cutting edge position after insert change.
Do not use ISO-EcoTurn cartridge set for CNMG33 (AD-CL-4/3-SET or -SET-S) with GNMG33 insert.
The insert may move during machining.

● : Line up

Chip control range



Reference pages: FNMG...: External toolholder → C036 -, Internal toolholder → D042 -
J-Series toolholder → G052, TungCap → K011 -
GNMG...: External toolholder → C019 -, Internal toolholder → D027 -
J-Series toolholder → G036, TungCap → K008 -

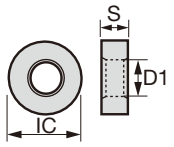
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

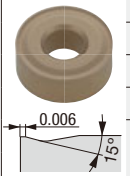
RN

Round, with hole

P	Steel	●	●ɔ	ɔ✣	✣				●ɔ				●								
M	Stainless		●ɔ						●ɔ				●								
K	Cast iron	●ɔ	●ɔ			●	ɔ	✣	●ɔ				●								
N	Non-ferrous												●								
S	Superalloy								●ɔ												
H	Hard material																●ɔ	●ɔ			



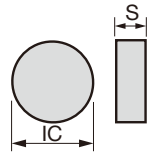
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T5105	T5115	T5125	AH120	Uncoated TH10	Ceramic LX10	LX11	Dimension (in) RE	IC	S	D1
Heavy cutting	61	RNMG 32-61	RNMG090300-61		●	●									-	0.375	0.125	0.150
		RNMG 43-61	RNMG120400-61	●	●	●	●	●	●	●	●	●			-	0.500	0.187	0.203
		RNMG 54-61	RNMG150600-61		●	●									-	0.625	0.250	6.43
		RNMG 64-61	RNMG190600-61		●	●	●								-	0.750	0.250	0.312
		RNMG 86-61	RNMG250900-61		●	●									-	1.000	0.375	9.22
Finishing to medium cutting	-	RNGA 43	RNGA120400										●	▲	-	0.500	0.187	0.203



RN

Round, without hole

P	Steel																				
M	Stainless																				
K	Cast iron	●ɔ																			
N	Non-ferrous																				
S	Superalloy				●	●	●														
H	Hard material		●ɔ	●ɔ																	

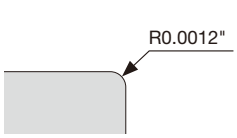


Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	LX10	LX11	TW43	TS200	TS300	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	RNGN 430	RNGN120400	●	●	▲				-	0.500	0.187	-
		RNGN 450	RNGN120700		●	▲				-	0.500	0.313	-
		RNGN 45	RNGN120700	●						-	0.500	0.313	-
		RNGN 45-E	RNGN120700-E					●	●	-	0.500	0.313	-
		RNGN 45-T1	RNGN120700-T1					●	●	-	0.500	0.313	-
		RNGN 43 T6	RNGN120400 T6				●			-	0.500	0.187	-
		RNGN 45 T6	RNGN120700 T6				●			-	0.500	0.313	-

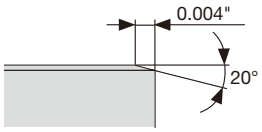
● : Line up
▲ : To be discontinued

Edge prep

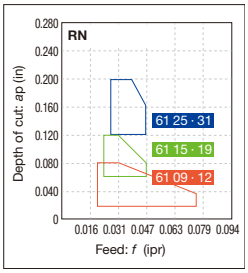
E: Low cutting force



T1/T6 : Strong cutting edge



Chip control range



Reference pages: RNMG..., RNGA...: External toolholder → C065 -

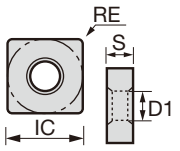
● : Continuous cutting
ɕ : Light interrupted cutting
✠ : Heavy interrupted cutting

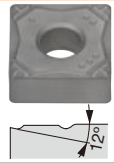
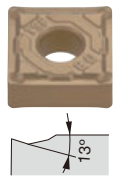
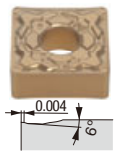
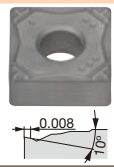
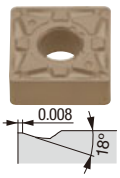
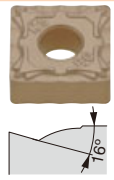
SN



Square with hole

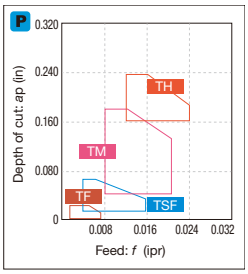
P	Steel	●	●ɕ	ɕ✠	ɕ		ɕ✠			●ɕ	●ɕ			●ɕ											
M	Stainless		●ɕ		●	ɕ	●ɕ																		
K	Cast iron	●ɕ	●ɕ							●ɕ	●ɕ			●ɕ											
N	Non-ferrous																								
S	Superalloy					ɕ																			
H	Hard material																								

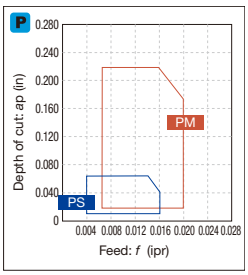


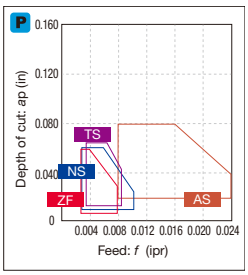
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	Coated T9215	Coated T9225	Coated T6215	Coated AH8015	Coated AH6225	Coated cermet GT9530	Coated cermet AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing	TF	SNMG 431 TF	SNMG120402-TF		●	●	●	●	●			●	0.008	0.500	0.187	0.203
		SNMG 431 TF	SNMG120404-TF		●	●	●	●	●			●	0.016	0.500	0.187	0.203
		SNMG 432 TF	SNMG120408-TF		●	●	●	●	●			●	0.031	0.500	0.187	0.203
	TSF	SNMG 430.5 TSF	SNMG120402-TSF		●	●	●	●	●			●	0.008	0.500	0.187	0.203
		SNMG 431 TSF	SNMG120404-TSF		●	●	●	●	●	●	●	●	0.016	0.500	0.187	0.203
		SNMG 432 TSF	SNMG120408-TSF		●	●	●	●	●	●	●	●	0.031	0.500	0.187	0.203
		SNMG 433 TSF	SNMG120412-TSF		●	●	●	●	●			●	0.047	0.500	0.187	0.203
	PS	SNMG 430.5 PS	SNMG120402-PS		●	●	●	●	●				0.008	0.500	0.187	0.203
		SNMG 431 PS	SNMG120404-PS		●	●	●	●	●			●	0.016	0.500	0.187	0.203
		SNMG 432 PS	SNMG120408-PS		●	●	●	●	●			●	0.031	0.500	0.187	0.203
		SNMG 433 PS	SNMG120412-PS		●	●	●	●	●				0.047	0.500	0.187	0.203
Finishing for mild steel	ZF	SNMG 430.5 ZF	SNMG120402-ZF		●	●	●	●	●			●	0.008	0.500	0.187	0.203
		SNMG 431 ZF	SNMG120404-ZF		●	●	●	●	●			●	0.016	0.500	0.187	0.203
		SNMG 432 ZF	SNMG120408-ZF		●	●	●	●	●			●	0.031	0.500	0.187	0.203
		SNMG 433 ZF	SNMG120412-ZF		●	●	●	●	●			●	0.047	0.500	0.187	0.203
Finishing	AS	SNMG 431 AS	SNMG120404-AS									●	0.016	0.500	0.187	0.203
		SNMG 432 AS	SNMG120408-AS	●	●							●	0.031	0.500	0.187	0.203
	NS	SNMG 432 NS	SNMG120408-NS		●	●							0.031	0.500	0.187	0.203
																

● : Line up

Chip control range







Reference pages: External toolholder → C076 - Internal toolholder → D054 -

Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square with hole

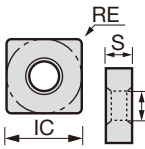
| | | |

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square with hole

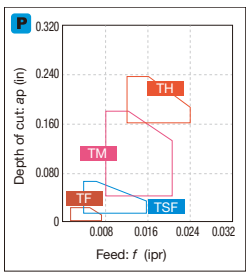
P	Steel	●	●ɔ	●✠	✠	ɔ		ɔ✠	ɔ	●ɔ			●ɔ				●ɔ				
M	Stainless		●ɔ			●	ɔ	●ɔ	ɔ	●ɔ											
K	Cast iron	●ɔ	●ɔ						ɔ	●ɔ			●ɔ				●ɔ				
N	Non-ferrous																				
S	Superalloy						ɔ		●	●ɔ											
H	Hard material																				

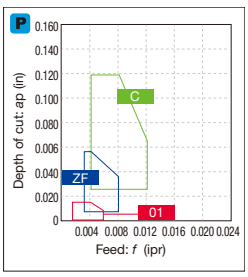


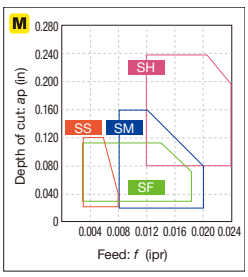
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	AH8015	AH6225	AH725	AH120	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing for mild steel	17	SNMG 432-17	SNMG120408-17											●	0.031	0.500	0.187	0.203
Finishing	B ~ D	SNGG 321 R-B	SNGG090304R-B										●	●	0.016	0.375	0.125	0.150
		SNGG 321 L-B	SNGG090304L-B										●	●	0.016	0.375	0.125	0.150
		SNGG 322 R-B	SNGG090308R-B											●	0.031	0.375	0.125	0.150
		SNGG 322 L-B	SNGG090308L-B											●	0.031	0.375	0.125	0.150
		SNGG 431 R-C	SNGG120404R-C										●	●	0.016	0.500	0.187	0.203
		SNGG 431 L-C	SNGG120404L-C										●	●	0.016	0.500	0.187	0.203
		SNGG 432 R-C	SNGG120408R-C											●	0.031	0.500	0.187	0.203
		SNGG 432 L-C	SNGG120408L-C											●	0.031	0.500	0.187	0.203
		SNGG 432 R-D	SNGG120408R-D											●	0.031	0.500	0.187	0.203
		SNGG 432 L-D	SNGG120408L-D											●	0.031	0.500	0.187	0.203
Medium cutting	TM	SNMG 321 TM	SNMG090304-TM		●	●	●								0.016	0.375	0.125	0.150
		SNMG 322 TM	SNMG090308-TM		●	●	●								0.031	0.375	0.125	0.150
		SNMG 431 TM	SNMG120404-TM		●	●		●	●	●		●			0.016	0.500	0.187	0.203
		SNMG 432 TM	SNMG120408-TM	●	●	●	●	●	●	●		●			0.031	0.500	0.187	0.203
		SNMG 433 TM	SNMG120412-TM	●	●	●	●	●	●	●	●	●			0.047	0.500	0.187	0.203
		SNMG 434 TM	SNMG120416-TM		●	●	●	●	●	●					0.063	0.500	0.187	0.203
		SNMG 542 TM	SNMG150608-TM		●										0.031	0.625	0.250	0.250
		SNMG 543 TM	SNMG150612-TM		●							●			0.047	0.625	0.250	0.250
		SNMG 642 TM	SNMG190608-TM		●							●			0.031	0.750	0.250	0.312
		SNMG 643 TM	SNMG190612-TM		●							●			0.047	0.750	0.250	0.312
	PM	SNMG 431 PM	SNMG120404-PM		●	●		●	●	●					0.016	0.500	0.187	0.203
		SNMG 432 PM	SNMG120408-PM		●	●		●	●	●					0.031	0.500	0.187	0.203
		SNMG 433 PM	SNMG120412-PM		●	●		●	●	●					0.047	0.500	0.187	0.203
		SNMG 434 PM	SNMG120416-PM		●	●		●	●	●					0.063	0.500	0.187	0.203

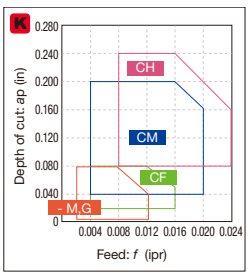
● : Line up

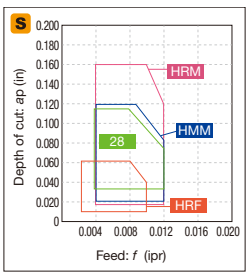
Chip control range



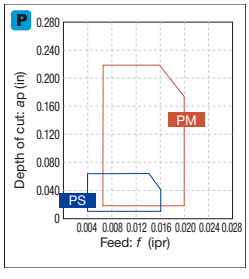


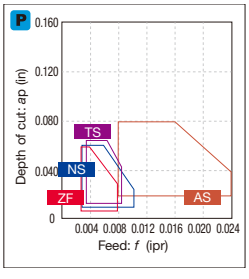






*-M,G: Without chipbreaker





Reference pages: External toolholder → C076 -
Internal toolholder → D054 -

Insert NEGATIVE TYPE

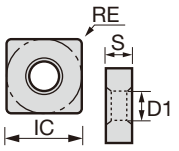
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

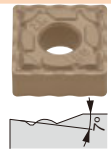
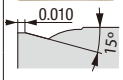
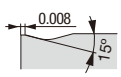
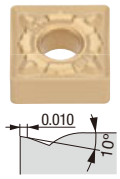
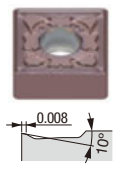
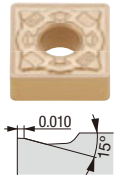
SN



Square with hole

P	Steel	●	●ɔ	●ɔ	✣	✣	ɔ									ɔ✣	✣	✣		ɔ	●	●ɔ	●ɔ		●ɔ	●ɔ		●				
M	Stainless		●ɔ			●								ɔ	●ɔ	✣			ɔ	●	●ɔ							●				
K	Cast iron	●ɔ	●ɔ				●	●ɔ	●	ɔ	✣								ɔ	●	●ɔ	●ɔ		●ɔ	●ɔ		●				
N	Non-ferrous																										●				
S	Superalloy											ɔ			ɔ	●	●	●ɔ													
H	Hard material																														



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	AH8015	AH6225	AH6235	AH905	AH725	AH110	AH120	Coated cermet GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium cutting for mild steel	**ZM**	**SNMG 431 ZM**	**SNMG120404-ZM**		●	●		●						●	●											0.016	0.500	0.187	0.203
		SNMG 432 ZM	SNMG120408-ZM		●	●	●	●						●	●											0.031	0.500	0.187	0.203
		SNMG 433 ZM	SNMG120412-ZM		●	●	●	●						●	●											0.047	0.500	0.187	0.203
		SNMG 434 ZM	SNMG120416-ZM		●	●		●						●	●											0.063	0.500	0.187	0.203
Medium cutting	**DM**	**SNMG 431 DM**	**SNMG120404-DM**		●	●		●						●	●											0.016	0.500	0.187	0.203
		SNMG 432 DM	SNMG120408-DM		●	●		●						●	●											0.031	0.500	0.187	0.203
		SNMG 433 DM	SNMG120412-DM		●	●	●	●						●	●											0.047	0.500	0.187	0.203
		SNMG 434 DM	SNMG120416-DM		●	●		●						●	●											0.063	0.500	0.187	0.203
																													
Medium cutting	**All-round**	**SNMG 321**	**SNMG090304**		●	●																●		●	0.016	0.375	0.125	0.150
		SNMG 322	SNMG090308		●	●	●															●		●	0.031	0.375	0.125	0.150
		SNMG 431	**SNMG120404**		●	●	●				●	●							●	●		●	●	●	0.016	0.500	0.187	0.203
		SNMG 432	SNMG120408	●	●	●	●		●	●	●	●	●				●		●	●	●	●	●	●	0.031	0.500	0.187	0.203
		SNMG 433	SNMG120412	●	●	●	●		●	●	●	●	●						●	●				●	0.047	0.500	0.187	0.203
		SNMG 434	SNMG120416	●	●	●	●				●	●													0.063	0.500	0.187	0.203
		SNMG 435	SNMG120420		●	●	●					●	●												0.078	0.500	0.187	0.203
		SNMG 543	**SNMG150612**		●	●	●			●					●					●					0.047	0.625	0.250	0.250
		SNMG 544	SNMG150616		●	●				●										●					0.063	0.625	0.250	0.250
		SNMG 643	**SNMG190612**		●	●	●			●		●	●		●					●					0.047	0.750	0.250	0.312
		SNMG 644	SNMG190616		●	●	●			●	●	●	●							●					0.063	0.750	0.250	0.312
		SNMG 856	**SNMG250724**		●	●	●																		0.094	1.000	0.313	0.359
		**SNMG 866**	**SNMG250924**											●						●					0.094	1.000	0.375	0.359
	SM	**SNMG 432 SM**	**SNMG120408-SM**					●							●	●		●							0.031	0.500	0.187	0.203
		SNMG 433 SM	**SNMG120412-SM**					●							●	●									0.047	0.500	0.187	0.203
																													
	SDM	**SNMG 432 SDM**	**SNMG120408-SDM**					●							●	●									0.031	0.500	0.187	0.203
		SNMG 433 SDM	SNMG120412-SDM					●							●	●									0.047	0.500	0.187	0.203
																													
	CM	**SNMG 432 CM**	**SNMG120408-CM**	●	●			●	●	●	●	●	●												0.031	0.500	0.187	0.203
		SNMG 433 CM	SNMG120412-CM	●	●			●	●	●	●	●	●												0.047	0.500	0.187	0.203
																													

● : Line up

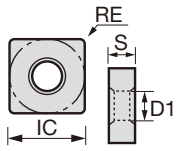
Reference pages: External toolholder → C076 - Internal toolholder → D054 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square with hole

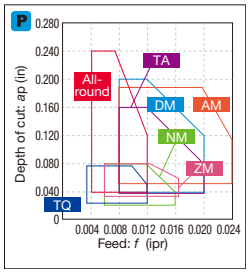
P	Steel	●◐◐✠ ◐ ◐✠ ✠ ●◐ ● ◐◐◐ ●
M	Stainless	●◐ ● ● ◐ ◐◐ ✠ ●◐ ● ◐◐ ●
K	Cast iron	●◐ ● ◐◐ ● ◐ ✠ ●◐ ● ◐◐◐ ● ◐✠
N	Non-ferrous	● ◐✠
S	Superalloy	● ◐ ◐ ◐◐ ● ◐✠
H	Hard material	

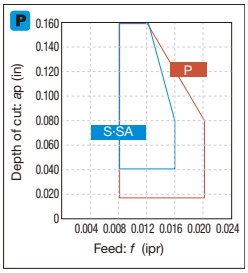


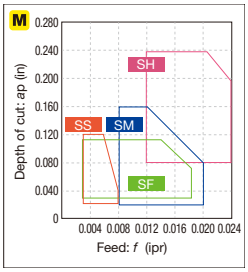
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5105	T5115	T5125	AH8005	AH8015	AH6225	AH6235	AH905	AH120	GH110	GH330	Cermet NS9530	Uncoated TH10	KS20	Dimension (in) RE	IC	S	D1
Medium cutting	HRM	SNMG 432 HRM	SNMG120408-HRM									●	●										0.031	0.500	0.187	0.203
		SNMG 433 HRM	SNMG120412-HRM									●	●										0.047	0.500	0.187	0.203
		SNMG 542 HRM	SNMG150608-HRM									●	●										0.031	0.625	0.250	0.250
		SNMG 543 HRM	SNMG150612-HRM									●	●										0.047	0.625	0.250	0.250
		SNMG 643 HRM	SNMG190612-HRM									●	●										0.047	0.750	0.250	0.312
		SNMG 644 HRM	SNMG190616-HRM									●	●										0.063	0.750	0.250	0.312
	TA	SNMG 432 TA	SNMG120408-TA	●	●																		0.031	0.500	0.187	0.203
		SNMG 433 TA	SNMG120412-TA	●	●																		0.047	0.500	0.187	0.203
	SA	SNMG 431 SA	SNMG120404-SA			●								●	●		●						0.016	0.500	0.187	0.203
		SNMG 432 SA	SNMG120408-SA			●								●	●		●					●	0.031	0.500	0.187	0.203
		SNMG 433 SA	SNMG120412-SA			●								●	●		●						0.047	0.500	0.187	0.203
		SNMG 643 SA	SNMG190612-SA														●					●	0.047	0.750	0.250	0.312
		SNMG 644 SA	SNMG190616-SA														●						0.063	0.750	0.250	0.312
	HMM	SNMG 432 HMM	SNMG120408-HMM													●							0.031	0.500	0.187	0.203
		SNMG 433 HMM	SNMG120412-HMM													●							0.047	0.500	0.187	0.203
	P	SNGG 321 R-P	SNGG090304R-P															●			●		0.016	0.375	0.125	0.150
		SNGG 321 L-P	SNGG090304L-P															●			●		0.016	0.375	0.125	0.150
		SNGG 322 R-P	SNGG090308R-P															●	●	●	●		0.031	0.375	0.125	0.150
		SNGG 322 L-P	SNGG090308L-P															●			●		0.031	0.375	0.125	0.150
		SNGG 431 R-P	SNGG120404R-P															●			●		0.016	0.500	0.187	0.203
		SNGG 431 L-P	SNGG120404L-P															●			●		0.016	0.500	0.187	0.203
		SNGG 432 R-P	SNGG120408R-P															●			●		0.031	0.500	0.187	0.203
		SNGG 432 L-P	SNGG120408L-P															●			●		0.031	0.500	0.187	0.203

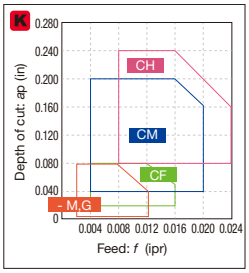
● : Line up

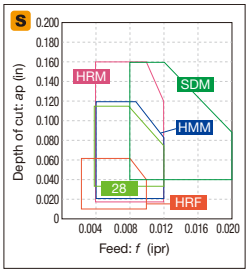
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C076 - Internal toolholder → D054 -

Insert NEGATIVE TYPE

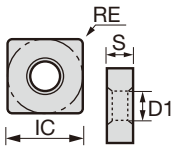
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN



Square with hole

		T9205	T9215	T9225	T9235	AH6225	AH6235	AH120	GH330	NS9530
P	Steel	●	●ᑕ	●ᑕ✣	✣	ᑕ✣	✣	●ᑕ	●ᑕ	●ᑕ
M	Stainless		●ᑕ			●ᑕ	✣	●ᑕ	●ᑕ	
K	Cast iron	●ᑕ	●ᑕ					●ᑕ	●ᑕ	●ᑕ
N	Non-ferrous									
S	Superalloy							●ᑕ		
H	Hard material									



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	AH6225	AH6235	AH120	GH330	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	S	SNMG 431 R-S	SNMG120404R-S			●	●	●	●			●	0.016	0.500	0.187	0.203
		SNMG 431 L-S	SNMG120404L-S			●	●	●	●			●	0.016	0.500	0.187	0.203
		SNMG 432 R-S	SNMG120408R-S			●	●	●	●		●	●	0.031	0.500	0.187	0.203
		SNMG 432 L-S	SNMG120408L-S			●	●	●	●		●	●	0.031	0.500	0.187	0.203
	27	SNMG 432-27	SNMG120408-27			●						●	0.031	0.500	0.187	0.203
		SNMG 433-27	SNMG120412-27			●							0.047	0.500	0.187	0.203
	33	SNMG 432-33	SNMG120408-33		●	●							0.031	0.500	0.187	0.203
		SNMG 433-33	SNMG120412-33			●							0.047	0.500	0.187	0.203
		SNMG 543-33	SNMG150612-33		●	●							0.047	0.625	0.250	0.250
		SNMG 644-33	SNMG190616-33			●	●						0.063	0.750	0.250	0.312
	37	SNMG 432-37	SNMG120408-37		●						●	●	0.031	0.500	0.187	0.203
		SNMG 433-37	SNMG120412-37		●								0.047	0.500	0.187	0.203
Medium to heavy cutting	TH	SNMG 432 TH	SNMG120408-TH		●	●	●			●			0.031	0.500	0.187	0.203
		SNMG 433 TH	SNMG120412-TH		●	●	●			●			0.047	0.500	0.187	0.203
		SNMG 543 TH	SNMG150612-TH	●	●	●				●			0.047	0.625	0.250	0.250
		SNMG 544 TH	SNMG150616-TH	●	●	●				●			0.063	0.625	0.250	0.250
		SNMG 643 TH	SNMG190612-TH	●	●	●	●			●			0.047	0.750	0.250	0.312
		SNMG 644 TH	SNMG190616-TH	●	●	●	●			●			0.063	0.750	0.250	0.312
	THS	SNMG 432 THS	SNMG120408-THS		●	●	●						0.031	0.500	0.187	0.203
		SNMG 433 THS	SNMG120412-THS		●	●	●						0.047	0.500	0.187	0.203
		SNMG 543 THS	SNMG150612-THS		●	●							0.047	0.625	0.250	0.250
		SNMG 544 THS	SNMG150616-THS		●	●							0.063	0.625	0.250	0.250
		SNMG 642 THS	SNMG190608-THS		●	●	●						0.031	0.750	0.250	0.312
		SNMG 643 THS	SNMG190612-THS		●	●	●						0.047	0.750	0.250	0.312
		SNMG 644 THS	SNMG190616-THS		●	●	●						0.063	0.750	0.250	0.312
		SNMG 646 THS	SNMG190624-THS		●	●	●						0.094	0.750	0.250	0.312
		SNMG 854 THS	SNMG250716-THS		●	●	●						0.063	1.000	0.313	0.359
		SNMG 856 THS	SNMG250724-THS		●	●	●						0.094	1.000	0.313	0.359

● : Line up

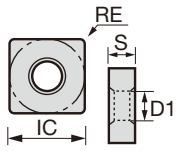
Reference pages: External toolholder → C076 - Internal toolholder → D054 -

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square with hole

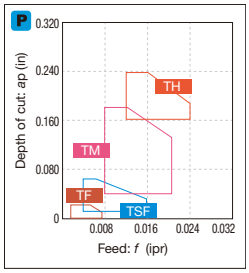
P	Steel	●ɔ ɔ✣ ✣ ✣ ɔ✣ ✣
M	Stainless	●ɔ ●ɔ ✣
K	Cast iron	●ɔ ● ɔ ✣
N	Non-ferrous	
S	Superalloy	
H	Hard material	

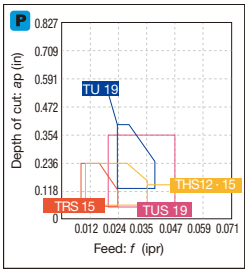


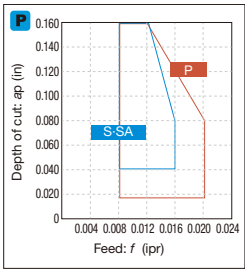
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T5105	T5115	T5125	AH6225	AH6235	Dimension (in) RE	IC	S	D1
Medium to heavy cutting	SH	SNMG 432 SH	SNMG120408-SH							●	●	0.031	0.500	0.187	0.203
		SNMG 433 SH	SNMG12041 2-SH							●	●	0.047	0.500	0.187	0.203
		SNMG 543 SH	SNMG150612-SH							●	●	0.047	0.625	0.250	0.250
		SNMG 544 SH	SNMG15061 6-SH							●	●	0.063	0.625	0.250	0.250
		SNMG 643 SH	SNMG190612-SH							●	●	0.047	0.750	0.250	0.312
		SNMG 644 SH	SNMG19061 6-SH							●	●	0.063	0.750	0.250	0.312
	CH	SNMG 432 CH	SNMG120408-CH				●	●	●			0.031	0.500	0.187	0.203
		SNMG 433 CH	SNMG12041 2-CH				●	●	●			0.047	0.500	0.187	0.203
		SNMG 434 CH	SNMG12041 6-CH					●	●			0.063	0.500	0.187	0.203
Medium to heavy cutting (single sided)	TRS	SNMM 543 TRS	SNMM150612-TRS	●	●	●						0.047	0.625	0.250	0.250
		SNMM 544 TRS	SNMM15061 6-TRS	●	●	●						0.063	0.625	0.250	0.250
		SNMM 644 TRS	SNMM190616-TRS	●	●	●						0.063	0.750	0.250	0.312
		SNMM 646 TRS	SNMM19062 4-TRS	●	●	●						0.094	0.750	0.250	0.312
		SNMM 866 TRS	SNMM250924-TRS	●	●	●						0.094	1.000	0.375	0.359
	57	SNMM 432-57	SNMM120408-57	●	●							0.031	0.500	0.187	0.203
		SNMM 544-57	SNMM150616-57		●							0.063	0.625	0.250	0.250
		SNMM 643-57	SNMM190612-57		●							0.047	0.750	0.250	0.312
	65	SNMM 643-65	SNMM190612-65		●							0.047	0.750	0.250	0.312
		SNMM 646-65	SNMM190624-65		●							0.094	0.750	0.250	0.312
		SNMM 1066-65	SNMM310924-65		●							0.094	1.250	0.375	0.346

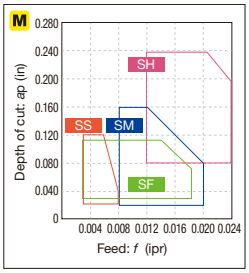
● : Line up

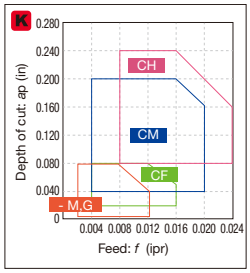
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C076 - Internal toolholder → D054 -

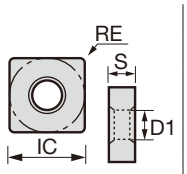
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square with hole

		T9215	T9225	T9235	T505	T515	T5105	T5115	T5125	GT720	NS520	TH10	FX105	LX10	LX11	LX21
P	Steel	●ɔ	ɔ✠	✠						●ɔ		●ɔ		●		
M	Stainless	●ɔ												●		
K	Cast iron	●ɔ			●	●ɔ	●	ɔ	✠	●ɔ		●ɔ		●		●ɔ
N	Non-ferrous													●		
S	Superalloy															
H	Hard material												●ɔ	●ɔ	●ɔ	●ɔ

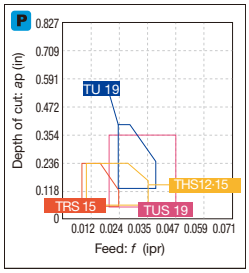


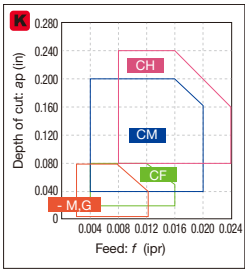
Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Heavy cutting (single sided)	TU	SNMM 644 TU	SNMM190616-TU	0.063	0.750	0.250	0.312
		SNMM 646 TU	SNMM190624-TU	0.094	0.750	0.250	0.312
		SNMM 856 TU	SNMM250724-TU	0.094	1.000	0.313	0.359
		SNMM 866 TU	SNMM250924-TU	0.094	1.000	0.375	0.359
	TUS	SNMM 643 TUS	SNMM190612-TUS	0.047	0.750	0.250	0.312
		SNMM 644 TUS	SNMM190616-TUS	0.063	0.750	0.250	0.312
		SNMM 646 TUS	SNMM190624-TUS	0.094	0.750	0.250	0.312
		SNMM 856 TUS	SNMM250724-TUS	0.094	1.000	0.313	0.359
		SNMM 858 TUS	SNMM250732-TUS	0.125	1.000	0.313	0.359
		SNMM 866 TUS	SNMM250924-TUS	0.094	1.000	0.375	0.359
		SNMM 868 TUS	SNMM250932-TUS	0.125	1.000	0.375	0.359
Finishing to medium cutting	-	SNMA 322	SNMA090308	0.031	0.375	0.125	0.150
		SNMA 323	SNMA090312	0.047	0.375	0.125	0.150
		SNMA 431	SNMA120404	0.016	0.500	0.187	0.203
		SNMA 432	SNMA120408	0.031	0.500	0.187	0.203
		SNMA 433	SNMA120412	0.047	0.500	0.187	0.203
		SNMA 434	SNMA120416	0.063	0.500	0.187	0.203
	-	SNGA 321	SNGA090304	0.016	0.375	0.125	0.150
		SNGA 431	SNGA120404	0.016	0.500	0.187	0.203
		SNGA 432	SNGA120408	0.031	0.500	0.187	0.203
		SNGA 433	SNGA120412	0.047	0.500	0.187	0.203
		SNGA 434	SNGA120416	0.063	0.500	0.187	0.203

Coated								Coated cermet		Cermet		Un-coated	Ceramic				Dimension (in)			
T9215	T9225	T9235	T505	T515	T5105	T5115	T5125	GT720		NS520		TH10	FX105	LX10	LX11	LX21	RE	IC	S	D1
		●															0.063	0.750	0.250	0.312
	●	●															0.094	0.750	0.250	0.312
	●	●															0.094	1.000	0.313	0.359
●	●																0.094	1.000	0.375	0.359
●	●	●															0.047	0.750	0.250	0.312
●	●	●															0.063	0.750	0.250	0.312
●	●	●															0.094	0.750	0.250	0.312
●	●	●															0.094	1.000	0.313	0.359
●	●																0.125	1.000	0.313	0.359
●	●	●															0.094	1.000	0.375	0.359
●	●																0.125	1.000	0.375	0.359
					●	●	●					●					0.031	0.375	0.125	0.150
						●											0.047	0.375	0.125	0.150
					●	●		●									0.016	0.500	0.187	0.203
			●	●	●	●	●			●		●	●				0.031	0.500	0.187	0.203
			●	●	●	●	●			●		●	●				0.047	0.500	0.187	0.203
					●	●	●										0.063	0.500	0.187	0.203
												●					0.016	0.375	0.125	0.150
								●				●		●	▲		0.016	0.500	0.187	0.203
										●		●	●	●	▲		0.031	0.500	0.187	0.203
												●	●	●	▲	●	0.047	0.500	0.187	0.203
													●	●	▲		0.063	0.500	0.187	0.203

● : Line up
▲ : To be discontinued

Chip control range





Reference pages: External toolholder → C076 - Internal toolholder → D054 -

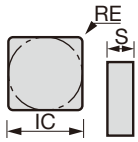
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN



Square without hole

P	Steel	●ⓒ
M	Stainless	●ⓒ
K	Cast iron	●ⓒ
N	Non-ferrous	●
S	Superalloy	●ⓒ
H	Hard material	●ⓒ●ⓒ●ⓒ

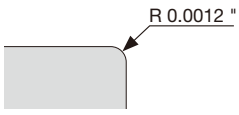


Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH120	Uncoated TH10	Ceramic TZ120	Ceramic FX105	Ceramic LX10	Ceramic LX11	Ceramic LX21	Ceramic TS300	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	**SNGD 453**	**SNGD120712**				●					0.047	0.500	0.313	-
		SNGD 454	SNGD120716				●					0.063	0.500	0.313	-
	-	**SNMN 432**	**SNMN120408**		●							0.031	0.500	0.187	-
		SNMN 433	SNMN120412	●								0.047	0.500	0.187	-
		SNMN 434	SNMN120416				●					0.063	0.500	0.187	-
	-	**SNGN 322**	**SNGN090308**					●	▲	●		0.031	0.375	0.125	-
		SNGN 421	**SNGN120304**					●	▲			0.016	0.500	0.125	-
		SNGN 423	SNGN120312						▲			0.047	0.500	0.125	-
		SNGN 431	**SNGN120404**					●	▲			0.016	0.500	0.187	-
		SNGN 432	SNGN120408		●		●	●	▲	●		0.031	0.500	0.187	-
		SNGN 433	SNGN120412			●	●	●	▲	●		0.047	0.500	0.187	-
		SNGN 434	SNGN120416				●	●	▲	●		0.063	0.500	0.187	-
		SNGN 435	SNGN120420				●			●		0.078	0.500	0.187	-
		SNGN 436	SNGN120424				●					0.094	0.500	0.187	-
		SNGN 452	**SNGN120708**			●		●	▲			0.031	0.500	0.313	-
		SNGN 453	SNGN120712			●	●	●	▲			0.047	0.500	0.313	-
		SNGN 453-T1	SNGN120712-T1								●	0.047	0.500	0.313	-
		SNGN 454	SNGN120716			●	●	●	▲			0.063	0.500	0.313	-
		SNGN 455	SNGN120720						▲			0.078	0.500	0.313	-

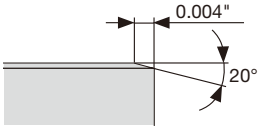
● : Line up
▲ : To be discontinued

Edge prep

E: Low cutting force



T1: Strong cutting edge



Reference pages: SNGD...: External toolholder → C081

MEMO

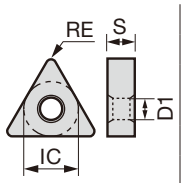
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

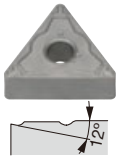
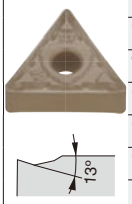
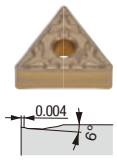
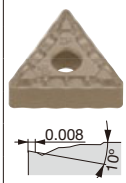
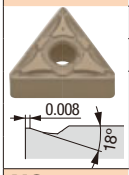
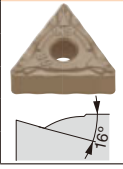
TN



Triangular with hole

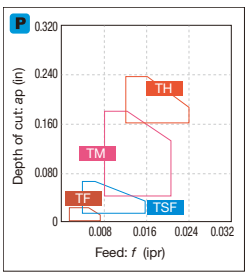
P	Steel	●	●ⓒ	●✠	✠	ⓒ		✠	●ⓒ		●ⓒ	●ⓒ			●ⓒ	●ⓒ			●	
M	Stainless		●ⓒ			●	ⓒ	●ⓒ	●ⓒ										●	
K	Cast iron	●ⓒ	●ⓒ						●ⓒ		●ⓒ	●ⓒ			●ⓒ	●ⓒ			●	
N	Non-ferrous																		●	
S	Superalloy					ⓒ			●ⓒ											
H	Hard material																			

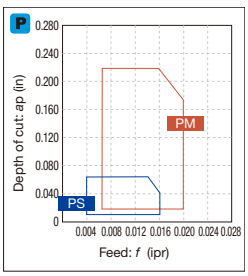


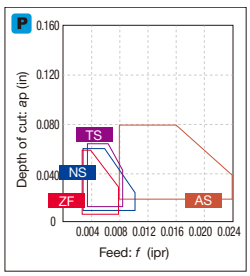
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	Coated T9215	Coated T9225	Coated T9235	Coated T6215	Coated AH8015	Coated AH6225	Coated AH120	Coated cermet GT9530	Coated cermet AT9530	Cermet NS9530	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing	**TF**	**TNMG 230.5E TF**	**TNMG110402E-TF**		●	●		●	●	●				●			0.008	0.250	0.187	0.089
		TNMG 231E TF	TNMG110404E-TF		●	●		●	●	●				●			0.016	0.250	0.187	0.089
		TNMG 232E TF	TNMG110408E-TF		●	●		●	●	●				●			0.031	0.250	0.187	0.089
		TNMG 331 TF	**TNMG160402-TF**		●	●		●	●	●				●			0.008	0.375	0.187	0.150
		TNMG 331 TF	TNMG160404-TF		●	●		●	●	●				●	●	●	0.016	0.375	0.187	0.150
		TNMG 332 TF	TNMG160408-TF		●	●		●	●	●				●	●		0.031	0.375	0.187	0.150
	TSF	**TNMG 230.5E TSF**	**TNMG110402E-TSF**		●	●		●	●	●		●		●			0.008	0.250	0.187	0.089
		TNMG 231E TSF	TNMG110404E-TSF		●	●		●	●	●		●	●	●			0.016	0.250	0.187	0.089
		TNMG 232E TSF	TNMG110408E-TSF		●	●		●	●	●		●	●	●			0.031	0.250	0.187	0.089
		TNMG 330.5 TSF	**TNMG160402-TSF**		●	●		●	●	●	●	●	●	●			0.008	0.375	0.187	0.150
		TNMG 331 TSF	TNMG160404-TSF		●	●	●	●	●	●	●	●	●	●			0.016	0.375	0.187	0.150
		TNMG 332 TSF	TNMG160408-TSF	●	●	●	●	●	●	●	●	●	●	●			0.031	0.375	0.187	0.150
		TNMG 333 TSF	TNMG160412-TSF	●	●	●	●	●	●	●	●	●		●			0.047	0.375	0.187	0.150
	PS	**TNMG 230.5E PS**	**TNMG110402E-PS**		●	●		●	●	●				●			0.008	0.250	0.187	0.089
		TNMG 231E PS	TNMG110404E-PS		●	●		●	●	●				●			0.016	0.250	0.187	0.089
		TNMG 232E PS	TNMG110408E-PS		●	●		●	●	●				●			0.031	0.250	0.187	0.089
		TNMG 330.5 PS	**TNMG160402-PS**		●	●		●	●	●				●			0.008	0.375	0.187	0.150
		TNMG 331 PS	TNMG160404-PS		●	●		●	●	●				●			0.016	0.375	0.187	0.150
		TNMG 332 PS	TNMG160408-PS		●	●		●	●	●				●			0.031	0.375	0.187	0.150
		TNMG 333 PS	TNMG160412-PS		●	●		●	●	●				●			0.047	0.375	0.187	0.150
Finishing for mild steel	**ZF**	**TNMG 230.5E ZF**	**TNMG110402E-ZF**		●	●		●	●	●				●			0.008	0.250	0.187	0.089
		TNMG 231E ZF	TNMG110404E-ZF		●	●		●	●	●				●			0.016	0.250	0.187	0.089
		TNMG 232E ZF	TNMG110408E-ZF		●	●		●	●	●				●			0.031	0.250	0.187	0.089
		TNMG 330.5 ZF	**TNMG160402-ZF**		●	●		●	●	●				●			0.008	0.375	0.187	0.150
		TNMG 331 ZF	TNMG160404-ZF		●	●	●	●	●	●		●	●	●			0.016	0.375	0.187	0.150
		TNMG 332 ZF	TNMG160408-ZF		●	●	●	●	●	●		●	●	●			0.031	0.375	0.187	0.150
		TNMG 333 ZF	TNMG160412-ZF		●	●		●	●	●				●			0.047	0.375	0.187	0.150
Finishing	**AS**	**TNMG 331 AS**	**TNMG160404-AS**			●	●							●			0.016	0.375	0.187	0.150
		TNMG 332 AS	TNMG160408-AS	●	●	●	●							●			0.031	0.375	0.187	0.150
		TNMG 333 AS	TNMG160412-AS	●	●	●											0.047	0.375	0.187	0.150
	NS	**TNMG 331 NS**	**TNMG160404-NS**		●	●								●			0.016	0.375	0.187	0.150
		TNMG 332 NS	TNMG160408-NS	●	●	●								●			0.031	0.375	0.187	0.150

● : Line up

Chip control range







Reference pages: External toolholder → C088 -
J-Series toolholder → G056 -
Internal toolholder → D063 -
TungCap → K013 -

Insert NEGATIVE TYPE

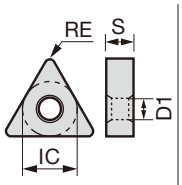
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular with hole

P	Steel	●	●ɔ	ɔ✣	✣	ɔ						ɔ✣	✣	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ		●ɔ	●ɔ										
M	Stainless		●ɔ			●			●	ɔ	●ɔ	✣	●ɔ	●ɔ																	
K	Cast iron	●ɔ	●ɔ				●	ɔ						●ɔ	●ɔ	●ɔ	●ɔ	●ɔ		●ɔ	●ɔ		ɔ✣								
N	Non-ferrous																						ɔ✣								
S	Superalloy								●	ɔ				●ɔ									ɔ✣								
H	Hard material																														



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T5105	T5115	AH8005	AH8015	AH6225	AH6235	AH120	GH330	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	Uncoated KS20	Dimension (in) RE	IC	S	D1
Finishing	**TS**	**TNMG 330.5E TS**	**TNMG110402E-TS**		●	●		●				●	●						●			0.008	0.250	0.187	0.089
		TNMG 231E TS	TNMG110404E-TS		●	●		●				●	●						●			0.016	0.250	0.187	0.089
		TNMG 232E TS	TNMG110408E-TS		●	●		●				●	●						●			0.031	0.250	0.187	0.089
		TNMG 330.5 TS	**TNMG160402-TS**		●	●		●				●	●						●			0.008	0.375	0.187	0.150
		TNMG 331 TS	TNMG160404-TS		●	●	●	●				●	●				●	●	●	●		0.016	0.375	0.187	0.150
		TNMG 332 TS	TNMG160408-TS	●	●	●	●	●				●	●				●	●	●	●		0.031	0.375	0.187	0.150
		TNMG 333 TS	TNMG160412-TS	●	●	●	●	●				●	●						●			0.047	0.375	0.187	0.150
	SF	**TNMG 331 SF**	**TNMG160404-SF**					●					●									0.016	0.375	0.187	0.150
		TNMG 332 SF	TNMG160408-SF					●					●									0.031	0.375	0.187	0.150
		TNMG 333 SF	TNMG160412-SF					●					●									0.047	0.375	0.187	0.150
	SS	**TNMG 231E SS**	**TNMG110404E-SS**										●	●								0.016	0.250	0.187	0.089
		TNMG 232E SS	TNMG110408E-SS										●	●								0.031	0.250	0.187	0.089
		TNMG 331 SS	**TNMG160404-SS**					●					●	●	●	●					●	0.016	0.375	0.187	0.150
		TNMG 332 SS	TNMG160408-SS					●					●	●	●	●					●	0.031	0.375	0.187	0.150
		TNMG 333 SS	TNMG160412-SS					●					●	●		●						0.047	0.375	0.187	0.150
		TNMG 431 SS	**TNMG220404-SS**					●					●	●		●						0.016	0.500	0.187	0.203
		TNMG 432 SS	TNMG220408-SS					●					●	●		●						0.031	0.500	0.187	0.203
		TNMG 433 SS	TNMG220412-SS					●					●	●		●						0.047	0.500	0.187	0.203
	HRF	**TNMG 331 HRF**	**TNMG160404-HRF**								●	●										0.016	0.375	0.187	0.150
		TNMG 332 HRF	TNMG160408-HRF								●	●										0.031	0.375	0.187	0.150
	CF	**TNMG 331 CF**	**TNMG160404-CF**						●	●												0.016	0.375	0.187	0.150
		TNMG 332 CF	TNMG160408-CF						●	●												0.031	0.375	0.187	0.150
Finishing (wiper)	**FW**	**TNMG 231E FW**	**TNMG110404E-FW**		●																	0.016	0.250	0.187	0.089
		TNMG 232E FW	TNMG110408E-FW		●																	0.031	0.250	0.187	0.089
		TNMG 332 FW	**TNMG110408E-FW**		●																	0.031	0.375	0.187	0.150
		TNMG 331 FW	TNMG160404-FW		●																	0.016	0.375	0.187	0.150
		TNMG 332 FW	TNMG160408-FW		●																	0.031	0.375	0.187	0.150
		*Wiper																							

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

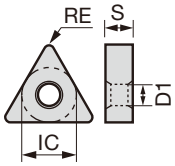
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular with hole

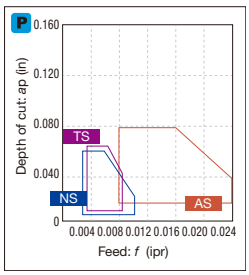
P	Steel	●	ɔ	✣	●	●	ɔ	●	ɔ					●	ɔ				●					
M	Stainless	●	ɔ		●	●	ɔ	●	ɔ					●	ɔ				●					
K	Cast iron	●	ɔ		●	●		●	ɔ					●	ɔ				●					
N	Non-ferrous																		●					
S	Superalloy				●																			
H	Hard material																							

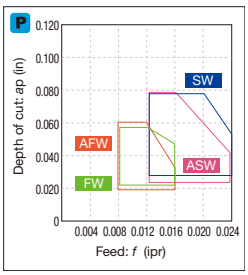


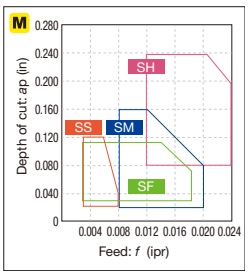
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated GH110	Coated GH330	Coated SH725	Coated cermet GT720	Cermet NS9530	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	01	TNGG 330.5 F-01	TNGG160402F-01					●					0.008	0.375	0.187	0.150
		TNGG 331 F-01	TNGG160404F-01					●					0.016	0.375	0.187	0.150
		TNGG 332 F-01	TNGG160408F-01					●					0.031	0.375	0.187	0.150
Finishing	01	TNGG 220.5-01	TNGG110302-01							●			0.008	0.250	0.125	0.089
		TNGG 221-01	TNGG110304-01							●			0.016	0.250	0.125	0.089
		TNGG 222-01	TNGG110308-01							●	●		0.031	0.250	0.125	0.089
		TNGG 330.5-01	TNGG160402-01			●				●	●	●	0.008	0.375	0.187	0.150
		TNGG 331-01	TNGG160404-01			●				●	●	●	0.016	0.375	0.187	0.150
		TNGG 332-01	TNGG160408-01			●				●	●		0.031	0.375	0.187	0.150
		TNGG 333-01	TNGG160412-01						●	●			0.047	0.375	0.187	0.150
	11	TNMG 221-11	TNMG110304-11							●			0.016	0.250	0.125	0.089
		TNMG 222-11	TNMG110308-11							●			0.031	0.250	0.125	0.089
		TNMG 330.5-11	TNMG160402-11							●			0.008	0.375	0.187	0.150
		TNMG 331-11	TNMG160404-11				●			●		●	0.016	0.375	0.187	0.150
		TNMG 332-11	TNMG160408-11							●			0.031	0.375	0.187	0.150
		TNMG 431-11	TNMG220404-11							●			0.016	0.500	0.187	0.203
		TNMG 432-11	TNMG220408-11							●			0.031	0.500	0.187	0.203
Finishing for mild steel	17	TNMG 331-17	TNMG160404-17		●		●			●			0.016	0.375	0.187	0.150
		TNMG 332-17	TNMG160408-17		●					●			0.031	0.375	0.187	0.150
Boring (double sided)	CB	TNMG 221 CB	TNMG110304-CB	●						●			0.016	0.250	0.125	0.089
		TNMG 222 CB	TNMG110308-CB	●						●			0.031	0.250	0.125	0.089

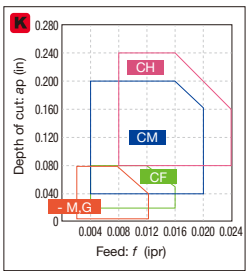
● : Line up

Chip control range

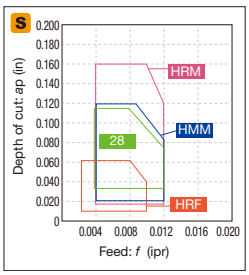


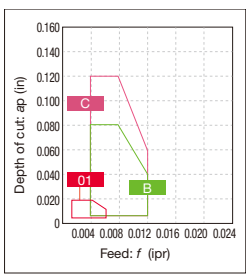






*-M,G: Without chipbreaker





Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

Insert NEGATIVE TYPE

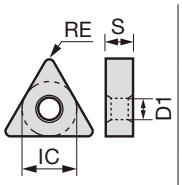
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN



Triangular with hole

P	Steel	●	●◐	◐✠	✠	◐			◐✠	◐	●◐	●	●◐	●◐	●◐	●◐	●◐	●	●					
M	Stainless		●◐			●	●	◐	●◐	◐	●◐	●	●◐	●◐					●					
K	Cast iron	●◐	●◐							◐	●◐	●	●◐		●◐	●◐	●◐	●	●					
N	Non-ferrous																		●					
S	Superalloy						●	◐		●	●◐	●												
H	Hard material																							



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH725	AH120	GH110	GH330	SH725	Coated cermet GT9530	Cermet NS9530	NS520	X407	Un-coated TH10	Dimension (in) RE	IC	S	D1
Finishing	A, C	TNGG 221 R-A	TNGG110304R-A														●	●				0.016	0.250	0.125	0.089
		TNGG 221 L-A	TNGG110304L-A														●	●				0.016	0.250	0.125	0.089
		TNGG 222 R-A	TNGG110308R-A														●	●				0.031	0.250	0.125	0.089
		TNGG 222 L-A	TNGG110308L-A														●	●				0.031	0.250	0.125	0.089
		TNGG 321 R-C	TNGG160304R-C															●		●		0.016	0.375	0.125	0.150
		TNGG 321 L-C	TNGG160304L-C															●				0.016	0.375	0.125	0.150
		TNGG 322 R-C	TNGG160308R-C															●				0.031	0.375	0.125	0.150
		TNGG 322 L-C	TNGG160308L-C															●				0.031	0.375	0.125	0.150
		TNGG 33V R-C	TNGG160400R-C															●				0.001	0.375	0.187	0.150
		TNGG 33V L-C	TNGG160400L-C															●				0.001	0.375	0.187	0.150
		TNGG 330.5 R-C	TNGG160402R-C														●	●		●	●	0.008	0.375	0.187	0.150
		TNGG 330.5 L-C	TNGG160402L-C														●	●				0.008	0.375	0.187	0.150
		TNGG 331 R-C	TNGG160404R-C											●	●		●	●	●	●	●	0.016	0.375	0.187	0.150
		TNGG 331 L-C	TNGG160404L-C											●	●		●	●		●	●	0.016	0.375	0.187	0.150
		TNGG 332 R-C	TNGG160408R-C											●	●		●	●	●	●	●	0.031	0.375	0.187	0.150
		TNGG 332 L-C	TNGG160408L-C											●	●		●	●		●	●	0.031	0.375	0.187	0.150
	D	TNGG 431 R-D	TNGG220404R-D															●		●		0.016	0.500	0.187	0.203
		TNGG 431 L-D	TNGG220404L-D															●				0.016	0.500	0.187	0.203
		TNGG 432 R-D	TNGG220408R-D															●		●		0.031	0.500	0.187	0.203
		TNGG 432 L-D	TNGG220408L-D															●				0.031	0.500	0.187	0.203
Finishing (sharp edge)	W	TNGG 330.5 FR-W	TNGG160402FR-W													●						0.008	0.375	0.187	0.150
		TNGG 330.5 FL-W	TNGG160402FL-W													●						0.008	0.375	0.187	0.150
		TNGG 331 FR-W	TNGG160404FR-W													●						0.016	0.375	0.187	0.150
		TNGG 331 FL-W	TNGG160404FL-W													●						0.016	0.375	0.187	0.150
		TNGG 332 FR-W	TNGG160408FR-W													●						0.031	0.375	0.187	0.150
		TNGG 332 FL-W	TNGG160408FL-W													●						0.031	0.375	0.187	0.150
Finishing	W	TNGG 331 R-W	TNGG160404R-W															●			●	0.016	0.375	0.187	0.150
		TNGG 331 L-W	TNGG160404L-W															●			●	0.016	0.375	0.187	0.150
		TNGG 332 R-W	TNGG160408R-W															●				0.031	0.375	0.187	0.150
		TNGG 332 L-W	TNGG160408L-W															●				0.031	0.375	0.187	0.150
Medium cutting	TM	TNMG 221 TM	TNMG110304-TM		●	●	●															0.016	0.250	0.125	0.089
		TNMG 222 TM	TNMG110308-TM		●	●	●															0.031	0.250	0.125	0.089
		TNMG 231E TM	TNMG110404E-TM		●	●		●		●	●											0.016	0.250	0.187	0.089
		TNMG 232E TM	TNMG110408E-TM		●	●		●		●	●											0.031	0.250	0.187	0.089
		TNMG 233E TM	TNMG110412E-TM		●	●		●		●	●											0.047	0.250	0.187	0.089
		TNMG 331 TM	TNMG160404-TM		●	●	●	●		●	●	●	●									0.016	0.375	0.187	0.150
		TNMG 332 TM	TNMG160408-TM	●	●	●	●	●		●	●	●	●									0.031	0.375	0.187	0.150
		TNMG 333 TM	TNMG160412-TM	●	●	●	●	●		●	●											0.047	0.375	0.187	0.150
		TNMG 334 TM	TNMG160416-TM		●	●		●	●	●	●											0.063	0.375	0.187	0.150
		TNMG 431 TM	TNMG220404-TM		●	●							●									0.016	0.500	0.187	0.203
		TNMG 432 TM	TNMG220408-TM	●	●	●	●						●									0.031	0.500	0.187	0.203
		TNMG 433 TM	TNMG220412-TM		●	●	●						●									0.047	0.500	0.187	0.203
		TNMG 434 TM	TNMG220416-TM		●	●																0.063	0.500	0.187	0.203

● : Line up

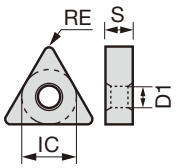
Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular with hole

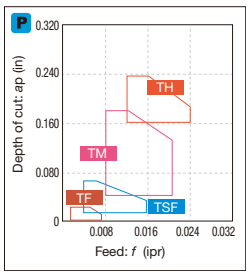
P	Steel	●ɔ	●✣	✣	ɔ		ɔ✣					●ɔ					●ɔ			
M	Stainless	●ɔ			●	ɔ	●ɔ													
K	Cast iron	●ɔ										●ɔ					●ɔ			
N	Non-ferrous																			
S	Superalloy					ɔ														
H	Hard material																			

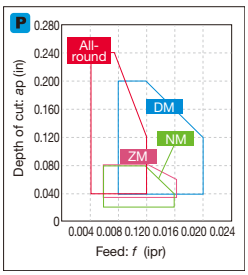


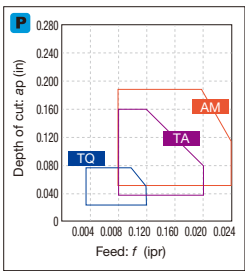
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9235	Coated T6215	Coated AH8015	Coated AH6225	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	PM	TNMG 231E PM	TNMG110404E-PM	●	●		●	●	●			0.016	0.250	0.187	0.089
		TNMG 232E PM	TNMG110408E-PM	●	●		●	●	●			0.031	0.250	0.187	0.089
		TNMG 233E PM	TNMG110412E-PM	●	●		●	●	●			0.047	0.250	0.187	0.089
		TNMG 331 PM	TNMG160404-PM	●	●		●	●	●			0.016	0.375	0.187	0.150
		TNMG 332 PM	TNMG160408-PM	●	●		●	●	●			0.031	0.375	0.187	0.150
		TNMG 333 PM	TNMG160412-PM	●	●		●	●	●			0.047	0.375	0.187	0.150
		TNMG 334 PM	TNMG160416-PM									0.063	0.375	0.187	0.150
Medium cutting for mild steel	ZM	TNMG 231E ZM	TNMG110404E-ZM	●	●		●	●	●			0.016	0.250	0.187	0.089
		TNMG 232E ZM	TNMG110408E-ZM	●	●		●	●	●			0.031	0.250	0.187	0.089
		TNMG 233E ZM	TNMG110412E-ZM	●	●		●	●	●			0.047	0.250	0.187	0.089
		TNMG 331 ZM	TNMG160404-ZM	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.150
		TNMG 332 ZM	TNMG160408-ZM	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.150
		TNMG 333 ZM	TNMG160412-ZM	●	●	●	●	●	●			0.047	0.375	0.187	0.150
		TNMG 334 ZM	TNMG160416-ZM	●	●		●	●	●			0.063	0.375	0.187	0.150
		TNMG 433 ZM	TNMG220412-ZM		●							0.047	0.500	0.187	0.203
Medium cutting	AM	TNMG 332 AM	TNMG160408-AM	●	●							0.031	0.375	0.187	0.150
		TNMG 333 AM	TNMG160412-AM	●	●							0.047	0.375	0.187	0.150
	NM	TNMG 332 NM	TNMG160408-NM		●							0.031	0.375	0.187	0.150
		TNMG 333 NM	TNMG160412-NM	●	●							0.047	0.375	0.187	0.150

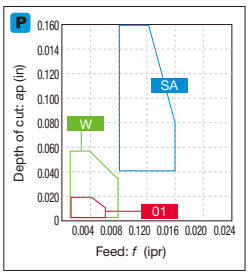
● : Line up

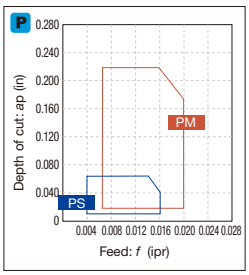
Chip control range

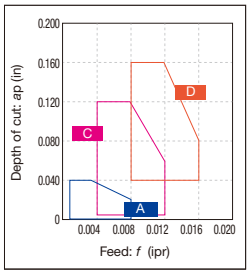












Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

Insert NEGATIVE TYPE

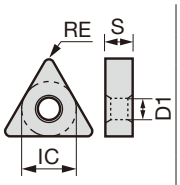
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular with hole

P	Steel	●	●ɔ	●ɔ	✣	✣	ɔ									ɔ✣	✣	ɔ	●	●ɔ	●ɔ			●ɔ	●ɔ		●				
M	Stainless		●ɔ			●						●	ɔ	●ɔ	✣	ɔ	●	●ɔ									●				
K	Cast iron	●ɔ	●ɔ				●	●ɔ	●	ɔ	✣					ɔ	●	●ɔ	●ɔ	●ɔ				●ɔ	●ɔ		●				
N	Non-ferrous																										●				
S	Superalloy											●	ɔ			●	●	●ɔ													
H	Hard material																														



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	AH8005	AH8015	AH6225	AH6235	AH725	AH110	AH120	Coated cermet GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium cutting	**DM**	**TNMG 331 DM**	**TNMG160404-DM**		●	●		●							●	●									0.016	0.375	0.187	0.150
		TNMG 332 DM	TNMG160408-DM	●	●	●	●	●							●	●									0.031	0.375	0.187	0.150
		TNMG 333 DM	TNMG160412-DM		●	●		●							●	●									0.047	0.375	0.187	0.150
		TNMG 334 DM	TNMG160416-DM		●	●		●							●	●									0.063	0.375	0.187	0.150
	All-round	**TNMG 221**	**TNMG110304**		●	●					●	●	●									●		●	0.016	0.250	0.125	0.089
		TNMG 222	TNMG110308		●	●					●	●	●									●		●	0.031	0.250	0.125	0.089
		TNMG 321	**TNMG160304**																					●	0.016	0.375	0.125	0.150
		TNMG 322	TNMG160308																					●	0.031	0.375	0.125	0.150
		TNMG 331	**TNMG160404**	●	●	●	●		●	●	●	●	●						●	●			●	●	0.016	0.375	0.187	0.150
		TNMG 332	TNMG160408	●	●	●	●		●	●	●	●	●						●	●	●		●	●	0.031	0.375	0.187	0.150
		TNMG 333	TNMG160412	●	●	●	●		●	●	●	●	●						●	●					0.047	0.375	0.187	0.150
		TNMG 334	TNMG160416		●	●	●						●												0.063	0.375	0.187	0.150
		TNMG 335	TNMG160420		●	●	●																		0.078	0.375	0.187	0.150
		TNMG 432	**TNMG220408**	●	●	●	●					●	●											●	0.031	0.500	0.187	0.203
		TNMG 433	TNMG220412	●	●	●	●						●			●								●	0.047	0.500	0.187	0.203
		TNMG 434	TNMG220416		●	●						●				●								●	0.063	0.500	0.187	0.203
		TNMG 542	**TNMG270608**			●														●					0.031	0.625	0.250	0.250
		TNMG 543	TNMG270612			●														●					0.047	0.625	0.250	0.250
		TNMG 544	TNMG270616																	●					0.063	0.625	0.250	0.250
	SM	**TNMG 231E SM**	**TNMG110404E-SM**					●								●									0.016	0.250	0.187	0.089
		TNMG 232E SM	TNMG110408E-SM					●								●									0.031	0.250	0.187	0.089
		TNMG 331 SM	**TNMG160404-SM**					●								●	●	●							0.016	0.375	0.187	0.150
		TNMG 332 SM	TNMG160408-SM					●								●	●	●							0.031	0.375	0.187	0.150
		TNMG 333 SM	TNMG160412-SM					●								●	●								0.047	0.375	0.187	0.150
		TNMG 432 SM	**TNMG220408-SM**					●								●	●								0.031	0.500	0.187	0.203
		TNMG 433 SM	TNMG220412-SM					●								●	●								0.047	0.500	0.187	0.203
	SDM	**TNMG 331 SDM**	**TNMG160404-SDM**					●								●	●								0.016	0.375	0.187	0.150
		TNMG 332 SDM	TNMG160408-SDM					●								●	●								0.031	0.375	0.187	0.150
		TNMG 333 SDM	TNMG160412-SDM					●								●	●								0.047	0.375	0.187	0.150
	HRM	**TNMG 331 HRM**	**TNMG160404-HRM**											●	●										0.016	0.375	0.187	0.150
		TNMG 332 HRM	TNMG160408-HRM											●	●										0.031	0.375	0.187	0.150
		TNMG 333 HRM	TNMG160412-HRM											●	●										0.047	0.375	0.187	0.150
	CM	**TNMG 331 CM**	**TNMG160404-CM**	●	●			●	●	●	●	●	●												0.016	0.375	0.187	0.150
		TNMG 332 CM	TNMG160408-CM	●	●			●	●	●	●	●	●												0.031	0.375	0.187	0.150
		TNMG 333 CM	TNMG160412-CM	●	●			●	●	●	●	●	●												0.047	0.375	0.187	0.150
		TNMG 432 CM	**TNMG220408-CM**	●	●			●	●	●		●	●												0.031	0.500	0.187	0.203
		TNMG 433 CM	TNMG220412-CM	●	●			●	●	●	●	●	●												0.047	0.500	0.187	0.203

● : Line up

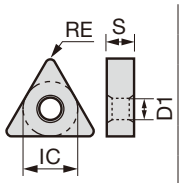
Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

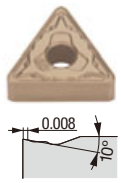
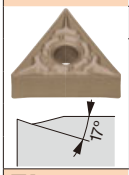
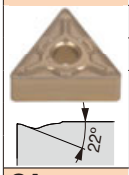
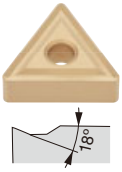
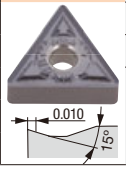
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN

Triangular with hole

P	Steel	●ⓒ	●✠	●	ⓒ✠	✠		●ⓒ				●ⓒ	●ⓒ		●ⓒ								
M	Stainless	●ⓒ		●	●ⓒ	✠		●ⓒ															
K	Cast iron	●ⓒ						●ⓒ				●ⓒ	●ⓒ		●ⓒ			ⓒ✠					
N	Non-ferrous																	ⓒ✠					
S	Superalloy						ⓒ	●ⓒ										ⓒ✠					
H	Hard material																						

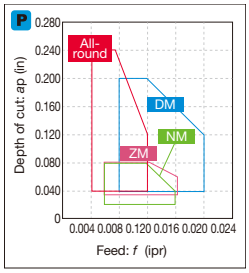


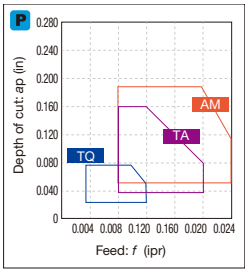
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T6215	Coated AH6225	Coated AH6235	Coated AH905	Coated AH120	Coated cermet GT9530	Coated cermet AT9530	Cermet NS9530	Uncoated KS20	Dimension (in) RE	IC	S	D1
Medium cutting (wiper)	**SW**	**TNMG 232E SW**	**TNMG110408E-SW**	●											0.031	0.250	0.187	0.089
		TNMG 23**3E SW**	TNMG110412E-SW	●											0.047	0.250	0.187	0.089
		TNMG 332 SW	**TNMG160408-SW**	●											0.031	0.375	0.187	0.150
		TNMG 33**3 SW**	TNMG160412-SW	●											0.047	0.375	0.187	0.150
		*Wiper																
Medium cutting	**TQ**	**TNMG 331 TQ**	**TNMG160404-TQ**	●	●						●	●	●		0.016	0.375	0.187	0.150
		TNMG 33**2 TQ**	TNMG160408-TQ	●	●						●	●	●		0.031	0.375	0.187	0.150
	TA	**TNMG 331 TA**	**TNMG160404-TA**	●	●										0.016	0.375	0.187	0.150
		TNMG 33**2 TA**	TNMG160408-TA	●	●										0.031	0.375	0.187	0.150
		TNMG 33**3 TA**	TNMG160412-TA	●	●										0.047	0.375	0.187	0.150
	SA	**TNMG 331 SA**	**TNMG160404-SA**			●	●	●		●					0.016	0.375	0.187	0.150
		TNMG 33**2 SA**	TNMG160408-SA			●	●	●		●				●	0.031	0.375	0.187	0.150
		TNMG 33**3 SA**	TNMG160412-SA			●	●	●		●				●	0.047	0.375	0.187	0.150
		TNMG 432 SA	**TNMG220408-SA**			●	●	●		●				●	0.031	0.500	0.187	0.203
		TNMG 43**3 SA**	TNMG220412-SA			●	●	●		●					0.047	0.500	0.187	0.203
	HMM	**TNMG 331 HMM**	**TNMG160404-HMM**						●						0.016	0.375	0.187	0.150
		TNMG 33**2 HMM**	TNMG160408-HMM						●						0.031	0.375	0.187	0.150
		TNMG 33**3 HMM**	TNMG160412-HMM						●						0.047	0.375	0.187	0.150

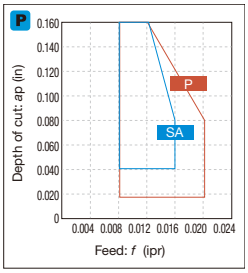
* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

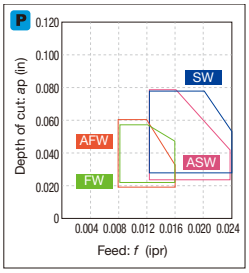
● : Line up

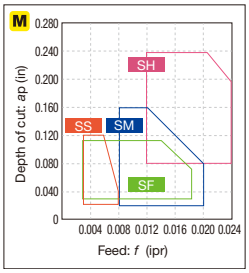
Chip control range

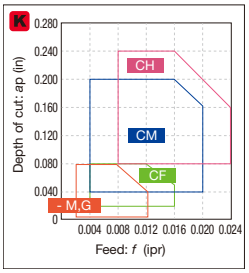


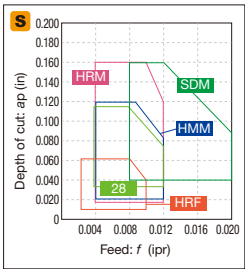












*-M,G: Without chipbreaker

Reference pages: External toolholder → C088 -
Internal toolholder → D063 -
J-Series toolholder → G056 -
TungCap → K013 -

Insert NEGATIVE TYPE

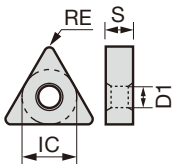
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular with hole

P	Steel	●ɔ	●ɔ✣	✣			ɔ✣	✣	ɔ	●	●ɔ	●	●ɔ	●ɔ	●ɔ		●ɔ			●
M	Stainless	●ɔ			●	ɔ	●ɔ	✣	ɔ	●	●ɔ	●	●ɔ	●ɔ						●
K	Cast iron	●ɔ							ɔ	●	●ɔ	●	●ɔ		●ɔ		●ɔ		●	●
N	Non-ferrous																		●	●
S	Superalloy				●	ɔ			●	●	●ɔ	●							●	
H	Hard material																			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	AH8005	AH8015	AH6225	AH6235	AH725	AH110	AH120	GH110	GH330	SH725	Coated cermet GT720		Cermet NS9530		Uncoated KS05F	TH10	Dimension (in) RE	IC	S	D1
Medium cutting (sharp edge)	P	TNGG 330.5 FR-P	TNGG160402FR-P													●							0.008	0.375	0.187	0.150
		TNGG 330.5 FL-P	TNGG160402FL-P													●							0.008	0.375	0.187	0.150
		TNGG 331 FR-P	TNGG160404FR-P													●							0.016	0.375	0.187	0.150
		TNGG 331 FL-P	TNGG160404FL-P													●							0.016	0.375	0.187	0.150
		TNGG 332 FR-P	TNGG160408FR-P													●							0.031	0.375	0.187	0.150
		TNGG 332 FL-P	TNGG160408FL-P													●							0.031	0.375	0.187	0.150
	P	TNGG 330.5 R-P	TNGG160402R-P											●	●				●			●	0.008	0.375	0.187	0.150
		TNGG 330.5 L-P	TNGG160402L-P											●	●				●			●	0.008	0.375	0.187	0.150
		TNGG 331 R-P	TNGG160404R-P											●	●				●			●	0.016	0.375	0.187	0.150
		TNGG 331 L-P	TNGG160404L-P											●	●				●			●	0.016	0.375	0.187	0.150
		TNGG 332 R-P	TNGG160408R-P											●	●				●			●	0.031	0.375	0.187	0.150
		TNGG 332 L-P	TNGG160408L-P											●	●				●			●	0.031	0.375	0.187	0.150
Medium cutting	S	TNMG 331 R-S	TNMG160404R-S	●	●	●			●	●	●				●				●				0.016	0.375	0.187	0.150
		TNMG 331 L-S	TNMG160404L-S	●	●	●			●	●					●				●				0.016	0.375	0.187	0.150
		TNMG 332 R-S	TNMG160408R-S	●	●	●			●	●	●				●				●				0.031	0.375	0.187	0.150
		TNMG 332 L-S	TNMG160408L-S	●	●	●			●	●					●				●				0.031	0.375	0.187	0.150
		TNMG 431 R-S	TNMG220404R-S		●	●			●	●					●				●				0.016	0.500	0.187	0.203
		TNMG 431 L-S	TNMG220404L-S		●	●			●	●					●				●				0.016	0.500	0.187	0.203
		TNMG 432 R-S	TNMG220408R-S		●	●			●	●					●				●				0.031	0.500	0.187	0.203
		TNMG 432 L-S	TNMG220408L-S		●	●			●	●					●				●				0.031	0.500	0.187	0.203
	27	TNMG 331-27	TNMG160404-27	●	●																		0.016	0.375	0.187	0.150
		TNMG 332-27	TNMG160408-27	●	●														●				0.031	0.375	0.187	0.150
		TNMG 333-27	TNMG160412-27	●	●																		0.047	0.375	0.187	0.150
		TNMG 431-27	TNMG220404-27		●																		0.016	0.500	0.187	0.203
		TNMG 432-27	TNMG220408-27		●																		0.031	0.500	0.187	0.203
		TNMG 433-27	TNMG220412-27		●																		0.047	0.500	0.187	0.203
	28	TNMG 331-28	TNMG160404-28				●	●					●								●		0.016	0.375	0.187	0.150
		TNMG 332-28	TNMG160408-28				●	●					●								●		0.031	0.375	0.187	0.150
		TNMG 431-28	TNMG220404-28									●	●										0.016	0.500	0.187	0.203
		TNMG 432-28	TNMG220408-28									●	●										0.031	0.500	0.187	0.203
	33	TNMG 331-33	TNMG160404-33																			●	0.016	0.375	0.187	0.150
		TNMG 332-33	TNMG160408-33																			●	0.031	0.375	0.187	0.150
		TNMG 334-33	TNMG160416-33		●																		0.063	0.375	0.187	0.150
		TNMG 431-33	TNMG220404-33		●												●						0.016	0.500	0.187	0.203
		TNMG 433-33	TNMG220412-33			●																	0.047	0.500	0.187	0.203
		TNMG 434-33	TNMG220416-33		●																		0.063	0.500	0.187	0.203
	37	TNMG 331-37	TNMG160404-37	●											●				●				0.016	0.375	0.187	0.150
		TNMG 332-37	TNMG160408-37	●											●				●				0.031	0.375	0.187	0.150

● : Line up

Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

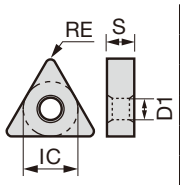
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

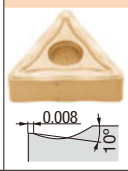
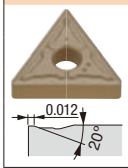
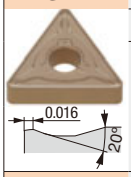
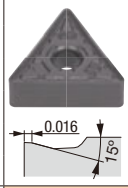
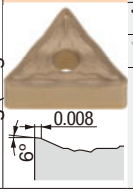
TN



Triangular with hole

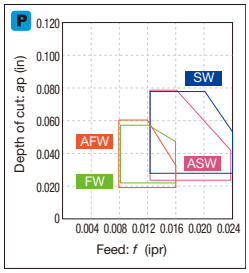
P	Steel	●ⓒ	ⓒ✠	✠					●ⓒ	●ⓒ										
M	Stainless	●ⓒ							●ⓒ	●ⓒ										
K	Cast iron	●ⓒ			●ⓒ	●	ⓒ	✠	●ⓒ	●ⓒ										
N	Non-ferrous																			
S	Superalloy								●ⓒ											
H	Hard material																			

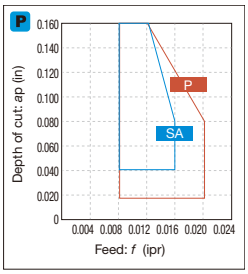


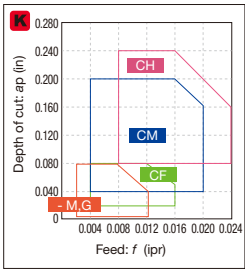
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T515	T5105	T5115	T5125	AH120	GH330	Dimension (in) RE	IC	S	D1
Medium cutting	**38**	**TNMG 331-38**	**TNMG160404-38**									●	0.016	0.375	0.187	0.150
		TNMG 332-38	TNMG160408-38									●	0.031	0.375	0.187	0.150
Medium to heavy cutting	**TH**	**TNMG 432 TH**	**TNMG220408-TH**	●	●	●					●		0.031	0.500	0.187	0.203
		TNMG 433 TH	TNMG220412-TH	●	●	●							0.047	0.500	0.187	0.203
	THS	**TNMG 432 THS**	**TNMG220408-THS**	●	●	●							0.031	0.500	0.187	0.203
		TNMG 433 THS	TNMG220412-THS	●	●	●							0.047	0.500	0.187	0.203
	CH	**TNMG 331 CH**	**TNMG160404-CH**				●	●	●	●			0.016	0.375	0.187	0.150
		TNMG 332 CH	TNMG160408-CH				●	●	●	●			0.031	0.375	0.187	0.150
		TNMG 333 CH	TNMG160412-CH				●	●	●	●			0.047	0.375	0.187	0.150
		TNMG 432 CH	**TNMG220408-CH**							●			0.031	0.500	0.187	0.203
		TNMG 433 CH	TNMG220412-CH					●	●				0.047	0.500	0.187	0.203
		TNMG 434 CH	TNMG220416-CH					●	●	●			0.063	0.500	0.187	0.203
Medium to heavy cutting (single sided)	**57**	**TNMM 332-57**	**TNMM160408-57**		●								0.031	0.375	0.187	0.150
		**TNMM 432-57**	**TNMM220408-57**		●								0.031	0.500	0.187	0.203
		TNMM 433-57	TNMM220412-57		●								0.047	0.500	0.187	0.203

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

Insert NEGATIVE TYPE

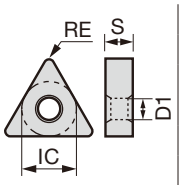
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular with hole

P	Steel						●		●ɔ			●ɔ			●	●							
M	Stainless						●								●	●							
K	Cast iron	●	●ɔ	●	ɔ	✣	●		●ɔ			●ɔ			●	●	●ɔ						
N	Non-ferrous														●	●							
S	Superalloy						●																
H	Hard material																	●ɔ	●ɔ	●ɔ			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T505	Coated T515	Coated T5105	Coated T5115	Coated T5125	Coated GH110	Coated cermet GT720	Cermet NS520	Uncoated TH03	Uncoated TH10	Ceramic FX105	Ceramic LX10	Ceramic LX11	Ceramic LX21	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	TNMA 231E	TNMA110404E		●													0.016	0.250	0.187	0.089
		TNMA 232E	TNMA110408E		●													0.031	0.250	0.187	0.089
		TNMA 233E	TNMA110412E		●													0.047	0.250	0.187	0.089
		TNMA 331	TNMA160404	●	●	●	●	●				●	●					0.016	0.375	0.187	0.150
		TNMA 332	TNMA160408	●	●	●	●	●		●	●		●	●				0.031	0.375	0.187	0.150
		TNMA 333	TNMA160412	●	●	●	●							●				0.047	0.375	0.187	0.150
		TNMA 334	TNMA160416			●	●	●										0.063	0.375	0.187	0.150
		TNMA 335	TNMA160420			●	●	●										0.078	0.375	0.187	0.150
		TNMA 431	TNMA220404				●	●										0.016	0.500	0.187	0.203
		TNMA 432	TNMA220408			●	●	●										0.031	0.500	0.187	0.203
		TNMA 433	TNMA220412			●	●	●										0.047	0.500	0.187	0.203
		TNMA 434	TNMA220416			●	●											0.063	0.500	0.187	0.203
		TNMA 438	TNMA220432											●				0.125	0.500	0.187	0.203
	-	TNGA 221	TNGA110304									●	●					0.016	0.250	0.125	0.089
		TNGA 222	TNGA110308										●					0.031	0.250	0.125	0.089
		TNGA 321	TNGA160304										●					0.016	0.375	0.125	0.150
		TNGA 322	TNGA160308										●					0.031	0.375	0.125	0.150
		TNGA 330.5	TNGA160402												●	▲		0.008	0.375	0.187	0.150
		TNGA 331	TNGA160404						●		●	●	●		●	▲	●	0.016	0.375	0.187	0.150
		TNGA 332	TNGA160408						●		●	●	●	●	●	▲	●	0.031	0.375	0.187	0.150
		TNGA 333	TNGA160412								●		●	●	●	▲	●	0.047	0.375	0.187	0.150
		TNGA 334	TNGA160416										●	●	●	▲		0.063	0.375	0.187	0.150
		TNGA 432	TNGA220408										●					0.031	0.500	0.187	0.203

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C088 - Internal toolholder → D063 -
J-Series toolholder → G056 - TungCap → K013 -

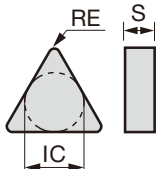
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN



Triangular without hole

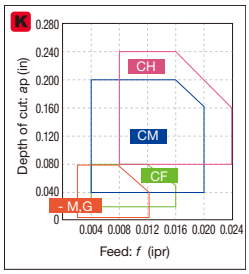
P	Steel	●																							
M	Stainless	●																							
K	Cast iron	●					●	●ᑕ																	
N	Non-ferrous	●																							
S	Superalloy																								
H	Hard material								●ᑕ	●ᑕ	●ᑕ														



Application	Chipbreaker	Designation Inch	Designation Metric	Uncoated TH10	Ceramic TZ120	Ceramic FX105	Ceramic LX10	Ceramic LX11	Ceramic LX21	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	TNGN 222	TNGN110308	●						0.031	0.250	0.125	-
		TNGN 331	TNGN160404				●	▲	●	0.016	0.375	0.187	-
		TNGN 332	TNGN160408	●			●	▲	●	0.031	0.375	0.187	-
		TNGN 333	TNGN160412	●	●	●	●	▲	●	0.047	0.375	0.187	-
		TNGN 334	TNGN160416			●	●	▲		0.063	0.375	0.187	-
		TNGN 335	TNGN160420			●				0.078	0.375	0.187	-
		TNGN 352	TNGN160708				●	▲		0.031	0.375	0.313	-
		TNGN 353	TNGN160712					▲		0.047	0.375	0.313	-

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

Insert NEGATIVE TYPE

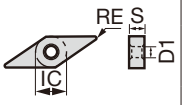
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

		T9205	T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH6235	AH120	GH330	GT9530	GT720	AT9530	NS9530	NS520
P	Steel	●	●◐	◐✣	✣	◐			◐✣	✣	●◐	●◐	●◐	●◐	●◐	●◐	●◐
M	Stainless		●◐			●	●	◐	●◐	✣	●◐	●◐					
K	Cast iron	●◐	●◐								●◐	●◐	●◐	●◐	●◐	●◐	●◐
N	Non-ferrous																
S	Superalloy						●	◐			●◐						
H	Hard material																



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	TF	VNMG 2.330.5E TF	VNMG120402E-TF	0.008	0.281	0.187	0.150
		VNMG 2.331E TF	VNMG120404E-TF	0.016	0.281	0.187	0.150
		VNMG 2.332E TF	VNMG120408E-TF	0.031	0.281	0.187	0.150
		VNMG 330.5 TF	VNMG160402-TF	0.008	0.375	0.187	0.150
		VNMG 331 TF	VNMG160404-TF	0.016	0.375	0.187	0.150
		VNMG 332 TF	VNMG160408-TF	0.031	0.375	0.187	0.150
	TSF	VNMG 2.330.5E TSF	VNMG120402E-TSF	0.008	0.281	0.187	0.150
		VNMG 2.331E TSF	VNMG120404E-TSF	0.016	0.281	0.187	0.150
		VNMG 2.332E TSF	VNMG120408E-TSF	0.031	0.281	0.187	0.150
		VNMG 330.5 TSF	VNMG160402-TSF	0.008	0.375	0.187	0.150
		VNMG 331 TSF	VNMG160404-TSF	0.016	0.375	0.187	0.150
		VNMG 332 TSF	VNMG160408-TSF	0.031	0.375	0.187	0.150
		VNMG 333 TSF	VNMG160412-TSF	0.047	0.375	0.187	0.150
	PS	VNMG 2.330.5E PS	VNMG120402E-PS	0.008	0.281	0.187	0.150
		VNMG 2.331E PS	VNMG120404E-PS	0.016	0.281	0.187	0.150
		VNMG 2.332E PS	VNMG120408E-PS	0.031	0.281	0.187	0.150
		VNMG 330.5 PS	VNMG160402-PS	0.008	0.375	0.187	0.150
		VNMG 331 PS	VNMG160404-PS	0.016	0.375	0.187	0.150
		VNMG 332 PS	VNMG160408-PS	0.031	0.375	0.187	0.150
		VNMG 333 PS	VNMG160412-PS	0.047	0.375	0.187	0.150
Finishing for mild steel	ZF	VNMG 2.330.5E ZF	VNMG120402E-ZF	0.008	0.281	0.187	0.150
		VNMG 2.331E ZF	VNMG120404E-ZF	0.016	0.281	0.187	0.150
		VNMG 2.332E ZF	VNMG120408E-ZF	0.031	0.281	0.187	0.150
		VNMG 330.5 ZF	VNMG160402-ZF	0.008	0.375	0.187	0.150
		VNMG 331 ZF	VNMG160404-ZF	0.016	0.375	0.187	0.150
		VNMG 332 ZF	VNMG160408-ZF	0.031	0.375	0.187	0.150
		VNMG 333 ZF	VNMG160412-ZF	0.047	0.375	0.187	0.150
Finishing	TS	VNMG 2.330.5E TS	VNMG120402E-TS	0.008	0.281	0.187	0.150
		VNMG 2.331E TS	VNMG120404E-TS	0.016	0.281	0.187	0.150
		VNMG 2.332E TS	VNMG120408E-TS	0.031	0.281	0.187	0.150
		VNMG 330.5 TS	VNMG160402-TS	0.008	0.375	0.187	0.150
		VNMG 331 TS	VNMG160404-TS	0.016	0.375	0.187	0.150
		VNMG 332 TS	VNMG160408-TS	0.031	0.375	0.187	0.150
		VNMG 333 TS	VNMG160412-TS	0.047	0.375	0.187	0.150
	SF	VNMG 331 SF	VNMG160404-SF	0.016	0.375	0.187	0.150
		VNMG 332 SF	VNMG160408-SF	0.031	0.375	0.187	0.150
	SS	VNMG 2.331E SS	VNMG120404E-SS	0.016	0.281	0.187	0.150
		VNMG 2.332E SS	VNMG120408E-SS	0.031	0.281	0.187	0.150
		VNMG 331 SS	VNMG160404-SS	0.016	0.375	0.187	0.150
		VNMG 332 SS	VNMG160408-SS	0.031	0.375	0.187	0.150
		VNMG 333 SS	VNMG160412-SS	0.047	0.375	0.187	0.150
	HRF	VNMG 331 HRF	VNMG160404-HRF	0.016	0.375	0.187	0.150
		VNMG 332 HRF	VNMG160408-HRF	0.031	0.375	0.187	0.150

● : Line up

Reference pages: External toolholder → C103 - Internal toolholder → D077 -
J-Series toolholder → G068 TungCap → K014 -

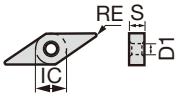
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

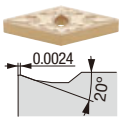
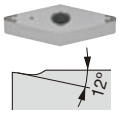
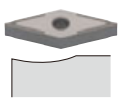
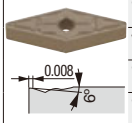
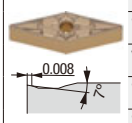
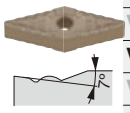
VN



Rhombic, 35°
with hole

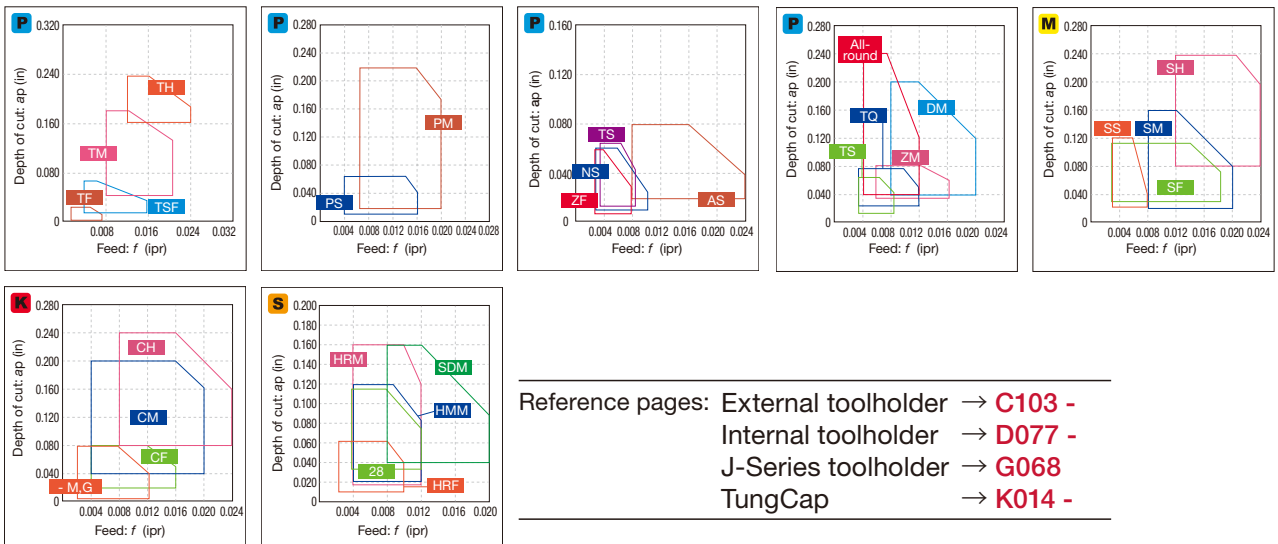
P	Steel	●	●ɔ	●✣	✣	ɔ				ɔ✣	●	●ɔ	●	●ɔ	●ɔ		●ɔ	●ɔ	●				
M	Stainless		●ɔ			●			ɔ	●ɔ	●	●ɔ	●	●ɔ					●				
K	Cast iron	●ɔ	●ɔ				●	ɔ			●	●ɔ	●	●ɔ	●ɔ		●ɔ	●ɔ	●				
N	Non-ferrous																		●				
S	Superalloy								ɔ		●	●ɔ	●										
H	Hard material																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T5105	T5115	AH8015	AH6225	AH110	AH120	GH110	GH330	Coated cermet GT9530	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing	CF	VNMG 331 CF	VNMG160404-CF						●	●											0.016	0.375	0.187	0.150
		VNMG 332 CF	VNMG160408-CF						●	●											0.031	0.375	0.187	0.150
	01	VNGG 330.5-01	VNGG160402-01												●			●	●	●	0.008	0.375	0.187	0.150
		VNGG 331-01	VNGG160404-01															●	●	●	0.016	0.375	0.187	0.150
		VNGG 332-01	VNGG160408-01															●	●		0.031	0.375	0.187	0.150
	11	VNMG 331-11	VNMG160404-11													●		●		●	0.016	0.375	0.187	0.150
		VNMG 332-11	VNMG160408-11		●													●			0.031	0.375	0.187	0.150
		VNMG 333-11	VNMG160412-11														●	●			0.047	0.375	0.187	0.150
Medium cutting	TM	VNMG 2.331E TM	VNMG120404E-TM		●	●		●			●	●									0.016	0.281	0.187	0.150
		VNMG 2.332E TM	VNMG120408E-TM		●	●		●			●	●									0.031	0.281	0.187	0.150
		VNMG 2.333E TM	VNMG120412E-TM		●	●		●			●	●									0.047	0.281	0.187	0.150
		VNMG 331 TM	VNMG160404-TM	●	●	●	●	●			●	●	●	●							0.016	0.375	0.187	0.150
		VNMG 332 TM	VNMG160408-TM	●	●	●	●	●			●	●	●	●							0.031	0.375	0.187	0.150
		VNMG 333 TM	VNMG160412-TM	●	●	●	●	●			●	●	●								0.047	0.375	0.187	0.150
	PM	VNMG 2.331E PM	VNMG120404E-PM		●	●		●			●	●									0.016	0.281	0.187	0.150
		VNMG 2.332E PM	VNMG120408E-PM		●	●		●			●	●									0.031	0.281	0.187	0.150
		VNMG 2.333E PM	VNMG120412E-PM		●	●		●			●	●									0.047	0.281	0.187	0.150
		VNMG 331 PM	VNMG160404-PM		●	●		●			●	●									0.016	0.375	0.187	0.150
		VNMG 332 PM	VNMG160408-PM		●	●		●			●	●									0.031	0.375	0.187	0.150
		VNMG 333 PM	VNMG160412-PM		●	●		●			●	●									0.047	0.375	0.187	0.150
Medium cutting for mild steel	ZM	VNMG 2.331E ZM	VNMG120404E-ZM		●	●		●			●	●									0.016	0.281	0.187	0.150
		VNMG 2.332E ZM	VNMG120408E-ZM		●	●		●			●	●									0.031	0.281	0.187	0.150
		VNMG 2.333E ZM	VNMG120412E-ZM		●	●		●			●	●									0.047	0.281	0.187	0.150
		VNMG 331 ZM	VNMG160404-ZM		●	●		●			●	●									0.016	0.375	0.187	0.150
		VNMG 332 ZM	VNMG160408-ZM		●	●	●	●			●	●									0.031	0.375	0.187	0.150
		VNMG 333 ZM	VNMG160412-ZM		●	●	●	●			●	●									0.047	0.375	0.187	0.150

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C103 -
Internal toolholder → D077 -
J-Series toolholder → G068
TungCap → K014 -

Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN

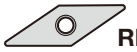


Rhombic, 35° with hole

P	Steel	● ●ɔ ɔ✣ ✣ ɔ ✣ ✣ ●ɔ ●ɔ ●ɔ

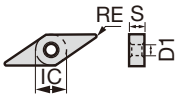
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

P	Steel	●ɔ ɔ✣ ● ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ● ●ɔ ●
K	Cast iron	●ɔ ●ɔ ● ɔ ✣ ● ●ɔ ●ɔ ● ●
N	Non-ferrous	● ●
S	Superalloy	● ɔ ● ●ɔ ●
H	Hard material	●ɔ ●ɔ



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T515	T5105	T5115	T5125	AH8005	AH8015	AH110	AH120	Cermet NS520	Uncoated KS05F	TH10	Ceramic LX10	LX11	Dimension (in) RE	IC	S	D1
Medium cutting	28	VNMG 331-28	VNMG160404-28							●	●		●		●				0.016	0.375	0.187	0.150
		VNMG 332-28	VNMG160408-28							●	●		●		●				0.031	0.375	0.187	0.150
	33	VNMG 331-33	VNMG160404-33		●							●				●			0.016	0.375	0.187	0.150
		VNMG 332-33	VNMG160408-33	●	●											●			0.031	0.375	0.187	0.150
Finishing to medium cutting	-	VNMA 2.331E	VNMA120404E			●													0.016	0.281	0.187	0.150
		VNMA 2.332E	VNMA120408E			●													0.031	0.281	0.187	0.150
		VNMA 330.5	VNMA160402													●			0.008	0.375	0.187	0.150
		VNMA 331	VNMA160404				●	●	●					●		●			0.016	0.375	0.187	0.150
		VNMA 332	VNMA160408				●	●	●					●		●			0.031	0.375	0.187	0.150
		VNGA 331	VNGA160404														●	▲	0.016	0.375	0.187	0.150
		VNGA 332	VNGA160408														●	▲	0.031	0.375	0.187	0.150

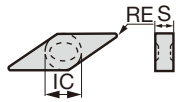
● : Line up
▲ : To be discontinued

VN



Rhombic, 35° without hole

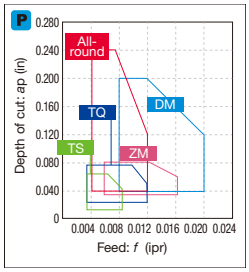
P	Steel	
M	Stainless	
K	Cast iron	●ɔ
N	Non-ferrous	
S	Superalloy	
H	Hard material	

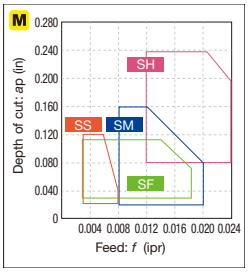


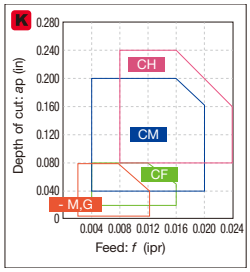
Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	VNGD 353	VNGD160712	●	0.047	0.375	0.313	-

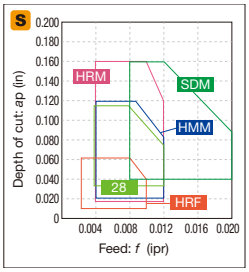
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: VNMG..., VNMA..., VNGA...:
External toolholder → C103 -, Internal toolholder → D077 -
J-Series toolholder → G068, TungCap → K014 -
VNGD...: External toolholder → C109

Insert NEGATIVE TYPE

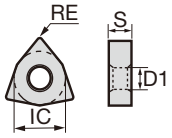
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

		T9205	T9215	T9225	T9235	T6215	T515	AH8015	AH6225	AH905	AH120	GT9530	AT9530	NS9530
P	Steel	●	●ⓒ	●ⓒ✣	✣	ⓒ			ⓒ✣		●ⓒ		●ⓒ	●ⓒ	●ⓒ
M	Stainless		●ⓒ			●		ⓒ	●ⓒ		●ⓒ				
K	Cast iron	●ⓒ	●ⓒ				●ⓒ				●ⓒ		●ⓒ	●ⓒ	●ⓒ
N	Non-ferrous														
S	Superalloy							ⓒ		ⓒ	●ⓒ				
H	Hard material														



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	TF	WNMG 330.5E TF	WNMG060402E-TF	0.008	0.375	0.187	0.150
		WNMG 331E TF	WNMG060404E-TF	0.016	0.375	0.187	0.150
		WNMG 332E TF	WNMG060408E-TF	0.031	0.375	0.187	0.150
		WNMG 430.5 TF	WNMG080402-TF	0.008	0.500	0.187	0.203
		WNMG 431 TF	WNMG080404-TF	0.016	0.500	0.187	0.203
		WNMG 432 TF	WNMG080408-TF	0.031	0.500	0.187	0.203
	TSF	WNMG 330.5E TSF	WNMG060402E-TSF	0.008	0.375	0.187	0.150
		WNMG 331E TSF	WNMG060404E-TSF	0.016	0.375	0.187	0.150
		WNMG 332E TSF	WNMG060408E-TSF	0.031	0.375	0.187	0.150
		WNMG 333E TSF	WNMG060412E-TSF	0.047	0.375	0.187	0.150
		WNMG 331 TSF	WNMG060404-TSF	0.016	0.375	0.187	0.150
		WNMG 332 TSF	WNMG060408-TSF	0.031	0.375	0.187	0.150
		WNMG 430.5 TSF	WNMG080402-TSF	0.008	0.500	0.187	0.203
		WNMG 431 TSF	WNMG080404-TSF	0.016	0.500	0.187	0.203
		WNMG 432 TSF	WNMG080408-TSF	0.031	0.500	0.187	0.203
		WNMG 433 TSF	WNMG080412-TSF	0.047	0.500	0.187	0.203
Finishing	PS	WNMG 330.5E PS	WNMG060402E-PS	0.008	0.375	0.187	0.150
		WNMG 331E PS	WNMG060404E-PS	0.016	0.375	0.187	0.150
		WNMG 332E PS	WNMG060408E-PS	0.031	0.375	0.187	0.150
		WNMG 430.5 PS	WNMG080402-PS	0.008	0.500	0.187	0.203
		WNMG 431 PS	WNMG080404-PS	0.016	0.500	0.187	0.203
		WNMG 432 PS	WNMG080408-PS	0.031	0.500	0.187	0.203
		WNMG 433 PS	WNMG080412-PS	0.047	0.500	0.187	0.203
Finishing for mild steel	ZF	WNMG 330.5E ZF	WNMG060402E-ZF	0.008	0.375	0.187	0.150
		WNMG 331E ZF	WNMG060404E-ZF	0.016	0.375	0.187	0.150
		WNMG 332E ZF	WNMG060408E-ZF	0.031	0.375	0.187	0.150
		WNMG 333E ZF	WNMG060412E-ZF	0.047	0.375	0.187	0.150
		WNMG 331 ZF	WNMG060404-ZF	0.016	0.375	0.187	0.150
		WNMG 332 ZF	WNMG060408-ZF	0.031	0.375	0.187	0.150
		WNMG 430.5 ZF	WNMG080402-ZF	0.008	0.500	0.187	0.203
		WNMG 431 ZF	WNMG080404-ZF	0.016	0.500	0.187	0.203
		WNMG 432 ZF	WNMG080408-ZF	0.031	0.500	0.187	0.203
		WNMG 433 ZF	WNMG080412-ZF	0.047	0.500	0.187	0.203
Finishing	AS	WNMG 431 AS	WNMG080404-AS	0.016	0.500	0.187	0.203
		WNMG 432 AS	WNMG080408-AS	0.031	0.500	0.187	0.203
		WNMG 433 AS	WNMG080412-AS	0.047	0.500	0.187	0.203
	NS	WNMG 431 NS	WNMG080404-NS	0.016	0.500	0.187	0.203
		WNMG 432 NS	WNMG080408-NS	0.031	0.500	0.187	0.203

● : Line up

Reference pages: External toolholder → C121 - Internal toolholder → D083 -
TungCap → K010

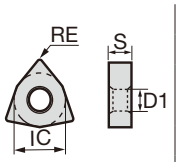
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

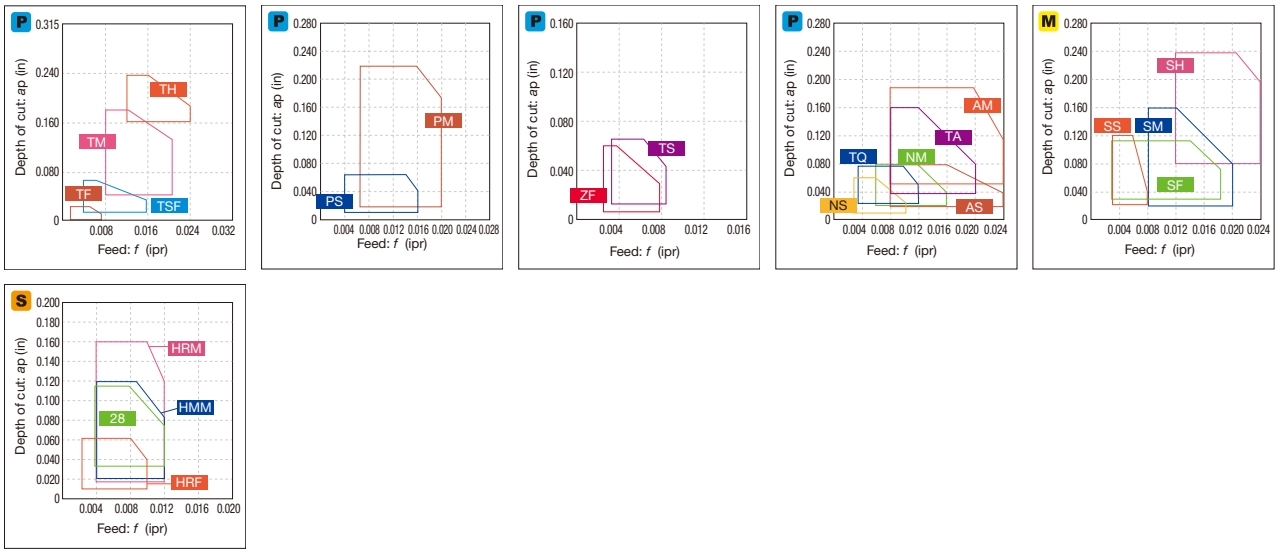
P	Steel	●	◐	✣	✣	◐			◐	✣	✣	●	◐	●	◐			●	◐		
M	Stainless	●	◐			●	●	◐	●	✣	✣	●	◐	●	◐			●	◐		
K	Cast iron	●	◐									●	◐	●	◐			●	◐		
N	Non-ferrous																				
S	Superalloy					●	◐					●	◐								
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH6235	AH120	GH330	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	Dimension (in) RE	IC	S	D1
Finishing	TS	WNMG 330.5E TS	WNMG060402E-TS	●	●		●		●	●				●			●	0.008	0.375	0.187	0.150
		WNMG 331E TS	WNMG060404E-TS	●	●		●		●	●				●			●	0.016	0.375	0.187	0.150
		WNMG 332E TS	WNMG060408E-TS	●	●		●		●	●				●			●	0.031	0.375	0.187	0.150
		WNMG 330.5 TS	WNMG080402-TS	●	●		●		●	●							●	0.008	0.500	0.187	0.203
		WNMG 431 TS	WNMG080404-TS	●	●	●	●		●	●				●	●		●	0.016	0.500	0.187	0.203
		WNMG 432 TS	WNMG080408-TS	●	●	●	●		●	●				●	●		●	0.031	0.500	0.187	0.203
		WNMG 433 TS	WNMG080412-TS	●	●	●	●		●	●							●	0.047	0.500	0.187	0.203
	SF	WNMG 331 SF	WNMG060404-SF				●			●								0.016	0.375	0.187	0.150
		WNMG 332 SF	WNMG060408-SF				●			●								0.031	0.375	0.187	0.150
		WNMG 431 SF	WNMG080404-SF				●			●								0.016	0.500	0.187	0.203
		WNMG 432 SF	WNMG080408-SF				●			●								0.031	0.500	0.187	0.203
	SS	WNMG 331E SS	WNMG060404E-SS							●	●							0.016	0.375	0.187	0.150
		WNMG 332E SS	WNMG060408E-SS							●	●							0.031	0.375	0.187	0.150
		WNMG 333E SS	WNMG060412E-SS							●	●							0.047	0.375	0.187	0.150
		WNMG 431 SS	WNMG080404-SS				●			●	●	●	●					0.016	0.500	0.187	0.203
		WNMG 432 SS	WNMG080408-SS				●			●	●	●	●					0.031	0.500	0.187	0.203
		WNMG 433 SS	WNMG080412-SS				●			●	●	●						0.047	0.500	0.187	0.203
	HRF	WNMG 431 HRF	WNMG080404-HRF					●	●									0.016	0.500	0.187	0.203
		WNMG432 HRF	WNMG080408-HRF					●	●									0.031	0.500	0.187	0.203

● : Line up

Chip control range



Reference pages: External toolholder → C121 - Internal toolholder → D083 -
TungCap → K010

Insert NEGATIVE TYPE

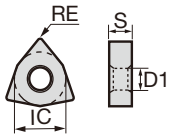
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

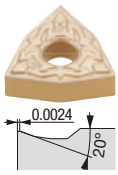
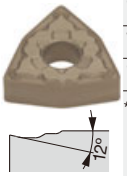
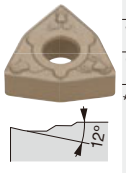
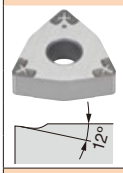
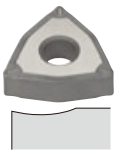
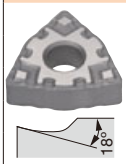
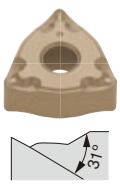
WN



Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T5105	T5115	GT9530	GT720	NS9530	NS520
P	Steel	●	●ɔ	●ɔ✠	✠			●ɔ	●ɔ	●ɔ	●ɔ
M	Stainless		●ɔ								
K	Cast iron	●ɔ	●ɔ			●	ɔ	●ɔ	●ɔ	●ɔ	●ɔ
N	Non-ferrous										
S	Superalloy										
H	Hard material										



Application	Chipbreaker	Designation Inch	Designation Metric	Coated						Coated cermet		Cermet		Dimension (in)			
				T9205	T9215	T9225	T9235	T5105	T5115	GT9530	GT720	NS9530	NS520	RE	IC	S	D1
Finishing	**CF**	**WNMG 431 CF**	**WNMG080404-CF**					●	●					0.016	0.500	0.187	0.203
		WNMG 432 CF	WNMG080408-CF					●	●					0.031	0.500	0.187	0.203
		WNMG 433 CF	WNMG080412-CF					●	●					0.047	0.500	0.187	0.203
Finishing (wiper)	**FW**	**WNMG 331E FW**	**WNMG060404E-FW**	●	●	●				●		●		0.016	0.375	0.187	0.150
		WNMG 332E FW	WNMG060408E-FW	●	●	●				●		●		0.031	0.375	0.187	0.150
		WNMG 431 FW	**WNMG080404-FW**		●	●				●		●		0.016	0.500	0.187	0.203
		WNMG 432 FW	WNMG080408-FW	●	●	●				●		●		0.031	0.500	0.187	0.203
		*Wiper															
	AFW	**WNMG 331 AFW**	**WNMG060404-AFW**		●	●						●		0.016	0.375	0.187	0.150
		WNMG 332 AFW	WNMG060408-AFW	●	●	●	●					●		0.031	0.375	0.187	0.150
		WNMG 431 AFW	**WNMG080404-AFW**		●	●						●		0.016	0.500	0.187	0.203
		WNMG 432 AFW	WNMG080408-AFW	●	●	●	●					●		0.031	0.500	0.187	0.203
		*Wiper															
Finishing	**01**	**WNGG 430.5-01**	**WNGG080402-01**									●	●	0.008	0.500	0.187	0.203
		WNGG 431-01	WNGG080404-01								●	●	●	0.016	0.500	0.187	0.203
		WNGG 432-01	WNGG080408-01								●	●		0.031	0.500	0.187	0.203
	11	**WNMG 431-11**	**WNMG080404-11**									●		0.016	0.500	0.187	0.203
		WNMG 432-11	WNMG080408-11									●		0.031	0.500	0.187	0.203
Finishing for mild steel	**17**	**WNMG 431-17**	**WNMG080404-17**									●		0.016	0.500	0.187	0.203
		WNMG 432-17	WNMG080408-17									●		0.031	0.500	0.187	0.203
Boring (double sided)	**CB**	**WNMG 331 CB**	**WNMG060404-CB**			●						●		0.016	0.375	0.187	0.150
		WNMG 332 CB	WNMG060408-CB			●						●		0.031	0.375	0.187	0.150

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Reference pages: External toolholder → C121 - TungCap → K010
Internal toolholder → D083 -

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

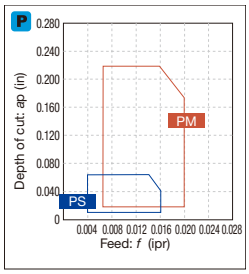
P	Steel	● ●ɔ ɔ✠ ✠ ɔ ɔ ✠ ✠ ɔ ● ●ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ●ɔ ✠ ɔ ● ●ɔ ●ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ ɔ ● ●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	ɔ ● ● ●ɔ
H	Hard material	

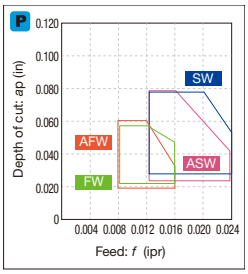


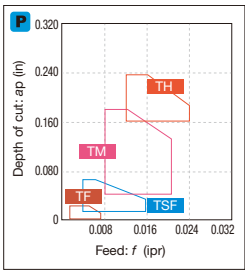
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T515	AH8015	AH6225	AH6235	AH725	AH110	AH120	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Medium cutting	TM	WNMG 331E TM	WNMG060404E-TM		●	●		●		●	●				●			0.016	0.375	0.187	0.150
		WNMG 332E TM	WNMG060408E-TM		●	●		●		●	●				●			0.031	0.375	0.187	0.150
		WNMG 333E TM	WNMG060412E-TM		●	●		●		●	●				●			0.047	0.375	0.187	0.150
		WNMG 331 TM	WNMG060404-TM		●	●	●											0.016	0.375	0.187	0.150
		WNMG 332 TM	WNMG060408-TM	●	●	●	●								●			0.031	0.375	0.187	0.150
		WNMG 431 TM	WNMG080404-TM	●	●	●	●	●	●	●	●	●	●		●			0.016	0.500	0.187	0.203
		WNMG 432 TM	WNMG080408-TM	●	●	●	●	●	●	●	●	●	●	●	●			0.031	0.500	0.187	0.203
		WNMG 433 TM	WNMG080412-TM	●	●	●	●	●	●	●	●	●		●	●			0.047	0.500	0.187	0.203
		WNMG 434 TM	WNMG080416-TM	●	●	●		●	●	●	●	●			●			0.063	0.500	0.187	0.203
	PM	WNMG 331E PM	WNMG060404E-PM		●	●		●		●	●							0.016	0.375	0.187	0.150
		WNMG 332E PM	WNMG060408E-PM		●	●		●		●	●							0.031	0.375	0.187	0.150
		WNMG 333E PM	WNMG060412E-PM		●	●		●		●	●							0.047	0.375	0.187	0.150
		WNMG 431 PM	WNMG080404-PM		●	●		●		●	●							0.016	0.500	0.187	0.203
		WNMG 432 PM	WNMG080408-PM		●	●		●		●	●							0.031	0.500	0.187	0.203
		WNMG 433 PM	WNMG080412-PM		●	●		●		●	●							0.047	0.500	0.187	0.203
		WNMG 434 PM	WNMG080416-PM		●	●		●		●	●							0.063	0.500	0.187	0.203
Medium cutting for mild steel	ZM	WNMG 331E ZM	WNMG060404E-ZM		●	●		●		●	●							0.016	0.375	0.187	0.150
		WNMG 332E ZM	WNMG060408E-ZM		●	●		●		●	●							0.031	0.375	0.187	0.150
		WNMG 333E ZM	WNMG060412E-ZM		●	●		●		●	●							0.047	0.375	0.187	0.150
		WNMG 332 ZM	WNMG060408-ZM		●	●	●											0.031	0.375	0.187	0.150
		WNMG 333 ZM	WNMG060412-ZM		●	●	●											0.047	0.375	0.187	0.150
		WNMG 431 ZM	WNMG080404-ZM		●	●		●		●	●							0.016	0.500	0.187	0.203
		WNMG 432 ZM	WNMG080408-ZM		●	●	●	●		●	●					●	●	0.031	0.500	0.187	0.203
		WNMG 433 ZM	WNMG080412-ZM	●	●	●	●	●		●	●							0.047	0.500	0.187	0.203
		WNMG 434 ZM	WNMG080416-ZM		●	●		●		●	●							0.063	0.500	0.187	0.203

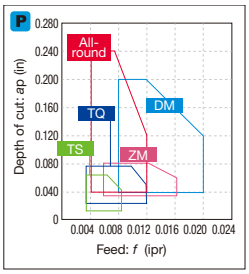
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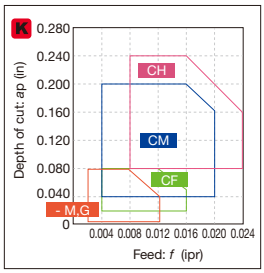
Chip control range



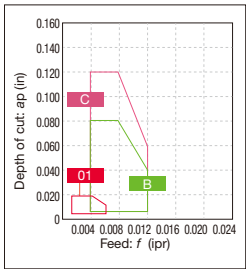








*-M,G: Without chipbreaker



Reference pages: External toolholder → C121 - TungCap → K010
Internal toolholder → D083 -

Insert NEGATIVE TYPE

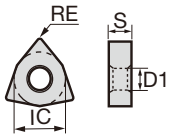
● : Continuous cutting
ɕ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

P	Steel	●	●ɕ	●ɕ	✣	✣	ɕ								ɕ✣	✣	ɕ	●	●ɕ		●ɕ	●ɕ		●						
M	Stainless		●ɕ			●							●	ɕ	●ɕ	✣	ɕ	●	●ɕ					●						
K	Cast iron	●ɕ	●ɕ				●	●ɕ	●	ɕ	✣						ɕ	●	●ɕ		●ɕ	●ɕ		●						
N	Non-ferrous																							●						
S	Superalloy												●	ɕ			●	●	●ɕ											
H	Hard material																													



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	AH8005	AH8015	AH6225	AH6235	AH725	AH110	AH120	Cermet NS9530	NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Medium cutting	**AM**	**WNMG 432 AM**	**WNMG080408-AM**		●	●																		0.031	0.500	0.187	0.203
		WNMG 433 AM	WNMG080412-AM		●	●																		0.047	0.500	0.187	0.203
		WNMG 434 AM	WNMG080416-AM		●	●																		0.063	0.500	0.187	0.203
	NM	**WNMG 333E NM**	**WNMG060412E-NM**			●																		0.047	0.375	0.187	0.150
		WNMG 432 NM	**WNMG080408-NM**	●	●	●																		0.031	0.500	0.187	0.203
		WNMG 433 NM	WNMG080412-NM	●	●	●	●																	0.047	0.500	0.187	0.203
	DM	**WNMG 431 DM**	**WNMG080404-DM**		●	●		●							●	●								0.016	0.500	0.187	0.203
		WNMG 432 DM	WNMG080408-DM	●	●	●	●	●							●	●								0.031	0.500	0.187	0.203
		WNMG 433 DM	WNMG080412-DM	●	●	●	●	●							●	●								0.047	0.500	0.187	0.203
		WNMG 434 DM	WNMG080416-DM		●	●		●							●	●								0.063	0.500	0.187	0.203
	All-round	**WNMG 331**	**WNMG060404**		●	●					●	●	●											0.016	0.375	0.187	0.150
		WNMG 332	WNMG060408		●	●				●	●	●	●											0.031	0.375	0.187	0.150
		WNMG 431	**WNMG080404**	●	●	●	●		●	●	●	●	●						●	●		●	●	0.016	0.500	0.187	0.203
		WNMG 432	WNMG080408	●	●	●	●		●	●	●	●	●						●	●		●	●	0.031	0.500	0.187	0.203
		WNMG 433	WNMG080412	●	●	●	●		●	●	●	●	●						●	●			●	0.047	0.500	0.187	0.203
		WNMG 434	WNMG080416	●	●	●	●		●	●	●	●												0.063	0.500	0.187	0.203
	SM	**WNMG 331E SM**	**WNMG060404E-SM**					●								●								0.016	0.375	0.187	0.150
		WNMG 332E SM	WNMG060408E-SM					●								●								0.031	0.375	0.187	0.150
		WNMG 333E SM	WNMG060412E-SM					●								●								0.047	0.375	0.187	0.150
		WNMG 332 SM	WNMG060408-SM															●						0.031	0.375	0.187	0.150
		WNMG 431 SM	**WNMG080404-SM**					●								●	●							0.016	0.500	0.187	0.203
		WNMG 432 SM	WNMG080408-SM					●								●	●	●						0.031	0.500	0.187	0.203
		WNMG 433 SM	WNMG080412-SM					●								●	●	●						0.047	0.500	0.187	0.203
	SDM	**WNMG 431 SDM**	**WNMG080404-SDM**					●								●	●							0.016	0.500	0.187	0.203
		WNMG 432 SDM	WNMG080408-SDM					●								●	●							0.031	0.500	0.187	0.203
		WNMG 433 SDM	WNMG080412-SDM					●								●	●							0.047	0.500	0.187	0.203
	HRM	**WNMG 431 HRM**	**WNMG080404-HRM**											●	●									0.016	0.500	0.187	0.203
		WNMG 432 HRM	WNMG080408-HRM											●	●									0.031	0.500	0.187	0.203
		WNMG 433 HRM	WNMG080412-HRM											●	●									0.047	0.500	0.187	0.203

● : Line up

Reference pages: External toolholder → C121 - Internal toolholder → D083 -
TungCap → K010

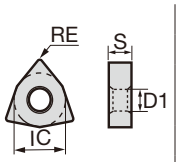
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

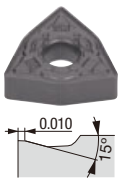
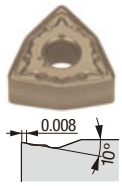
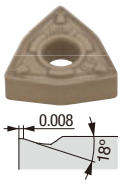
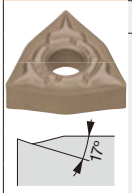
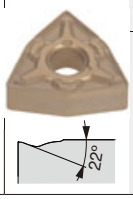
WN



Trigon, 80°
with hole

P	Steel	●	◐	◐	✠	✠	◐							◐	◐		◐				
M	Stainless		◐				●														
K	Cast iron	◐	◐					●	◐	●	◐	✠		◐	◐		◐				
N	Non-ferrous																				
S	Superalloy																				
H	Hard material																				

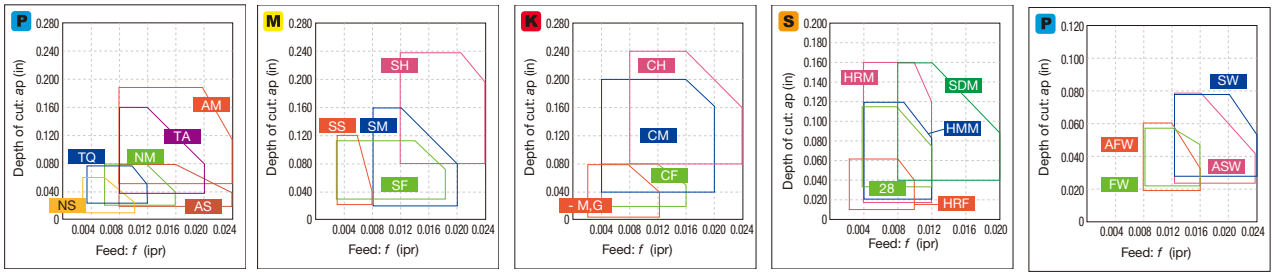


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T6215	T505	T515	T5105	T5115	T5125	Coated cermet GT9530	AT9530	Cermet NS9530	RE	IC	S	D1
Medium cutting	CM	WNMG 431 CM	WNMG080404-CM	●	●			●	●	●		●					0.016	0.500	0.187	0.203
		WNMG 432 CM	WNMG080408-CM	●	●			●	●	●	●	●	●				0.031	0.500	0.187	0.203
		WNMG 433 CM	WNMG080412-CM	●	●			●	●	●	●	●	●				0.047	0.500	0.187	0.203
Finishing cutting (wiper)	SW	WNMG 332E SW	WNMG060408E-SW	●	●	●						●					0.031	0.375	0.187	0.150
		WNMG 333E SW	WNMG060412E-SW	●	●	●						●					0.047	0.375	0.187	0.150
		WNMG 432 SW	WNMG080408-SW	●	●	●				●		●					0.031	0.500	0.187	0.203
		WNMG 433 SW	WNMG080412-SW		●	●				●		●					0.047	0.500	0.187	0.203
		*Wiper																		
	ASW	WNMG 332 ASW	WNMG060408-ASW	●	●	●											0.031	0.375	0.187	0.150
		WNMG 333 ASW	WNMG060412-ASW	●	●	●	●										0.047	0.375	0.187	0.150
		WNMG 432 ASW	WNMG080408-ASW	●	●	●	●										0.031	0.500	0.187	0.203
		WNMG 433 ASW	WNMG080412-ASW	●	●	●	●										0.047	0.500	0.187	0.203
		*Wiper																		
Medium cutting	TQ	WNMG 431 TQ	WNMG080404-TQ		●	●								●	●	●	0.016	0.500	0.187	0.203
		WNMG 432 TQ	WNMG080408-TQ		●	●								●	●	●	0.031	0.500	0.187	0.203
	TA	WNMG 432 TA	WNMG080408-TA		●	●											0.031	0.500	0.187	0.203
		WNMG 433 TA	WNMG080412-TA		●	●											0.047	0.500	0.187	0.203

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C121 - TungCap → K010
Internal toolholder → D083 -

Insert NEGATIVE TYPE

● : Continuous cutting
c : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

| | | |

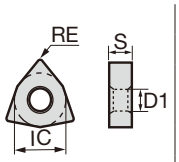
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

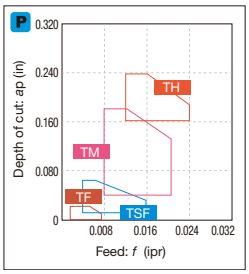
		T505	T515	T5105	T5115	T5125	AH6225	AH6235	NS520	TH10	LX10	LX11
P	Steel						ᑕ✠	✠	●ᑕ		●	
M	Stainless						●ᑕ	✠			●	
K	Cast iron	●	●ᑕ	●	ᑕ	✠			●ᑕ		●	
N	Non-ferrous										●	
S	Superalloy											
H	Hard material										●ᑕ	●ᑕ

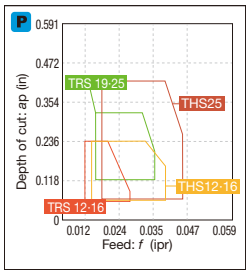


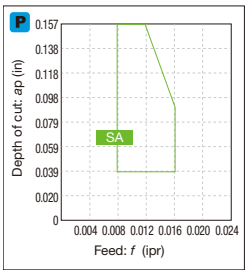
Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Medium to heavy cutting	SH	WNMG 432 SH	WNMG080408-SH	0.031	0.500	0.187	0.203
		WNMG 433 SH	WNMG080412-SH	0.047	0.500	0.187	0.203
	CH	WNMG 432 CH	WNMG080408-CH	0.031	0.500	0.187	0.203
		WNMG 433 CH	WNMG080412-CH	0.047	0.500	0.187	0.203
Finishing to medium cutting	-	WNMA 331E	WNMA060404E	0.016	0.375	0.187	0.150
		WNMA 332E	WNMA060408E	0.031	0.375	0.187	0.150
		WNMA 333E	WNMA060412E	0.047	0.375	0.187	0.150
		WNMA 334E	WNMA060416E	0.063	0.375	0.187	0.150
		WNMA 431	WNMA080404	0.016	0.500	0.187	0.203
		WNMA 432	WNMA080408	0.031	0.500	0.187	0.203
		WNMA 433	WNMA080412	0.047	0.500	0.187	0.203
		WNMA 434	WNMA080416	0.063	0.500	0.187	0.203
		WNGA 431	WNGA080404	0.016	0.500	0.187	0.203
		WNGA 432	WNGA080408	0.031	0.500	0.187	0.203
		WNGA 433	WNGA080412	0.047	0.500	0.187	0.203

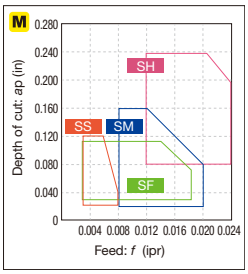
● : Line up
▲ : To be discontinued

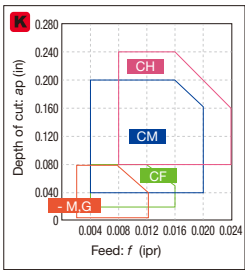
Chip control range



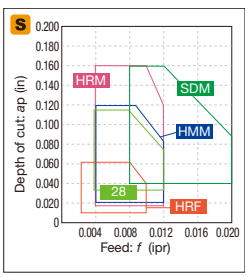








*-M,G: Without chipbreaker



Reference pages: External toolholder → C121 - TungCap → K010
Internal toolholder → D083 -

Insert NEGATIVE TYPE

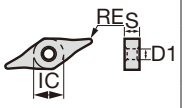
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

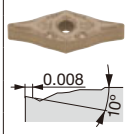
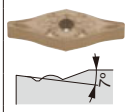
YN



Rhombic, 25° with hole

P	Steel	●ɔ	ɔ✣	✣	ɔ		ɔ✣		●ɔ				●ɔ								
M	Stainless	●ɔ			●	ɔ	●ɔ														
K	Cast iron	●ɔ							●ɔ				●ɔ								
N	Non-ferrous																				
S	Superalloy					ɔ															
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T6215	AH8015	AH6225	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing for mild steel	ZF	YNMG 330.5 ZF	YNMG160402-ZF	●	●	●	●	●	●	●	●	0.008	0.375	0.187	0.150
		YNMG 331 ZF	YNMG160404-ZF	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.150
		YNMG 332 ZF	YNMG160408-ZF	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.150
Medium cutting for mild steel	ZM	YNMG 331 ZM	YNMG160404-ZM	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.150
		YNMG 332 ZM	YNMG160408-ZM	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.150

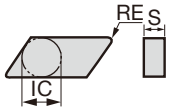
● : Line up

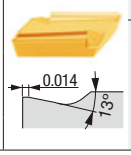
KN



Parallelogram, 55° without hole

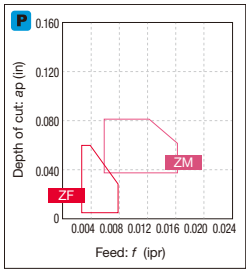
P	Steel	●ɔ																			
M	Stainless	●ɔ																			
K	Cast iron	●ɔ																			
N	Non-ferrous																				
S	Superalloy																				
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH330	Dimension (in) RE	IC	S	D1
Finishing	S1	-	KNMX160405R-S1	●	0.020	0.375	0.187	-
		-	KNMX160405L-S1	●	0.020	0.375	0.187	-

● : Line up

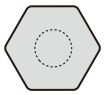
Chip control range



Reference pages: YNMG...: External toolholder → C103 -, Internal toolholder → D077 -
TungCap → K014 -

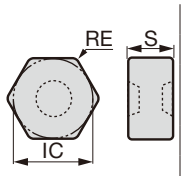
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

HN



Hexagonal, 120° without hole

P	Steel	
M	Stainless	
K	Cast iron	●◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	RE	IC	S	D1
Finishing to medium cutting	-	HNGD 453	HNGD050712	●	0.047	0.500	0.313	-
		HNGD 454	HNGD050716	●	0.063	0.500	0.313	-

● : Line up

Reference pages: HNGD...: External toolholder → C059

Insert POSITIVE TYPE

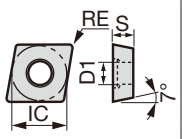
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

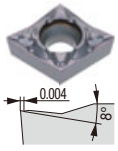
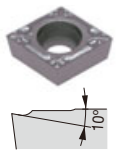
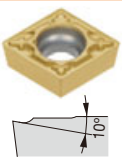
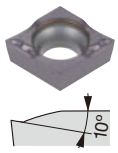
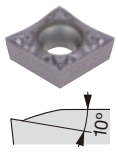
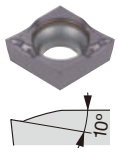
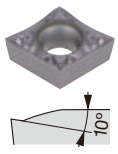
CC



Rhombic, 80°
with hole
Positive 7°

P	Steel	ɔ ●ɔ ●ɔ ●ɔ ●ɔ
M	Stainless	ɔ ●ɔ ●ɔ ●ɔ ●ɔ
K	Cast iron	ɔ
N	Non-ferrous	
S	Superalloy	● ●ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	SH7025	SH725	SH730	J740	Dimension (in) RE	IC	S	D1
Precision finishing (sharp edge)	**JP**	**CCGT 21.5V FN-JP**	**CCGT060200FN-JP**		●	●			<0.001	0.250	0.094	0.109
		CCGT 21.50 FN-JP	CCGT060201FN-JP		●	●			<0.004	0.250	0.094	0.109
		CCGT 21.50.5 FN-JP	CCGT060202FN-JP		●	●			<0.008	0.250	0.094	0.109
		CCGT 32.5V FN-JP	**CCGT09T300FN-JP**		●	●			<0.002	0.375	0.156	0.173
		CCGT 32.50 FN-JP	CCGT09T301FN-JP		●	●			<0.004	0.375	0.156	0.173
		CCGT 32.50.5 FN-JP	CCGT09T302FN-JP		●	●			<0.008	0.375	0.156	0.173
	01	**CCGT 21.50.5 F-01**	**CCGT060202F-01**		●	●			<0.008	0.250	0.094	0.109
		CCGT 21.51 F-01	CCGT060204F-01		●	●			<0.016	0.250	0.094	0.109
		CCGT 32.50.5 F-01	**CCGT09T302F-01**		●	●			<0.008	0.375	0.156	0.173
		CCGT 32.51 F-01	CCGT09T304F-01		●	●			<0.016	0.375	0.156	0.173
Precision finishing	**01**	**CCGT 21.50.5-01**	**CCGT060202-01**					●	0.008	0.250	0.094	0.109
		**CCGT 32.50.5-01**	**CCGT09T302-01**					●	0.008	0.375	0.156	0.173
Finishing (sharp edge)	**JS**	**CCGT 4.51.80 F-JS**	**CCGT03X101F-JS**		●	●			<0.004	0.141	0.055	0.075
		CCGT 4.51.80.5 F-JS	CCGT03X102F-JS		●	●			<0.008	0.141	0.055	0.075
		CCGT 4.51.81 F-JS	CCGT03X104F-JS		●	●			<0.016	0.141	0.055	0.075
		CCGT 5.52.20 F-JS	**CCGT04T101F-JS**		●	●			<0.004	0.172	0.070	0.087
		CCGT 5.52.20.5 F-JS	CCGT04T102F-JS		●	●			<0.008	0.172	0.070	0.087
		CCGT 5.52.21 F-JS	CCGT04T104F-JS		●	●			<0.016	0.172	0.070	0.087
	JS	**CCGT 21.5V FN-JS**	**CCGT060200FN-JS**		●	●	●		<0.001	0.250	0.094	0.109
		CCGT 21.50 FN-JS	CCGT060201FN-JS		●	●	●		<0.004	0.250	0.094	0.109
		CCGT 21.50.5 FN-JS	CCGT060202FN-JS		●	●	●		<0.008	0.250	0.094	0.109
		CCGT 21.51 FN-JS	CCGT060204FN-JS		●	●	●		<0.016	0.250	0.094	0.109
		CCGT 32.5V FN-JS	**CCGT09T300FN-JS**		●	●	●		<0.001	0.375	0.156	0.173
		CCGT 32.50 FN-JS	CCGT09T301FN-JS		●	●	●		<0.004	0.375	0.156	0.173
		CCGT 32.50.5 FN-JS	CCGT09T302FN-JS		●	●	●		<0.008	0.375	0.156	0.173
		CCGT 32.51 FN-JS	CCGT09T304FN-JS		●	●	●		<0.016	0.375	0.156	0.173
Finishing	**JS**	**CCGT 4.51.80 JS**	**CCGT03X101-JS**				●		<0.004	0.141	0.055	0.075
		CCGT 4.51.80.5 JS	CCGT03X102-JS				●		<0.008	0.141	0.055	0.075
		CCGT 4.51.81 JS	CCGT03X104-JS				●		<0.016	0.141	0.055	0.075
		CCGT 5.52.20 JS	**CCGT04T101-JS**				●		<0.004	0.172	0.070	0.087
		CCGT 5.52.20.5 JS	CCGT04T102-JS				●		<0.008	0.172	0.070	0.087
		CCGT 5.52.21 JS	CCGT04T104-JS				●		<0.016	0.172	0.070	0.087
	JS	**CCGT 21.50 N-JS**	**CCGT060201N-JS**	●					0.004	0.250	0.094	0.109
		CCGT 21.50.5 N-JS	CCGT060202N-JS	●					0.008	0.250	0.094	0.109
		CCGT 21.51 N-JS	CCGT060204N-JS	●					0.016	0.250	0.094	0.109
		CCGT 32.50 N-JS	**CCGT09T301N-JS**	●					0.004	0.375	0.156	0.173
		CCGT 32.50.5 N-JS	CCGT09T302N-JS	●					0.008	0.375	0.156	0.173
		CCGT 32.51 N-JS	CCGT09T304N-JS	●					0.016	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

●: Line up

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

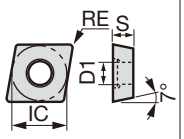
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

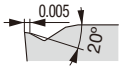
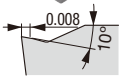
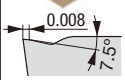
CC



Rhombic, 80°
with hole
Positive 7°

P	Steel	●ɔ ɔ✠ ɔ ɔ✠ ɔ ●ɔ ●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
M	Stainless	●ɔ ● ● ɔ ●ɔ ɔ ●ɔ ●ɔ ɔ ●ɔ ●
K	Cast iron	●ɔ ɔ ●ɔ ●ɔ
N	Non-ferrous	●
S	Superalloy	● ɔ ●
H	Hard material	

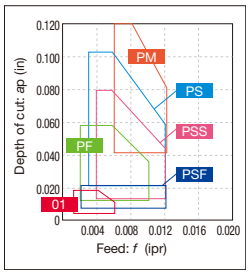


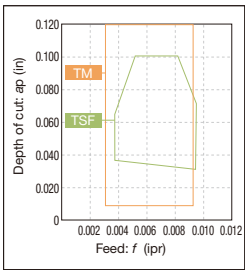
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8005	AH8015	AH6225	AH725	SH7025	SH725	GH730	J740	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing	PSF	CCMT 21.50.5 PSF	CCMT060202-PSF							●					●	●		0.008	0.250	0.094	0.109
		CCMT 21.51 PSF	CCMT060204-PSF	●	●		●	●		●					●	●		0.016	0.250	0.094	0.109
		CCMT 32.50.5 PSF	CCMT09T302-PSF							●						●		0.008	0.375	0.156	0.173
		CCMT 32.51 PSF	CCMT09T304-PSF	●	●		●	●		●					●	●		0.016	0.375	0.156	0.173
		CCMT 32.52 PSF	CCMT09T308-PSF	●	●					●					●	●		0.031	0.375	0.156	0.173
	PF	CCMT 21.50.5 PF	CCMT060202-PF										●		●	●		0.008	0.250	0.094	0.109
		CCMT 21.51 PF	CCMT060204-PF						●				●		●	●		0.016	0.250	0.094	0.109
		CCMT 21.52 PF	CCMT060208-PF												●	●		0.031	0.250	0.094	0.109
		CCMT 32.50.5 PF	CCMT09T302-PF										●			●		0.008	0.375	0.156	0.173
		CCMT 32.51 PF	CCMT09T304-PF										●		●	●		0.016	0.375	0.156	0.173
		CCMT 32.52 PF	CCMT09T308-PF		●										●	●		0.031	0.375	0.156	0.173
	TSF	CCMT 21.50.5 TSF	CCMT060202-TSF	●	●	●		●	●							●		0.008	0.250	0.094	0.109
		CCMT 21.51 TSF	CCMT060204-TSF	●	●	●		●	●							●		0.016	0.250	0.094	0.109
		CCMT 21.52 TSF	CCMT060208-TSF	●	●	●		●	●							●		0.031	0.250	0.094	0.109
		CCMT 32.50.5 TSF	CCMT09T302-TSF	●	●	●		●	●							●		0.008	0.375	0.156	0.173
		CCMT 32.51 TSF	CCMT09T304-TSF	●	●	●		●	●							●		0.016	0.375	0.156	0.173
		CCMT 32.52 TSF	CCMT09T308-TSF	●	●	●		●	●							●		0.031	0.375	0.156	0.173
Finishing (sharp edge)	J10	CCGT 21.5V FR-J10	CCGT060200FR-J10								●	●		●			●	0.001	0.250	0.094	0.109
		CCGT 21.5V FL-J10	CCGT060200FL-J10									●		●			●	0.001	0.250	0.094	0.109
		CCGT 21.50 FR-J10	CCGT060201FR-J10								●	●		●		●	●	0.004	0.250	0.094	0.109
		CCGT 21.50 FL-J10	CCGT060201FL-J10									●		●			●	0.004	0.250	0.094	0.109
		CCGT 21.50.5 FR-J10	CCGT060202FR-J10								●	●		●		●	●	0.008	0.250	0.094	0.109
		CCGT 21.50.5 FL-J10	CCGT060202FL-J10								●	●		●		●	●	0.008	0.250	0.094	0.109
		CCGT 32.5V FR-J10	CCGT09T300FR-J10								●	●		●			●	0.001	0.375	0.156	0.173
		CCGT 32.5V FL-J10	CCGT09T300FL-J10									●		●			●	0.001	0.375	0.156	0.173
		CCGT 32.50 FR-J10	CCGT09T301FR-J10								●	●		●			●	0.004	0.375	0.156	0.173
		CCGT 32.50 FL-J10	CCGT09T301FL-J10									●		●			●	0.004	0.375	0.156	0.173
		CCGT 32.50.5 FR-J10	CCGT09T302FR-J10								●	●		●			●	0.008	0.375	0.156	0.173
		CCGT 32.50.5 FL-J10	CCGT09T302FL-J10								●	●		●			●	0.008	0.375	0.156	0.173
		CCGT 32.51 FR-J10	CCGT09T304FR-J10									●						0.016	0.375	0.156	0.173

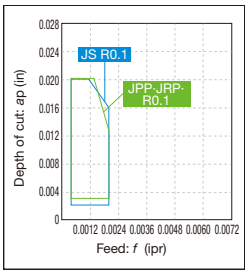
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

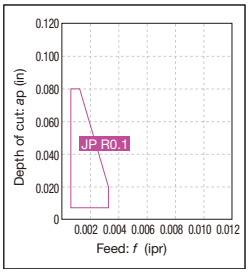
● : Line up

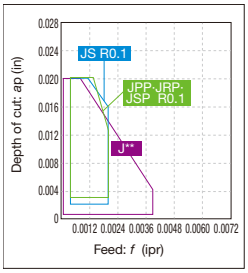
Chip control range











*Chip control range with typical R0.1

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

Insert POSITIVE TYPE

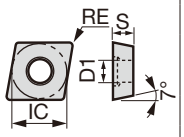
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



Rhombic, 80° with hole Positive 7°

P	Steel	●ɔ	●ɔ	●ɔ	●ɔ	●			●ɔ				●ɔ				●	ɔ	
M	Stainless	●ɔ	●ɔ	●ɔ	●ɔ	●											●	ɔ	
K	Cast iron				●ɔ	●			●ɔ				●ɔ				●		
N	Non-ferrous																●		
S	Superalloy			●ɔ		●													
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7205	Coated SH725	Coated SH730	Coated GH330	Coated GH110	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	**W08**	CCGT 4.51.8V FR-W08	CCGT03X100FL-W08	●	●								0.001	0.141	0.055	0.075
		CCGT 4.51.8V FL-W08	CCGT03X100FR-W08		●								0.001	0.141	0.055	0.075
		CCGT 4.51.80 FR-W08	CCGT03X101FL-W08	●	●								0.004	0.141	0.055	0.075
		CCGT 4.51.80 FL-W08	CCGT03X101FR-W08		●								0.004	0.141	0.055	0.075
		CCGT4.51.80.5FR-W08	CCGT03X102FL-W08	●	●								0.008	0.141	0.055	0.075
		CCGT4.51.80.5FL-W08	CCGT03X102FR-W08	●	●								0.008	0.141	0.055	0.075
		CCGT 4.51.81 FR-W08	CCGT03X104FL-W08	●	●								0.016	0.141	0.055	0.075
		CCGT 4.51.81 FL-W08	CCGT03X104FR-W08	●	●								0.016	0.141	0.055	0.075
		CCGT 5.52.2V FR-W08	CCGT04T100FL-W08	●	●								0.001	0.172	0.070	0.087
		CCGT 5.52.2V FL-W08	CCGT04T100FR-W08		●								0.001	0.172	0.070	0.087
		CCGT 5.52.20 FR-W08	CCGT04T101FL-W08	●	●								0.004	0.172	0.070	0.087
		CCGT 5.52.20 FL-W08	CCGT04T101FR-W08		●								0.004	0.172	0.070	0.087
		CCGT5.52.20.5FR-W08	CCGT04T102FL-W08	●	●								0.008	0.172	0.070	0.087
		CCGT5.52.20.5FL-W08	CCGT04T102FR-W08	●	●								0.008	0.172	0.070	0.087
		CCGT 5.52.21 FR-W08	CCGT04T104FL-W08	●	●								0.016	0.172	0.070	0.087
		CCGT 5.52.21 FL-W08	CCGT04T104FR-W08	●	●								0.016	0.172	0.070	0.087
Finishing	**W08**	CCGT 4.51.8V R-W08	CCGT03X100R-W08			●					●		0.001	0.141	0.055	0.075
		CCGT 4.51.8V L-W08	CCGT03X100L-W08			●					●		0.001	0.141	0.055	0.075
		CCGT 4.51.80 R-W08	CCGT03X101R-W08			●					●		0.004	0.141	0.055	0.075
		CCGT 4.51.80 L-W08	CCGT03X101L-W08			●					●		0.004	0.141	0.055	0.075
		CCGT 4.51.80.5 R-W08	CCGT03X102R-W08			●					●		0.008	0.141	0.055	0.075
		CCGT 4.51.80.5 L-W08	CCGT03X102L-W08			●					●		0.008	0.141	0.055	0.075
		CCGT 4.51.81 R-W08	CCGT03X104R-W08			●					●		0.016	0.141	0.055	0.075
		CCGT 4.51.81 L-W08	CCGT03X104L-W08			●					●		0.016	0.141	0.055	0.075
		CCGT 5.52.2V R-W08	CCGT04T100R-W08			●					●		0.001	0.172	0.070	0.087
		CCGT 5.52.2V L-W08	CCGT04T100L-W08			●					●		0.001	0.172	0.070	0.087
		CCGT 5.52.20 R-W08	CCGT04T101R-W08			●					●		0.004	0.172	0.070	0.087
		CCGT 5.52.20 L-W08	CCGT04T101L-W08			●					●		0.004	0.172	0.070	0.087
		CCGT 5.52.20.5 R-W08	CCGT04T102R-W08			●					●		0.008	0.172	0.070	0.087
		CCGT 5.52.20.5 L-W08	CCGT04T102L-W08			●					●		0.008	0.172	0.070	0.087
		CCGT 5.52.21 R-W08	CCGT04T104R-W08			●					●		0.016	0.172	0.070	0.087
		CCGT 5.52.21 L-W08	CCGT04T104L-W08			●					●		0.016	0.172	0.070	0.087
	W15	CCGT 21.5V R-W15	CCGT060200R-W15								●		0.001	0.250	0.094	0.109
		CCGT 21.5V L-W15	CCGT060200L-W15							●	●		0.001	0.250	0.094	0.109
		CCGT 21.50.5 R-W15	CCGT060202R-W15							●	●		0.008	0.250	0.094	0.109
		CCGT 21.50.5 L-W15	CCGT060202L-W15						●	●	●		0.008	0.250	0.094	0.109
		CCGT 21.51 R-W15	CCGT060204R-W15				●			●	●		0.016	0.250	0.094	0.109
		CCGT 21.51 L-W15	CCGT060204L-W15				●	●	●	●	●	●	0.016	0.250	0.094	0.109

●: Line up

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

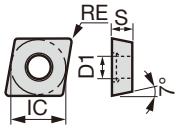
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

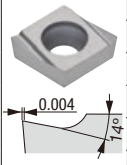
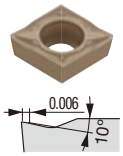
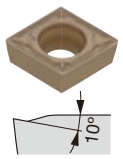
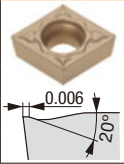
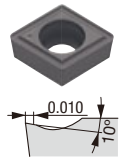
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Rhombic, 80° with hole Positive 7°

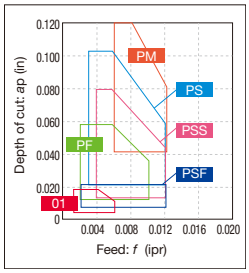
P	Steel	●◐✠◐ ◐✠✠ ◐ ●◐ ●◐ ◐ ●◐ ● ●◐ ●◐ ●◐ ◐ ●◐ ●
M	Stainless	●◐ ● ● ◐ ●◐ ◐ ●◐ ✠ ◐ ●◐ ◐ ●◐ ● ●
K	Cast iron	●◐ ● ◐ ●◐ ◐ ◐ ●◐ ◐ ●◐ ● ●◐ ●◐ ●◐ ◐ ●◐ ●
N	Non-ferrous	●
S	Superalloy	● ◐ ● ●◐ ●
H	Hard material	

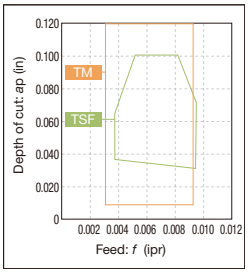


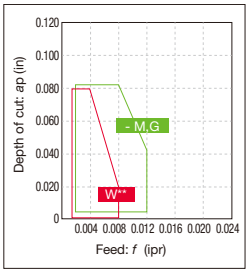
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH8005	AH8015	AH6225	AH6235	AH725	AH120	GH730	GH330	GH110	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing	**W20**	**CCGT 32.50.5 R-W20**	**CCGT09T302R-W20**																		●	●	0.008	0.375	0.156	0.173
		CCGT 32.50.5 L-W20	CCGT09T302L-W20																●		●	●	0.008	0.375	0.156	0.173
		CCGT 32.51 L-W20	CCGT09T304R-W20																		●		0.016	0.375	0.156	0.173
		CCGT 32.51 R-W20	CCGT09T304L-W20														●	●	●		●	●	0.016	0.375	0.156	0.173
		CCGT 32.52 R-W20	CCGT09T308R-W20																		●		0.031	0.375	0.156	0.173
		CCGT 32.52 L-W20	CCGT09T308L-W20																●		●		0.031	0.375	0.156	0.173
	PSS	**CCMT 21.51 PSS**	**CCMT060204-PSS**	●	●	●				●	●	●	●	●					●		●		0.016	0.250	0.094	0.109
		CCMT 21.52 PSS	CCMT060208-PSS	●	●	●				●	●	●	●	●					●		●		0.031	0.250	0.094	0.109
		CCMT 32.51 PSS	CCMT09T304-PSS	●	●	●				●	●	●	●	●					●		●		0.016	0.375	0.156	0.173
		CCMT 32.52 PSS	CCMT09T308-PSS	●	●	●				●	●	●	●	●					●		●		0.031	0.375	0.156	0.173
		CCMT 431 PSS	CCMT120404-PSS	●	●	●						●	●	●									0.016	0.500	0.187	0.217
		CCMT 432 PSS	CCMT120408-PSS	●	●	●						●	●	●									0.031	0.500	0.187	0.217
		CCMT 433 PSS	CCMT120412-PSS	●	●	●						●	●	●									0.047	0.500	0.187	0.217
	PS	**CCMT 21.50.5 PS**	**CCMT060202-PS**	●	●	●				●	●	●	●	●	●	●			●	●	●		0.008	0.250	0.094	0.109
		CCMT 21.51 PS	CCMT060204-PS	●	●	●				●	●	●	●	●	●	●			●	●	●		0.016	0.250	0.094	0.109
		CCMT 21.52 PS	CCMT060208-PS	●	●	●				●	●	●	●	●	●	●			●	●	●		0.031	0.250	0.094	0.109
		CCMT 32.50.5 PS	CCMT09T302-PS	●	●	●				●	●	●	●	●	●	●			●	●	●		0.008	0.375	0.156	0.173
		CCMT 32.51 PS	CCMT09T304-PS	●	●	●				●	●	●	●	●	●	●			●	●	●		0.016	0.375	0.156	0.173
		CCMT 32.52 PS	CCMT09T308-PS	●	●	●				●	●	●	●	●	●	●			●	●	●		0.031	0.375	0.156	0.173
		CCMT 431 PS	CCMT120404-PS	●	●	●				●	●	●	●	●									0.016	0.500	0.187	0.217
		CCMT 432 PS	CCMT120408-PS	●	●	●				●	●	●	●	●									0.031	0.500	0.187	0.217
		CCMT 433 PS	CCMT120412-PS	●	●	●						●	●	●									0.047	0.500	0.187	0.217
	TM	**CCMT 21.50.5 TM**	**CCMT060202-TM**	●	●	●					●	●									●		0.008	0.250	0.094	0.109
		CCMT 21.51 TM	CCMT060204-TM	●	●	●					●	●									●		0.016	0.250	0.094	0.109
		CCMT 21.52 TM	CCMT060208-TM	●	●	●					●	●									●		0.031	0.250	0.094	0.109
		CCMT 32.50.5 TM	CCMT09T302-TM	●	●	●					●	●									●		0.008	0.375	0.156	0.173
		CCMT 32.51 TM	CCMT09T304-TM	●	●	●					●	●									●		0.016	0.375	0.156	0.173
		CCMT 32.52 TM	CCMT09T308-TM	●	●	●					●	●									●		0.031	0.375	0.156	0.173
	CM	**CCMT 21.51 CM**	**CCMT060204-CM**				●	●	●														0.016	0.250	0.094	0.109
		CCMT 21.52 CM	CCMT060208-CM				●	●	●														0.031	0.250	0.094	0.109
		CCMT 32.51 CM	CCMT09T304-CM				●	●	●														0.016	0.375	0.156	0.173
		CCMT 32.52 CM	CCMT09T308-CM				●	●	●														0.031	0.375	0.156	0.173
		CCMT 32.53 CM	CCMT09T312-CM						●														0.047	0.375	0.156	0.173
		CCMT 431 CM	CCMT120404-CM						●														0.016	0.500	0.187	0.217
		CCMT 432 CM	CCMT120408-CM						●														0.031	0.500	0.187	0.217

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

Insert POSITIVE TYPE

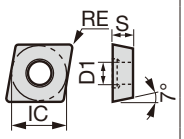
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

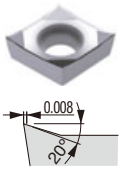
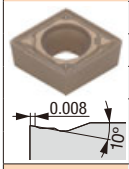
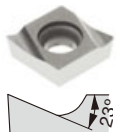
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Rhombic, 80° with hole Positive 7°

		T9215	T9225	T5115	SH725	NS9530	TH10	KS05F
P	Steel	●ᑕ	●ᑕ✠		●ᑕ	●ᑕ	●	
M	Stainless	●ᑕ			●ᑕ		●	
K	Cast iron	●ᑕ		ᑕ		●ᑕ	●	●
N	Non-ferrous						●	●
S	Superalloy							●
H	Hard material							



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T5115	Coated SH725	Cermet NS9530	Uncoated TH10	Uncoated KS05F	Dimension (in) RE	IC	S	D1
Finishing to light cutting for non-ferrous metal	**AL**	**CCGT060201-AL**	**CCGT060201-AL**				●			●	0.004	0.250	0.094	0.109
		**CCGT 21.50.5 AL**	CCGT060202-AL				●			●	0.008	0.250	0.094	0.109
		CCGT 21.51 AL	CCGT060204-AL							●	0.016	0.250	0.094	0.109
		CCGT 32.50.5 AL	**CCGT09T302-AL**				●			●	0.008	0.375	0.156	0.173
		CCGT 32.51 AL	CCGT09T304-AL				●			●	0.016	0.375	0.156	0.173
		CCGT 32.52 AL	CCGT09T308-AL							●	0.031	0.375	0.156	0.173
		CCGT 430.5 AL	**CCGT120402-AL**							●	0.008	0.500	0.187	0.217
		CCGT 431 AL	CCGT120404-AL							●	0.016	0.500	0.187	0.217
		CCGT 432 AL	CCGT120408-AL							●	0.031	0.500	0.187	0.217
	SW	**CCMT 21.51 SW**	**CCMT060204-SW**	●	●			●			0.016	0.250	0.094	0.109
		CCMT 21.52 SW	CCMT060208-SW	●	●			●			0.031	0.250	0.094	0.109
		CCMT 32.51 SW	**CCMT09T304-SW**	●	●			●			0.016	0.375	0.156	0.173
		CCMT 32.52 SW	CCMT09T308-SW	●	●			●			0.031	0.375	0.156	0.173
		*Wiper												
	All-round	**CCGT 21.50.5**	**CCGT060202**					●			0.008	0.250	0.094	0.109
		CCGT 21.51	CCGT060204					●			0.016	0.250	0.094	0.109
		CCGT 32.50.5	**CCGT09T302**					●			0.008	0.375	0.156	0.173
		CCGT 32.51	CCGT09T304					●			0.016	0.375	0.156	0.173
		CCGT 32.52	CCGT09T308					●			0.031	0.375	0.156	0.173
	Angular	**CCGT 21.5V R**	**CCGT060200R**						●		0.001	0.250	0.094	0.109
		CCGT 21.50.5 R	CCGT060202R						●		0.008	0.250	0.094	0.109
		CCGT 21.50.5 L	CCGT060202L						●		0.008	0.250	0.094	0.109
		CCGT 21.51 L	CCGT060204L						●		0.016	0.250	0.094	0.109
		CCGT 32.50.5 R	**CCGT09T302R**						●		0.008	0.375	0.156	0.173
		CCGT 32.50.5 L	CCGT09T302L						●		0.008	0.375	0.156	0.173
		CCGT 32.51 R	CCGT09T304R						●		0.016	0.375	0.156	0.173
		CCGT 32.51 L	CCGT09T304L						●		0.016	0.375	0.156	0.173
	23	**CCMT 21.50.5-23**	**CCMT060202-23**					●			0.008	0.250	0.094	0.109
		CCMT 21.51-23	CCMT060204-23		●			●			0.016	0.250	0.094	0.109
		CCMT 21.52-23	CCMT060208-23		●						0.031	0.250	0.094	0.109
		CCMT 32.51-23	**CCMT09T304-23**		●			●			0.016	0.375	0.156	0.173
		CCMT 32.52-23	CCMT09T308-23		●			●			0.031	0.375	0.156	0.173
	-	**CCMW 21.51**	**CCMW060204**			●					0.016	0.250	0.094	0.109
		CCMW 21.52	CCMW060208			●					0.031	0.250	0.094	0.109
		CCMW 32.51	**CCMW09T304**			●					0.016	0.375	0.156	0.173
		CCMW 32.52	CCMW09T308			●					0.031	0.375	0.156	0.173

* Please see **L011 - L015** about the adjustment of the machining program for rounding or taper machining when using SW/FW.
Please contact our sales representatives if you have any questions.

●: Line up

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

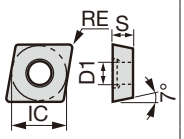
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC



Rhombic, 80°
with hole
Positive 7°

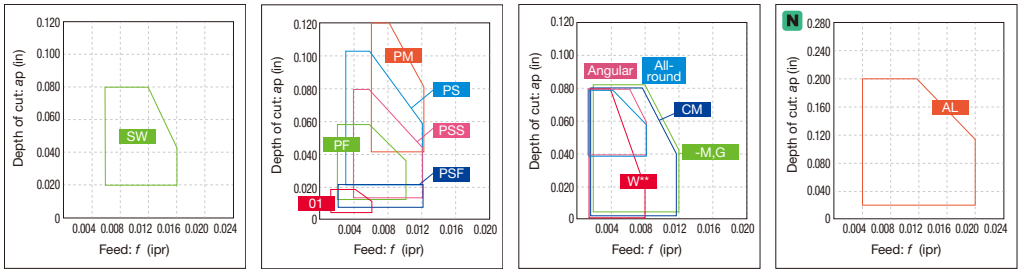
P	Steel	●ᑕ ●ᑕ✠ ᑕ ᑕ✠ ✠ ᑕ ● ●ᑕ ᑕ ● ●ᑕ ●ᑕ ●
M	Stainless	●ᑕ ● ●ᑕ ✠ ᑕ ● ●ᑕ ᑕ ● ●
K	Cast iron	●ᑕ ᑕ ● ●ᑕ ●ᑕ ●
N	Non-ferrous	●
S	Superalloy	● ● ●ᑕ ●
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH6225	AH6235	AH725	AH110	AH120	GH730	GH110	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	CCGW 21.50.5	CCGW060202													●	0.008	0.250	0.094	0.109
		CCGW 21.51	CCGW060204													●	0.016	0.250	0.094	0.109
		CCGW 32.50.5	CCGW09T302													●	0.008	0.375	0.156	0.173
		CCGW 32.51	CCGW09T304										●			●	0.016	0.375	0.156	0.173
		CCGW 32.52	CCGW09T308													●	0.031	0.375	0.156	0.173
Medium cutting	PM	CCMT 21.51 PM	CCMT060204-PM	●	●	●	●	●	●	●	●	●		●	●		0.016	0.250	0.094	0.109
		CCMT 21.52 PM	CCMT060208-PM	●	●	●	●	●	●	●	●	●		●	●		0.031	0.250	0.094	0.109
		CCMT 32.51 PM	CCMT09T304-PM	●	●	●	●	●	●	●	●	●		●	●		0.016	0.375	0.156	0.173
		CCMT 32.52 PM	CCMT09T308-PM	●	●	●	●	●	●	●	●	●		●	●		0.031	0.375	0.156	0.173
		CCMT 32.53 PM	CCMT09T312-PM	●	●	●	●	●	●								0.047	0.375	0.156	0.173
		CCMT 432 PM	CCMT120408-PM			●	●	●	●								0.031	0.500	0.187	0.217
		CCMT 433 PM	CCMT120412-PM			●	●	●	●								0.047	0.500	0.187	0.217
	24	CCMT 21.50.5-24	CCMT060202-24		●										●		0.008	0.250	0.094	0.109
		CCMT 21.51-24	CCMT060204-24	●	●						●				●		0.016	0.250	0.094	0.109
		CCMT 21.52-24	CCMT060208-24	●	●		●				●				●		0.031	0.250	0.094	0.109
		CCMT 32.50.5-24	CCMT09T302-24		●										●		0.008	0.375	0.156	0.173
		CCMT 32.51-24	CCMT09T304-24	●	●						●				●		0.016	0.375	0.156	0.173
		CCMT 32.52-24	CCMT09T308-24	●	●		●				●				●		0.031	0.375	0.156	0.173
		CCMT 432-24	CCMT120408-24	●	●						●				●		0.031	0.500	0.187	0.217

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

Insert POSITIVE TYPE

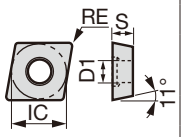
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP



Rhombic, 80° with hole Positive 11°

		Coated							Coated cermet	Cermet	Uncoated
		T9215	T9225	T6215	AH8015	AH6225	AH6235	AH725	GT9530	NS9530	TH10
P	Steel	●ɔ	ɔ✣	ɔ		ɔ✣	✣	ɔ	●ɔ	●ɔ	●
M	Stainless	●ɔ		●	ɔ	●ɔ	✣	ɔ			●
K	Cast iron	●ɔ						ɔ	●ɔ	●ɔ	●
N	Non-ferrous										●
S	Superalloy				ɔ			●			
H	Hard material										



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	PSF	CPMT 21.50.5 PSF	CPMT060202-PSF	0.008	0.250	0.094	0.109
		CPMT 21.51 PSF	CPMT060204-PSF	0.016	0.250	0.094	0.109
		CPMT 2.51.50.5 PSF	CPMT080202-PSF	0.008	0.313	0.094	0.134
		CPMT 2.51.51 PSF	CPMT080204-PSF	0.016	0.313	0.094	0.134
		CPMT 320.5 PSF	CPMT090302-PSF	0.008	0.375	0.125	0.173
		CPMT 321 PSF	CPMT090304-PSF	0.016	0.375	0.125	0.173
		CPMT 32.50.5 PSF	CPMT09T302-PSF	0.008	0.375	0.156	0.173
		CPMT 32.51 PSF	CPMT09T304-PSF	0.016	0.375	0.156	0.173
	PF	CPMT 320.5 PF	CPMT090302-PF	0.008	0.375	0.125	0.173
		CPMT 321 PF	CPMT090304-PF	0.016	0.375	0.125	0.173
	TSF	CPMT 21.50.5 TSF	CPMT060202-TSF	0.008	0.250	0.094	0.109
		CPMT 21.51 TSF	CPMT060204-TSF	0.016	0.250	0.094	0.109
		CPMT 21.52 TSF	CPMT060208-TSF	0.031	0.250	0.094	0.109
		CPMT 32.50.5 TSF	CPMT09T302-TSF	0.008	0.375	0.156	0.173
		CPMT 32.51 TSF	CPMT09T304-TSF	0.016	0.375	0.156	0.173
		CPMT 32.52 TSF	CPMT09T308-TSF	0.031	0.375	0.156	0.173
	W15	CPGT 730.5 L-W15	CPGT050202L-W15	0.008	0.219	0.094	0.098
		CPGT 731 L-W15	CPGT050204L-W15	0.016	0.219	0.094	0.098
		CPGT 2.51.50.5 R-W15	CPGT080202R-W15	0.008	0.313	0.094	0.134
		CPGT 2.51.50.5 L-W15	CPGT080202L-W15	0.008	0.313	0.094	0.134
		CPGT 2.51.51 R-W15	CPGT080204R-W15	0.016	0.313	0.094	0.134
		CPGT 2.51.51 L-W15	CPGT080204L-W15	0.016	0.313	0.094	0.134
	W20	CPGT 320.5 R-W20	CPGT090302R-W20	0.008	0.375	0.125	0.173
		CPGT 320.5 L-W20	CPGT090302L-W20	0.008	0.375	0.125	0.173
		CPGT 321 R-W20	CPGT090304R-W20	0.016	0.375	0.125	0.173
		CPGT 321 L-W20	CPGT090304L-W20	0.016	0.375	0.125	0.173
Finishing to medium cutting	PSS	CPMT 21.51 PSS	CPMT060204-PSS	0.016	0.250	0.094	0.109
		CPMT 2.51.51 PSS	CPMT080204-PSS	0.016	0.313	0.094	0.134
		CPMT 2.51.52 PSS	CPMT080208-PSS	0.031	0.313	0.094	0.134
		CPMT 321 PSS	CPMT090304-PSS	0.016	0.375	0.125	0.173
		CPMT 322 PSS	CPMT090308-PSS	0.031	0.375	0.125	0.173
		CPMT 32.51 PSS	CPMT09T304-PSS	0.016	0.375	0.156	0.173
		CPMT 32.52 PSS	CPMT09T308-PSS	0.031	0.375	0.156	0.173

● : Line up

Reference pages: Internal toolholder → D022 -

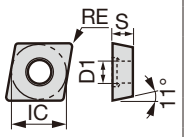
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CP

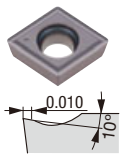


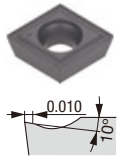
Rhombic, 80°
with hole
Positive 11°

P	Steel	●◐◐✠ ◐ ◐✠ ✠ ◐ ◐● ◐ ●◐●◐ ●
M	Stainless	●◐ ● ● ◐ ◐● ◐ ✠ ◐ ◐● ◐ ●
K	Cast iron	●◐ ● ●◐ ◐ ◐ ◐● ◐ ●◐●◐ ●
N	Non-ferrous	●
S	Superalloy	● ◐ ◐ ●◐
H	Hard material	



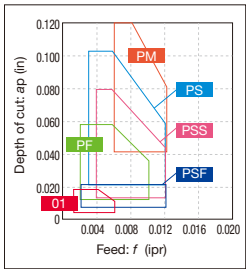
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH120	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**PS**	CPMT 21.50.5 PS	CPMT060202-PS	●	●	●				●	●	●			●	●	●			●		0.008	0.250	0.094	0.109
		CPMT 21.51 PS	CPMT060204-PS	●	●	●				●	●	●			●	●	●	●	●	●		0.016	0.250	0.094	0.109
		CPMT 21.52 PS	CPMT060208-PS	●	●	●					●	●								●		0.031	0.250	0.094	0.109
		CPMT 2.51.50.5 PS	CPMT080202-PS	●	●	●						●	●		●			●	●	●		0.008	0.313	0.094	0.134
		CPMT 2.51.51 PS	CPMT080204-PS	●	●	●						●	●		●			●	●	●		0.016	0.313	0.094	0.134
		CPMT 2.51.52 PS	CPMT080208-PS	●	●	●						●	●		●			●	●	●		0.031	0.313	0.094	0.134
		CPMT 321 PS	CPMT090304-PS	●	●	●						●	●		●			●	●	●		0.016	0.375	0.125	0.173
		CPMT 322 PS	CPMT090308-PS	●	●	●						●	●		●			●	●	●	●	0.031	0.375	0.125	0.173
		CPMT 32.50.5 PS	CPMT09T302-PS	●	●	●				●	●	●			●					●		0.008	0.375	0.156	0.173
		CPMT 32.51 PS	CPMT09T304-PS	●	●	●				●	●	●			●					●		0.016	0.375	0.156	0.173
		CPMT 32.52 PS	CPMT09T308-PS	●	●	●				●	●	●			●	●				●		0.031	0.375	0.156	0.173
	TM	CPMT 21.50.5 TM	CPMT060202-TM	●	●	●					●	●								●		0.008	0.250	0.094	0.109
		CPMT 21.51 TM	CPMT060204-TM	●	●	●					●	●								●		0.016	0.250	0.094	0.109
		CPMT 21.52 TM	CPMT060208-TM	●	●	●					●	●								●		0.031	0.250	0.094	0.109
		CPMT 32.50.5 TM	CPMT09T302-TM	●	●	●					●	●								●		0.008	0.375	0.156	0.173
		CPMT 32.51 TM	CPMT09T304-TM	●	●	●					●	●								●		0.016	0.375	0.156	0.173
		CPMT 32.52 TM	CPMT09T308-TM	●	●	●					●	●								●		0.031	0.375	0.156	0.173
	CM	CPMT 21.51 CM	CPMT060204-CM						●													0.016	0.250	0.094	0.109
		CPMT 21.52 CM	CPMT060208-CM						●													0.031	0.250	0.094	0.109
		CPMT 2.51.51 CM	CPMT080204-CM						●													0.016	0.313	0.094	0.134
		CPMT 2.51.52 CM	CPMT080208-CM						●													0.031	0.313	0.094	0.134
		CPMT 321 CM	CPMT090304-CM				●	●	●													0.016	0.375	0.125	0.173
		CPMT 322 CM	CPMT090308-CM				●	●	●													0.031	0.375	0.125	0.173
		CPMT 32.51 CM	CPMT09T304-CM				●	●	●													0.016	0.375	0.156	0.173
		CPMT 32.52 CM	CPMT09T308-CM				●	●	●													0.031	0.375	0.156	0.173
		CPMT 32.53 CM	CPMT09T312-CM						●													0.047	0.375	0.156	0.173
		CPMT 432 CM	CPMT120408-CM						●													0.031	0.500	0.187	0.217
		CPMT 433 CM	CPMT120412-CM						●													0.047	0.500	0.187	0.217
	All-round	CPMT 432	CPMT120408							●	●			●								0.031	0.500	0.187	0.217

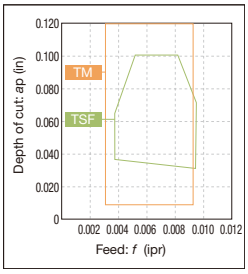


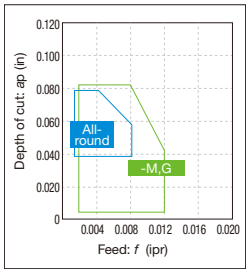


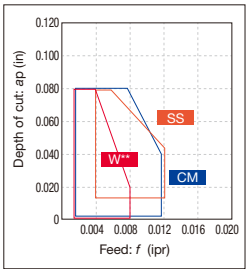
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D022 -

Insert POSITIVE TYPE / DOUBLE SIDED

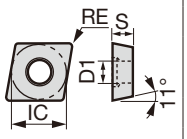
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP



Rhombic, 80° with hole Positive 11°

P	Steel	●ɔ	ɔ✣	ɔ		ɔ✣	✣	ɔ							●ɔ					
M	Stainless	●ɔ		●		●ɔ	✣	ɔ												
K	Cast iron	●ɔ			ɔ			ɔ							●ɔ					
N	Non-ferrous																			
S	Superalloy							●												
H	Hard material																			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T5115	AH6225	AH6235	AH725	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	CPMW 2.51.51	CPMW080204				●					0.016	0.313	0.094	0.134
		CPMW 2.51.52	CPMW080208				●					0.031	0.313	0.094	0.134
		CPMW 321	CPMW090304				●					0.016	0.375	0.125	0.173
		CPMW 322	CPMW090308				●					0.031	0.375	0.125	0.173
Medium cutting	PM	CPMT 21.51 PM	CPMT060204-PM			●		●	●	●		0.016	0.250	0.094	0.109
		CPMT 21.52 PM	CPMT060208-PM		●	●		●	●	●		0.031	0.250	0.094	0.109
		CPMT 321 PM	CPMT090304-PM		●	●		●	●	●	●	0.016	0.375	0.125	0.173
		CPMT 322 PM	CPMT090308-PM		●	●		●	●	●	●	0.031	0.375	0.125	0.173
	24	CPMT 2.51.51-24	CPMT080204-24	●								0.016	0.313	0.094	0.134
		CPMT 2.51.52-24	CPMT080208-24		●							0.031	0.313	0.094	0.134
		CPMT 322-24	CPMT090308-24		●							0.031	0.375	0.125	0.173
		CPMT 432-24	CPMT120408-24								●	0.031	0.500	0.187	0.217
		CPMT 53.52-24	CPMT160508-24		●						●	0.031	0.625	0.219	0.217
		CPMT 53.53-24	CPMT160512-24								●	0.047	0.625	0.219	0.217

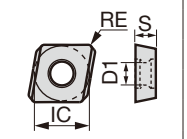
● : Line up

CX



Rhombic, 80° with hole

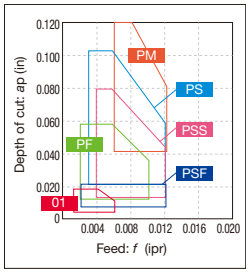
P	Steel	●ɔ	ɔ✣		ɔ															
M	Stainless	●ɔ		ɔ	ɔ															
K	Cast iron	●ɔ			ɔ															
N	Non-ferrous																			
S	Superalloy			ɔ	●															
H	Hard material																			

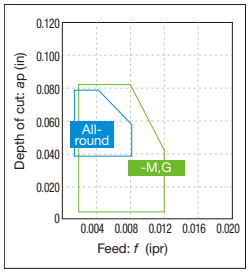


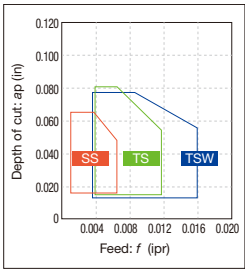
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	AH8015	AH725	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	TS	CXMU 220.5R TS	CXMU060302R-TS	●	●	●	●	0.008	0.250	0.125	0.106
		CXMU 220.5L TS	CXMU060302L-TS	●	●	●	●	0.008	0.250	0.125	0.106
		CXMU 221R TS	CXMU060304R-TS	●	●	●	●	0.016	0.250	0.125	0.106
		CXMU 221L TS	CXMU060304L-TS	●	●	●	●	0.016	0.250	0.125	0.106
		CXMU 222R TS	CXMU060308R-TS	●	●	●	●	0.031	0.250	0.125	0.106
		CXMU 222L TS	CXMU060308L-TS	●	●	●	●	0.031	0.250	0.125	0.106

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: CPM*... : Internal toolholder → D022 -
CXMU...: Internal toolholder → D025 -

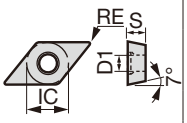
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

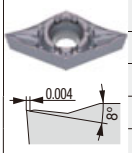
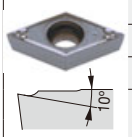
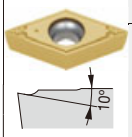
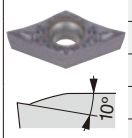
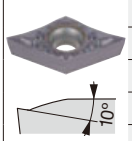
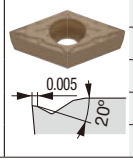
DC

Rhombic, 55° with hole Positive 7°



P	Steel	●ɔ ɔ✠ ɔ ɔ●ɔ●ɔ●ɔ●ɔ ●ɔ●ɔ ɔ ɔ●ɔ
M	Stainless	●ɔ ● ɔ ɔ ɔ●ɔ●ɔ●ɔ●ɔ
K	Cast iron	●ɔ ɔ ●ɔ●ɔ ɔ●ɔ
N	Non-ferrous	
S	Superalloy	● ɔ ɔ ● ɔ●ɔ
H	Hard material	

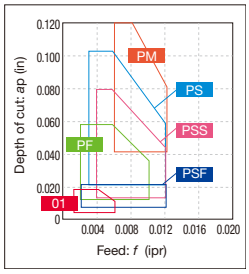


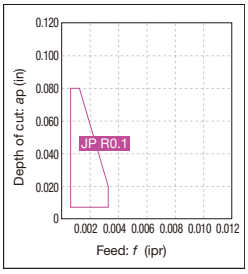
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	AH8005	AH8015	AH905	AH725	SH7025	SH725	SH730	J740	Coated cermet GT9530	J9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Precision finishing (sharp edge)	JP	DCGT 21.5V FN-JP	DCGT070200FN-JP							●	●						<0.0012	0.250	0.094	0.109
		DCGT 21.50 FN-JP	DCGT070201FN-JP							●	●						<0.004	0.250	0.094	0.109
		DCGT 21.50.5 FN-JP	DCGT070202FN-JP							●	●						<0.008	0.250	0.094	0.109
		DCGT 32.5V FN-JP	DCGT11T300FN-JP							●	●						<0.0012	0.375	0.156	0.173
		DCGT 32.50 FN-JP	DCGT11T301FN-JP							●	●						<0.004	0.375	0.156	0.173
		DCGT 32.50.5 FN-JP	DCGT11T302FN-JP							●	●						<0.008	0.375	0.156	0.173
	01	DCGT 21.50.5 F-01	DCGT070202F-01							●	●						<0.008	0.250	0.094	0.109
		DCGT 21.51 F-01	DCGT070204F-01							●	●						<0.016	0.250	0.094	0.109
		DCGT 32.50.5 F-01	DCGT11T302F-01							●	●						<0.008	0.375	0.156	0.173
		DCGT 32.51 F-01	DCGT11T304F-01							●	●						<0.016	0.375	0.156	0.173
Precision finishing	01	DCGT 21.50.5-01	DCGT070202-01										●		●		0.008	0.250	0.094	0.109
		DCGT 32.50.5 01	DCGT11T302-01										●				0.008	0.375	0.156	0.173
Finishing (sharp edge)	JS	DCGT 21.5V FN-JS	DCGT070200FN-JS							●	●	●					<0.0012	0.250	0.094	0.109
		DCGT 21.50 FN-JS	DCGT070201FN-JS							●	●	●					<0.004*	0.250	0.094	0.109
		DCGT 21.50.5 FN-JS	DCGT070202FN-JS							●	●	●					<0.008*	0.250	0.094	0.109
		DCGT 32.5V FN-JS	DCGT11T300FN-JS							●	●	●					<0.0012	0.375	0.156	0.173
		DCGT 32.50 FN-JS	DCGT11T301FN-JS							●	●	●					<0.004*	0.375	0.156	0.173
		DCGT 32.50.5 FN-JS	DCGT11T302FN-JS							●	●	●					<0.008*	0.375	0.156	0.173
		DCGT 32.51 FN-JS	DCGT11T304FN-JS							●	●	●					<0.016*	0.375	0.156	0.173
Finishing	JS	DCGT 21.50 N-JS	DCGT070201N-JS						●								0.004	0.250	0.094	0.109
		DCGT 21.50.5 N-JS	DCGT070202N-JS						●								0.008	0.250	0.094	0.109
		DCGT 32.50 N-JS	DCGT11T301N-JS						●								0.004	0.375	0.156	0.173
		DCGT 32.50.5 N-JS	DCGT11T302N-JS						●								0.008	0.375	0.156	0.173
		DCGT 32.51 N-JS	DCGT11T304N-JS						●								0.016	0.375	0.156	0.173
	PSF	DCMT 21.50.5 PSF	DCMT070202-PSF						●					●		●	0.008	0.250	0.094	0.109
		DCMT 21.51 PSF	DCMT070204-PSF	●	●				●					●		●	0.016	0.250	0.094	0.109
		DCMT 32.50.5 PSF	DCMT11T302-PSF						●					●		●	0.008	0.375	0.156	0.173
		DCMT 32.51 PSF	DCMT11T304-PSF	●	●	●	●	●	●					●		●	0.016	0.375	0.156	0.173
		DCMT 32.52 PSF	DCMT11T308-PSF	●	●	●	●	●	●								0.031	0.375	0.156	0.173

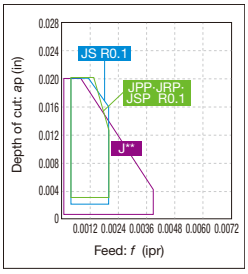
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range







*Chip control range with typical R0.1

Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

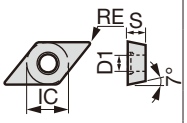
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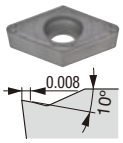
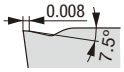
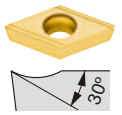
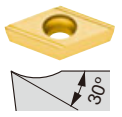
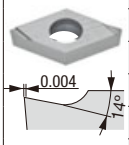
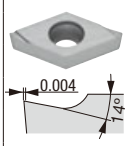
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

		T9215	T9225	T6215	AH8015	AH6225	SH7025	SH725	J740	GH730	GH330	GT9530	J9530	NS9530	TH10
P	Steel	●ɔ	ɔ✠	ɔ		ɔ✠	●ɔ	●ɔ	●ɔ	ɔ	●ɔ	●ɔ	●ɔ		●ɔ		●
M	Stainless	●ɔ		●	ɔ	●ɔ	●ɔ	●ɔ	●ɔ	ɔ	●ɔ						●
K	Cast iron	●ɔ								ɔ	●ɔ	●ɔ	●ɔ		●ɔ		●
N	Non-ferrous																●
S	Superalloy				ɔ												
H	Hard material																



Application	Chipbreaker	Designation Inch	Designation Metric	Coated										Coated cermet		Cermet	Uncoated	Dimension (in)			
				T9215	T9225	T6215	AH8015	AH6225	SH7025	SH725	J740	GH730	GH330	GT9530	J9530	NS9530	TH10	RE	IC	S	D1
Finishing	**PF**	DCMT 21.50.5 PF	DCMT070202-PF									●		●		●		0.008	0.250	0.094	0.109
		DCMT 21.51 PF	DCMT070204-PF					●				●		●		●		0.016	0.250	0.094	0.109
		DCMT 21.52 PF	DCMT070208-PF					●						●		●		0.031	0.250	0.094	0.109
		DCMT 32.50.5 PF	DCMT11T302-PF									●		●		●		0.008	0.375	0.156	0.173
		DCMT 32.51 PF	DCMT11T304-PF									●		●		●		0.016	0.375	0.156	0.173
		DCMT 32.52 PF	DCMT11T308-PF											●				0.031	0.375	0.156	0.173
	TSF	DCMT 21.50.5 TSF	DCMT070202-TSF	●	●	●	●	●								●		0.008	0.250	0.094	0.109
		DCMT 21.51 TSF	DCMT070204-TSF	●	●	●	●	●								●		0.016	0.250	0.094	0.109
		DCMT 21.52 TSF	DCMT070208-TSF	●	●	●	●	●								●		0.031	0.250	0.094	0.109
		DCMT 32.50.5 TSF	DCMT11T302-TSF	●	●	●	●	●								●		0.008	0.375	0.156	0.173
		DCMT 32.51 TSF	DCMT11T304-TSF	●	●	●	●	●								●		0.016	0.375	0.156	0.173
		DCMT 32.52 TSF	DCMT11T308-TSF	●	●	●	●	●								●		0.031	0.375	0.156	0.173
Finishing (sharp edge)	**J10**	DCGT 21.5V FR-J10	DCGT070200FR-J10						●	●	●						●	0.0012	0.250	0.094	0.109
		DCGT 21.5V FL-J10	DCGT070200FL-J10							●	●						●	0.0012	0.250	0.094	0.109
		DCGT 21.50 FR-J10	DCGT070201FR-J10						●	●	●					●	●	0.004	0.250	0.094	0.109
		DCGT 21.50 FL-J10	DCGT070201FL-J10							●	●					●	●	0.004	0.250	0.094	0.109
		DCGT 21.50.5 FR-J10	DCGT070202FR-J10						●	●	●					●	●	0.008	0.250	0.094	0.109
		DCGT 21.50.5 FL-J10	DCGT070202FL-J10						●	●	●					●	●	0.008	0.250	0.094	0.109
		DCGT 21.51 FR-J10	DCGT070204FR-J10						●	●								0.016	0.250	0.094	0.109
		DCGT 21.51 FL-J10	DCGT070204FL-J10						●	●								0.016	0.250	0.094	0.109
		DCGT 32.5V FR-J10	DCGT11T300FR-J10						●	●	●						●	0.0012	0.375	0.156	0.173
		DCGT 32.5V FL-J10	DCGT11T300FL-J10							●	●						●	0.0012	0.375	0.156	0.173
		DCGT 32.50 FR-J10	DCGT11T301FR-J10						●	●	●					●	●	0.004	0.375	0.156	0.173
		DCGT 32.50 FL-J10	DCGT11T301FL-J10							●	●					●	●	0.004	0.375	0.156	0.173
		DCGT 32.50.5 FR-J10	DCGT11T302FR-J10						●	●	●					●	●	0.008	0.375	0.156	0.173
		DCGT 32.50.5 FL-J10	DCGT11T302FL-J10						●	●	●					●	●	0.008	0.375	0.156	0.173
Finishing	**J10**	DCGT 21.50.5 R-J10	DCGT070202R-J10												●			0.008	0.250	0.094	0.109
		DCGT 32.50.5 R-J10	DCGT11T302R-J10												●			0.008	0.375	0.156	0.173
	W10	DCGT 21.5V R-W10	DCGT070200R-W10														●	0.0012	0.250	0.094	0.109
		DCGT 21.5V L-W10	DCGT070200L-W10														●	0.0012	0.250	0.094	0.109
		DCGT 21.50.5 R-W10	DCGT070202R-W10													●	●	0.008	0.250	0.094	0.109
		DCGT 21.50.5 L-W10	DCGT070202L-W10											●		●		0.008	0.250	0.094	0.109
		DCGT 21.51 R-W10	DCGT070204R-W10										●			●	●	0.016	0.250	0.094	0.109
		DCGT 21.51 L-W10	DCGT070204L-W10										●	●		●	●	0.016	0.250	0.094	0.109
	W15	DCGT 32.50.5 R-W15	DCGT11T302R-W15													●	●	0.008	0.375	0.156	0.173
		DCGT 32.50.5 L-W15	DCGT11T302L-W15											●		●		0.008	0.375	0.156	0.173
		DCGT 32.51 R-W15	DCGT11T304R-W15													●		0.016	0.375	0.156	0.173
		DCGT 32.51 L-W15	DCGT11T304L-W15										●	●		●	●	0.016	0.375	0.156	0.173
		DCGT 32.52 R-W15	DCGT11T308R-W15													●	●	0.031	0.375	0.156	0.173
		DCGT 32.52 L-W15	DCGT11T308L-W15													●	●	0.031	0.375	0.156	0.173

● : Line up

Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

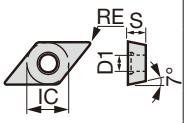
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°



P	Steel	●ⓒ●ⓒ
M	Stainless	●ⓒ●ⓒ
K	Cast iron	
N	Non-ferrous	
S	Superalloy	●ⓒ
H	Hard material	

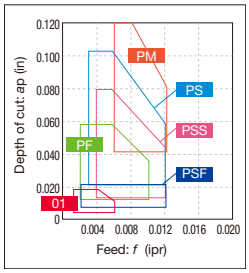


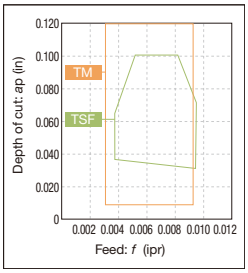
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	**JPP**	DCET 21.5X MFR-JPP	DCET0702008MFR-JPP	●	●	<0.0031"	0.250	0.094	0.109
		DCET 21.50 MFR-JPP	DCET070201MFR-JPP	●	●	<0.004"	0.250	0.094	0.109
		DCET21.50.2 MFL-JPP	DCET070201MFL-JPP	●	●	<0.004"	0.250	0.094	0.109
		DCET21.50.5 MFR-JPP	DCET070202MFR-JPP	●	●	<0.008"	0.250	0.094	0.109
		DCET21.50.5 MFL-JPP	DCET070202MFL-JPP	●	●	<0.008"	0.250	0.094	0.109
		DCET 32.5X MFR-JPP	DCET11T3008MFR-JPP	●	●	<0.0031"	0.375	0.156	0.173
		DCET 32.50 MFR-JPP	DCET11T301MFR-JPP	●	●	<0.004"	0.375	0.156	0.173
		DCET 32.50 MFL-JPP	DCET11T301MFL-JPP	●	●	<0.004"	0.375	0.156	0.173
		DCET32.50.4 MFR-JPP	DCET11T3018MFR-JPP	●	●	<0.007"	0.375	0.156	0.173
		DCET32.50.4 MFL-JPP	DCET11T3018MFL-JPP	●		<0.007"	0.375	0.156	0.173
		DCET32.50.5 MFR-JPP	DCET11T302MFR-JPP	●	●	<0.008"	0.375	0.156	0.173
		DCET32.50.5 MFL-JPP	DCET11T302MFL-JPP	●	●	<0.008"	0.375	0.156	0.173
	JRP	DCET 21.5X MFR-JRP	DCET0702008MFR-JRP	●	●	<0.0031"	0.250	0.094	0.109
		DCET 21.50 MFR-JRP	DCET070201MFR-JRP	●	●	<0.004"	0.250	0.094	0.109
		DCET 21.50 MFL-JRP	DCET070201MFL-JRP	●		<0.004"	0.250	0.094	0.109
		DCET21.50.4 MFR-JRP	DCET070218MFR-JRP		●	<0.007"	0.250	0.094	0.109
		DCET21.50.4 MFL-JRP	DCET070218MFL-JRP	●	●	<0.007"	0.250	0.094	0.109
		DCET21.50.5 MFR-JRP	DCET070202MFR-JRP	●	●	<0.008"	0.250	0.094	0.109
		DCET21.50.5 MFL-JRP	DCET070202MFL-JRP	●	●	<0.008"	0.250	0.094	0.109
		DCET 32.5X MFR-JRP	DCET11T3008MFR-JRP	●	●	<0.0031"	0.375	0.156	0.173
		DCET 32.50 MFR-JRP	DCET11T301MFR-JRP	●	●	<0.004"	0.375	0.156	0.173
		DCET32.50.4 MFR-JRP	DCET11T3018MFR-JRP		●	<0.007"	0.375	0.156	0.173
		DCET32.50.4 MFL-JRP	DCET11T3018MFL-JRP	●		<0.007"	0.375	0.156	0.173
		DCET32.50.5 MFR-JRP	DCET11T302MFR-JRP	●	●	<0.008"	0.375	0.156	0.173
		DCET32.50.5 MFL-JRP	DCET11T302MFL-JRP	●	●	<0.008"	0.375	0.156	0.173
	JSP	DCET 21.5X MFN-JSP	DCET0702008MFN-JSP	●	●	<0.0031"	0.250	0.094	0.109
		DCET 21.50 MFN-JSP	DCET070201MFN-JSP	●	●	<0.004"	0.250	0.094	0.109
		DCET21.50.5 MFN-JSP	DCET070202MFN-JSP	●	●	<0.008"	0.250	0.094	0.109
		DCET 32.5X MFN-JSP	DCET11T3008MFN-JSP	●	●	<0.0031"	0.375	0.156	0.173
		DCET 32.50 MFN-JSP	DCET11T301MFN-JSP	●	●	<0.004"	0.375	0.156	0.173
		DCET32.50.4 MFN-JSP	DCET11T3018MFN-JSP	●	●	<0.007"	0.375	0.156	0.173
		DCET32.50.5 MFN-JSP	DCET11T302MFN-JSP	●	●	<0.008"	0.375	0.156	0.173

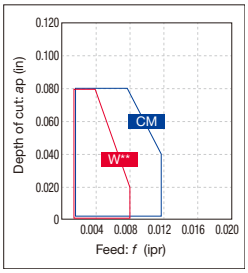
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

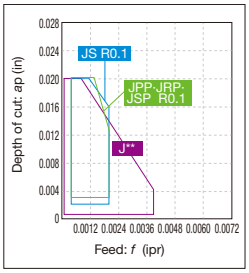
● : Line up

Chip control range









*Chip control range with typical R0.1

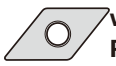
Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

Insert POSITIVE TYPE

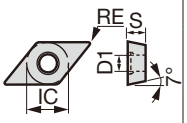
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55°
with hole
Positive 7°



P	Steel	●ɔ ɔ✣ ɔ ✣ ✣ ✣ ✣ ɔ✣ ✣ ɔ ●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
M	Stainless	●ɔ ● ● ✣ ɔ ● ɔ ●ɔ ✣ ɔ ●ɔ ɔ
K	Cast iron	●ɔ ● ● ɔ ● ●ɔ ɔ ɔ ●ɔ ɔ ●ɔ ●ɔ ●ɔ ● ●
N	Non-ferrous	● ●
S	Superalloy	● ɔ ɔ ● ● ● ●
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH120	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated KS05F	TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	PSS	DCMT 21.51 PSS	DCMT070204-PSS	●	●	●						●	●		●			●		●			0.016	0.250	0.094	0.109
		DCMT 21.52 PSS	DCMT070208-PSS	●	●	●						●	●		●			●		●			0.031	0.250	0.094	0.109
		DCMT 32.51 PSS	DCMT11T304-PSS	●	●	●				●	●	●	●	●	●			●		●			0.016	0.375	0.156	0.173
		DCMT 32.52 PSS	DCMT11T308-PSS	●	●	●				●	●	●	●	●	●			●		●			0.031	0.375	0.156	0.173
		DCMT 32.53 PSS	DCMT11T312-PSS	●	●	●				●	●	●	●	●	●					●			0.047	0.375	0.156	0.173
	PS	DCMT 21.50.5 PS	DCMT070202-PS	●	●	●				●	●	●	●		●	●	●	●	●	●			0.008	0.250	0.094	0.109
		DCMT 21.51 PS	DCMT070204-PS	●	●	●				●	●	●	●		●	●	●	●	●	●			0.016	0.250	0.094	0.109
		DCMT 21.52 PS	DCMT070208-PS	●	●	●				●	●	●			●		●	●	●	●			0.031	0.250	0.094	0.109
		DCMT 32.50.5 PS	DCMT11T302-PS	●	●	●				●	●	●	●		●	●	●	●	●	●			0.008	0.375	0.156	0.173
		DCMT 32.51 PS	DCMT11T304-PS	●	●	●				●	●	●	●	●	●	●	●	●	●	●			0.016	0.375	0.156	0.173
		DCMT 32.52 PS	DCMT11T308-PS	●	●	●				●	●	●	●	●	●	●	●	●	●	●			0.031	0.375	0.156	0.173
		DCMT 32.53 PS	DCMT11T312-PS	●	●	●				●	●	●	●	●	●					●			0.047	0.375	0.156	0.173
	TM	DCMT 21.50.5 TM	DCMT070202-TM	●	●	●					●	●								●			0.008	0.250	0.094	0.109
		DCMT 21.51 TM	DCMT070204-TM	●	●	●					●	●								●			0.016	0.250	0.094	0.109
		DCMT 21.52 TM	DCMT070208-TM	●	●	●					●	●								●			0.031	0.250	0.094	0.109
		DCMT 32.50.5 TM	DCMT11T302-TM	●	●	●					●	●								●			0.008	0.375	0.156	0.173
		DCMT 32.51 TM	DCMT11T304-TM	●	●	●					●	●								●			0.016	0.375	0.156	0.173
		DCMT 32.52 TM	DCMT11T308-TM	●	●	●					●	●								●			0.031	0.375	0.156	0.173
	CM	DCMT 21.51 CM	DCMT070204-CM						●														0.016	0.250	0.094	0.109
		DCMT 21.52 CM	DCMT070208-CM						●														0.031	0.250	0.094	0.109
		DCMT 32.51 CM	DCMT11T304-CM				●	●	●														0.016	0.375	0.156	0.173
		DCMT 32.52 CM	DCMT11T308-CM				●	●	●														0.031	0.375	0.156	0.173
		DCMT 32.53 CM	DCMT11T312-CM						●														0.047	0.375	0.156	0.173
Finishing to medium cutting for non-ferrous alloys	AL	DCGT 21.50.5 AL	DCGT070202-AL																		●		0.008	0.250	0.094	0.109
		DCGT 21.51 AL	DCGT070204-AL																		●		0.016	0.250	0.094	0.109
		DCGT 32.50.5 AL	DCGT11T302-AL																		●		0.008	0.375	0.156	0.173
		DCGT 32.51 AL	DCGT11T304-AL																		●		0.016	0.375	0.156	0.173
		DCGT 32.52 AL	DCGT11T308-AL																		●		0.031	0.375	0.156	0.173
Finishing to medium cutting	All-round	DCGT 21.50.5	DCGT070202																	●			0.008	0.250	0.094	0.109
		DCGT 21.51	DCGT070204																	●			0.016	0.250	0.094	0.109
		DCGT 32.50.5	DCGT11T302																	●			0.008	0.375	0.156	0.173
		DCGT 32.51	DCGT11T304																	●			0.016	0.375	0.156	0.173
		DCGT 32.52	DCGT11T308																	●			0.031	0.375	0.156	0.173
	Angular	DCGT 21.50.5 R	DCGT070202R																			●	0.008	0.250	0.094	0.109
		DCGT 21.50.5 L	DCGT070202L																			●	0.008	0.250	0.094	0.109
		DCGT 21.51 R	DCGT070204R																			●	0.016	0.250	0.094	0.109
		DCGT 21.51 L	DCGT070204L																			●	0.016	0.250	0.094	0.109
		DCGT 32.50.5 R	DCGT11T302R																			●	0.008	0.375	0.156	0.173
		DCGT 32.50.5 L	DCGT11T302L																			●	0.008	0.375	0.156	0.173
		DCGT 32.51 R	DCGT11T304R																			●	0.016	0.375	0.156	0.173
		DCGT 32.51 L	DCGT11T304L																			●	0.016	0.375	0.156	0.173

● : Line up

Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

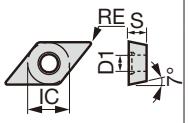
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

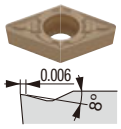
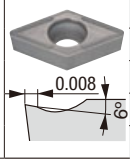
DC

Rhombic, 55° with hole Positive 7°



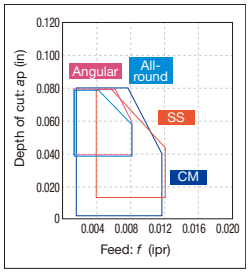
P	Steel	●ɔ	ɔ✣	ɔ		ɔ✣	✣	ɔ	●	●ɔ	ɔ	●	●ɔ			●ɔ			●		
M	Stainless	●ɔ		●		●ɔ	✣	ɔ	●	●ɔ	ɔ	●							●		
K	Cast iron	●ɔ			ɔ			ɔ	●	●ɔ	ɔ	●	●ɔ			●ɔ			●		
N	Non-ferrous																		●		
S	Superalloy							●	●	●ɔ		●									
H	Hard material																				

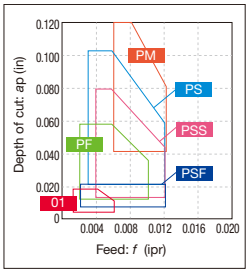


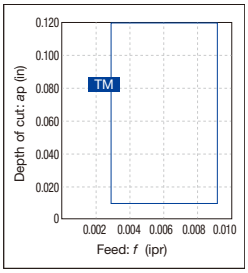
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T5115	AH6225	AH6235	AH725	AH110	AH120	GH730	GH110	Coated cermet GT9530	Cermet NS9530	Un-coated TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	23	DCMT 21.51-23	DCMT070204-23													●		0.016	0.250	0.094	0.109
		DCMT 32.51-23	DCMT11T304-23													●		0.016	0.375	0.156	0.173
		DCMT 32.52-23	DCMT11T308-23													●		0.031	0.375	0.156	0.173
	-	DCMW 21.51	DCMW070204				●											0.016	0.250	0.094	0.109
		DCMW 21.52	DCMW070208				●											0.031	0.250	0.094	0.109
		DCMW 32.51	DCMW11T304				●											0.016	0.375	0.156	0.173
		DCMW 32.52	DCMW11T308				●											0.031	0.375	0.156	0.173
	-	DCGW 21.50.5	DCGW070202														●	0.008	0.250	0.094	0.109
		DCGW 21.51	DCGW070204											●			●	0.016	0.250	0.094	0.109
		DCGW 32.50.5	DCGW11T302														●	0.008	0.375	0.156	0.173
		DCGW 32.51	DCGW11T304														●	0.016	0.375	0.156	0.173
		DCGW 32.52	DCGW11T308														●	0.031	0.375	0.156	0.173
Medium cutting	PM	DCMT 21.51 PM	DCMT070204-PM	●	●	●		●	●	●	●	●	●		●	●		0.016	0.250	0.094	0.109
		DCMT 21.52 PM	DCMT070208-PM	●	●	●		●	●	●	●	●	●		●	●		0.031	0.250	0.094	0.109
		DCMT 32.51 PM	DCMT11T304-PM	●	●	●		●	●	●	●	●	●		●	●		0.016	0.375	0.156	0.173
		DCMT 32.52 PM	DCMT11T308-PM	●	●	●		●	●	●	●	●	●		●	●		0.031	0.375	0.156	0.173
		DCMT 32.53 PM	DCMT11T312-PM		●	●		●	●	●								0.047	0.375	0.156	0.173
	24	DCMT 21.50.5-24	DCMT070202-24													●		0.008	0.250	0.094	0.109
		DCMT 21.51-24	DCMT070204-24	●	●							●				●		0.016	0.250	0.094	0.109
		DCMT 21.52-24	DCMT070208-24		●							●				●		0.031	0.250	0.094	0.109
		DCMT 32.50.5-24	DCMT11T302-24		●							●				●		0.008	0.375	0.156	0.173
		DCMT 32.51-24	DCMT11T304-24	●	●							●				●		0.016	0.375	0.156	0.173
		DCMT 32.52-24	DCMT11T308-24	●	●			●				●				●		0.031	0.375	0.156	0.173

● : Line up

Chip control range







Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

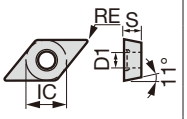
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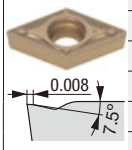
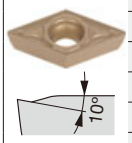
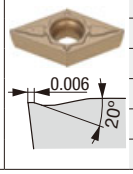
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

DP

Rhombic, 55°
with hole
Positive 11°

P	Steel	●ɔ ɔ✠ ɔ ✠
M	Stainless	●ɔ ● ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T6215	Coated AH8015	Coated AH6225	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing	TSF	DPMT 21.50.5 TSF	DPMT070202-TSF	●	●	●	●	●	●	0.008	0.250	0.094	0.109
		DPMT 21.51 TSF	DPMT070204-TSF	●	●	●	●	●	●	0.016	0.250	0.094	0.109
		DPMT 21.52 TSF	DPMT070208-TSF	●	●	●	●	●	●	0.031	0.250	0.094	0.109
		DPMT 32.50.5 TSF	DPMT11T302-TSF	●	●	●	●	●	●	0.008	0.375	0.156	0.173
		DPMT 32.51 TSF	DPMT11T304-TSF	●	●	●	●	●	●	0.016	0.375	0.156	0.173
		DPMT 32.52 TSF	DPMT11T308-TSF	●	●	●	●	●	●	0.031	0.375	0.156	0.173
Finishing to medium cutting	PS	DPMT 21.50.5 PS	DPMT070202-PS	●	●	●	●	●	●	0.008	0.250	0.094	0.109
		DPMT 21.51 PS	DPMT070204-PS	●	●	●	●	●	●	0.016	0.250	0.094	0.109
		DPMT 21.52 PS	DPMT070208-PS	●	●	●	●	●	●	0.031	0.250	0.094	0.109
		DPMT 32.50.5 PS	DPMT11T302-PS	●	●	●	●	●	●	0.008	0.375	0.156	0.173
		DPMT 32.51 PS	DPMT11T304-PS	●	●	●	●	●	●	0.016	0.375	0.156	0.173
		DPMT 32.52 PS	DPMT11T308-PS	●	●	●	●	●	●	0.031	0.375	0.156	0.173
	TM	DPMT 21.50.5 TM	DPMT070202-TM	●	●	●	●	●	●	0.008	0.250	0.094	0.109
		DPMT 21.51 TM	DPMT070204-TM	●	●	●	●	●	●	0.016	0.250	0.094	0.109
		DPMT 21.52 TM	DPMT070208-TM	●	●	●	●	●	●	0.031	0.250	0.094	0.109
		DPMT 32.50.5 TM	DPMT11T302-TM	●	●	●	●	●	●	0.008	0.375	0.156	0.173
		DPMT 32.51 TM	DPMT11T304-TM	●	●	●	●	●	●	0.016	0.375	0.156	0.173
		DPMT 32.52 TM	DPMT11T308-TM	●	●	●	●	●	●	0.031	0.375	0.156	0.173

● : Line up

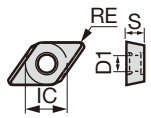
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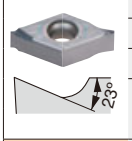
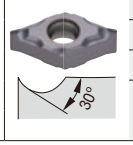
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

DX

Rhombic, 55°
with hole

P	Steel	●ɔ
M	Stainless	●ɔ
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	JRP	DXGU 220MFRE JRP	DXGU070301MFRE-JRP**	●	<0.004*	0.250	0.125	0.106
		DXGU 2200MFLE JRP	DXGU070301MFLE-JRP**	●	<0.004*	0.250	0.125	0.106
		DXGU 220.5MFRE JRP	DXGU070302MFRE-JRP**	●	<0.008*	0.250	0.125	0.106
		DXGU 220.5MFLE JRP	DXGU070302MFLE-JRP**	●	<0.008*	0.250	0.125	0.106
	JSS	DXGU 220MFR JSS	DXGU070301MFR-JSS	●	<0.004*	0.250	0.125	0.106
		DXGU 2200MFL JSS	DXGU070301MFL-JSS	●	<0.004*	0.250	0.125	0.106
		DXGU 220.5MFR JSS	DXGU070302MFR-JSS	●	<0.008*	0.250	0.125	0.106
		DXGU 220.5MFL JSS	DXGU070302MFL-JSS	●	<0.008*	0.250	0.125	0.106

● : Line up

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.
** For external turning applications

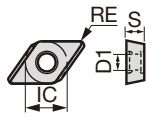
Reference pages: DPMT...: Internal toolholder → D038 -
DXGU...: External toolholder → C057 -, Internal toolholder → D040 -
J-Series toolholder → G046 -, TungCap → K026

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DX

Rhombic, 55° with hole

P	Steel	●ɔ	ɔ✣		ɔ	●ɔ		●ɔ				●ɔ									
M	Stainless	●ɔ		ɔ	ɔ	●ɔ															
K	Cast iron	●ɔ			ɔ			●ɔ				●ɔ				●					
N	Non-ferrous															●					
S	Superalloy			ɔ	●											●					
H	Hard material																				

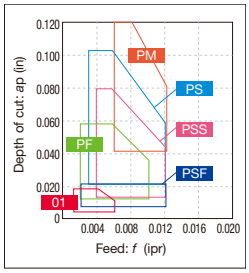


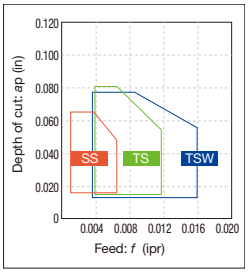
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated AH8015	Coated AH725	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	Dimension (in) RE	IC	S	D1
Finishing	JSS	DXGU 220MR JSS	DXGU070301MR-JSS				●					<0.004*	0.250	0.125	0.106
		DXGU 220ML JSS	DXGU070301ML-JSS				●					<0.004*	0.250	0.125	0.106
		DXGU 220.5MR JSS	DXGU070302MR-JSS				●					<0.008*	0.250	0.125	0.106
		DXGU 220.5ML JSS	DXGU070302ML-JSS				●					<0.008*	0.250	0.125	0.106
	SS	DXGU 220.5R SS	DXGU070302R-SS			●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 220.5L SS	DXGU070302L-SS			●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 221R SS	DXGU070304R-SS			●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 221L SS	DXGU070304L-SS			●	●		●	●	●	0.016	0.250	0.125	0.106
Finishing to medium cutting (sharp edge)	JS	DXGU 220MFR JS	DXGU070301MFR-JS(1)					●				<0.004*	0.250	0.125	0.106
		DXGU 220MFL JS	DXGU070301MFL-JS(1)					●				<0.004*	0.250	0.125	0.106
		DXGU 220.5MFR JS	DXGU070302MFR-JS(1)					●				<0.008*	0.250	0.125	0.106
		DXGU 220.5MFL JS	DXGU070302MFL-JS(1)					●				<0.008*	0.250	0.125	0.106
		DXGU 221MFR JS	DXGU070304MFR-JS(1)					●				<0.016*	0.250	0.125	0.106
		DXGU 221MFL JS	DXGU070304MFL-JS(1)					●				<0.016*	0.250	0.125	0.106
	JTS	DXGU 220MFR JTS	DXGU070301MFR-JTS					●				<0.004*	0.250	0.125	0.106
		DXGU 220MFL JTS	DXGU070301MFL-JTS					●				<0.004*	0.250	0.125	0.106
		DXGU 220.5MFR JTS	DXGU070302MFR-JTS					●				<0.008*	0.250	0.125	0.106
		DXGU 220.5MFL JTS	DXGU070302MFL-JTS					●				<0.008*	0.250	0.125	0.106
Finishing to medium cutting	JTS	DXGU 220MR JTS	DXGU070301MR-JTS				●					<0.004*	0.250	0.125	0.106
		DXGU 220ML JTS	DXGU070301ML-JTS				●					<0.004*	0.250	0.125	0.106
		DXGU 220.5MR JTS	DXGU070302MR-JTS				●					<0.008*	0.250	0.125	0.106
		DXGU 220.5ML JTS	DXGU070302ML-JTS				●					<0.008*	0.250	0.125	0.106
	TS	DXGU 220.5R TS	DXGU070302R-TS			●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 220.5L TS	DXGU070302L-TS			●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 221R TS	DXGU070304R-TS			●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 221L TS	DXGU070304L-TS			●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 222R TS	DXGU070308R-TS			●	●		●	●	●	0.031	0.250	0.125	0.106
		DXGU 222L TS	DXGU070308L-TS			●	●		●	●	●	0.031	0.250	0.125	0.106
	TS	DXMU 220.5R TS	DXMU070302R-TS	●	●	●	●					0.008	0.250	0.125	0.106
		DXMU 220.5L TS	DXMU070302L-TS	●	●	●	●					0.008	0.250	0.125	0.106
		DXMU 221R TS	DXMU070304R-TS	●	●	●	●					0.016	0.250	0.125	0.106
		DXMU 221L TS	DXMU070304L-TS	●	●	●	●					0.016	0.250	0.125	0.106
		DXMU 222R TS	DXMU070308R-TS	●	●	●	●					0.031	0.250	0.125	0.106
		DXMU 222L TS	DXMU070308L-TS	●	●	●	●					0.031	0.250	0.125	0.106

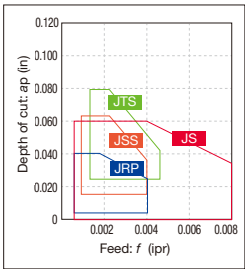
* Corner radius (RE) with a sign of inequality (<) means minus tolerance.
(1) Due to chipbreaker profile, max ap for face or ID turning is 0.040".

● : Line up

Chip control range







Reference pages:
External toolholder → C057 -
Internal toolholder → D040 -
J-Series toolholder → G046 -
TungCap → K026

Insert POSITIVE TYPE

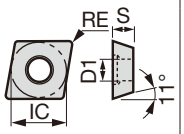
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

EP



Rhombic, 75° with hole Positive 11°

P	Steel	◐ ◐ ◐ ◐
M	Stainless	◐ ◐ ◐ ◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	◐
H	Hard material	

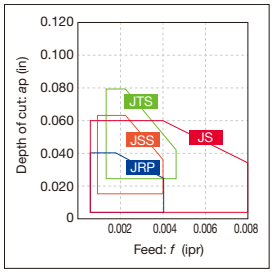


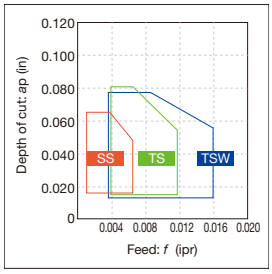
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated SH725	Coated SH730	Coated J740	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	JS	EPGT 4.51.80 F-JS	EPGT03X101F-JS	●	●			<0.004	0.141	0.055	0.075
		EPGT 4.51.80.5 F-JS	EPGT03X102F-JS	●	●			<0.008	0.141	0.055	0.075
		EPGT 4.51.81 F-JS	EPGT03X104F-JS	●	●			<0.016	0.141	0.055	0.075
		EPGT 520 F-JS	EPGT040101F-JS	●	●			<0.004	0.156	0.063	0.091
		EPGT 520.5 F-JS	EPGT040102F-JS	●	●			<0.008	0.156	0.063	0.091
		EPGT 521 F-JS	EPGT040104F-JS	●	●			<0.016	0.156	0.063	0.091
Finishing	JS	EPGT 4.51.80 JS	EPGT03X101-JS			●		<0.004	0.141	0.055	0.075
		EPGT 4.51.80.5 JS	EPGT03X102-JS			●		<0.008	0.141	0.055	0.075
		EPGT 4.51.81 JS	EPGT03X104-JS			●		<0.016	0.141	0.055	0.075
		EPGT 520 JS	EPGT040101-JS			●		<0.004	0.156	0.063	0.091
		EPGT 520.5 JS	EPGT040102-JS			●		<0.008	0.156	0.063	0.091
		EPGT 521 JS	EPGT040104-JS			●		<0.016	0.156	0.063	0.091
Finishing (sharp edge)	J08	EPGT 52V FL-J08	EPGT040100FL-J08		●			0.0012	0.156	0.063	0.091
		EPGT 520.5 FL-J08	EPGT040102FL-J08	●	●			0.008	0.156	0.063	0.091
		EPGT 521 FL-J08	EPGT040104FL-J08	●	●			0.016	0.156	0.063	0.091
Finishing	J08	EPGT 52V L-J08	EPGT040100L-J08			●	●	0.0012	0.156	0.063	0.091
		EPGT 520.5 L-J08	EPGT040102L-J08			●	●	0.008	0.156	0.063	0.091
		EPGT 521 L-J08	EPGT040104L-J08			●	●	0.016	0.156	0.063	0.091

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range





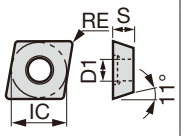
Reference pages: Internal toolholder → D048 -

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

EP

Rhombic, 75°
with hole
Positive 11°

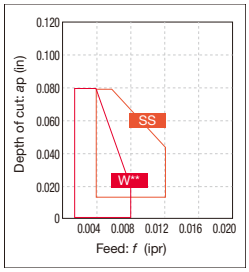
P	Steel	● ɔɔ ɔɔ ɔɔ ɔɔ ɔɔ ● ɔ
M	Stainless	● ɔɔ ɔɔ ɔɔ ɔɔ ɔɔ ● ɔ
K	Cast iron	● ɔɔ ɔɔ ●
N	Non-ferrous	●
S	Superalloy	● ɔɔ ɔɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated SH7025	Coated SH725	Coated SH730	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	W08	EPGT 4.51.8V FR-W08	EPGT03X100FL-W08		●	●						0.0012	0.141	0.055	0.075
		EPGT 4.51.8V FL-W08	EPGT03X100FR-W08			●						0.0012	0.141	0.055	0.075
		EPGT 4.51.80 FR-W08	EPGT03X101FL-W08		●	●						0.004	0.141	0.055	0.075
		EPGT 4.51.80 FL-W08	EPGT03X101FR-W08			●						0.004	0.141	0.055	0.075
		EPGT4.51.80.5FR-W08	EPGT03X102FL-W08		●	●						0.008	0.141	0.055	0.075
		EPGT4.51.80.5FL-W08	EPGT03X102FR-W08		●	●						0.008	0.141	0.055	0.075
		EPGT 4.51.81 FR-W08	EPGT03X104FL-W08		●	●						0.016	0.141	0.055	0.075
		EPGT 4.51.81 FL-W08	EPGT03X104FR-W08		●	●						0.016	0.141	0.055	0.075
		EPGT 52V FR-W08	EPGT040100FL-W08		●	●						0.0012	0.156	0.063	0.091
		EPGT 52V FL-W08	EPGT040100FR-W08			●						0.0012	0.156	0.063	0.091
		EPGT 520 FR-W08	EPGT040101FL-W08		●	●						0.004	0.156	0.063	0.091
		EPGT 520 FL-W08	EPGT040101FR-W08			●						0.004	0.156	0.063	0.091
		EPGT 520.5 FR-W08	EPGT040102FL-W08		●	●						0.008	0.156	0.063	0.091
		EPGT 520.5 FL-W08	EPGT040102FR-W08		●	●						0.008	0.156	0.063	0.091
		EPGT 521 FR-W08	EPGT040104FL-W08		●	●						0.016	0.156	0.063	0.091
		EPGT 521 FL-W08	EPGT040104FR-W08		●	●						0.016	0.156	0.063	0.091
Finishing	W08	EPGT 4.51.8V R-W08	EPGT03X100R-W08				●			●		0.0012	0.141	0.055	0.075
		EPGT 4.51.8V L-W08	EPGT03X100L-W08				●			●		0.0012	0.141	0.055	0.075
		EPGT 4.51.80 R-W08	EPGT03X101R-W08				●			●		0.004	0.141	0.055	0.075
		EPGT 4.51.80 L-W08	EPGT03X101L-W08				●			●		0.004	0.141	0.055	0.075
		EPGT 4.51.80.5 R-W08	EPGT03X102R-W08				●			●		0.008	0.141	0.055	0.075
		EPGT 4.51.80.5 L-W08	EPGT03X102L-W08				●			●		0.008	0.141	0.055	0.075
		EPGT 4.51.81 R-W08	EPGT03X104R-W08				●			●		0.016	0.141	0.055	0.075
		EPGT 4.51.81 L-W08	EPGT03X104L-W08				●			●		0.016	0.141	0.055	0.075
		EPGT 52V R-W08	EPGT040100R-W08				●			●		0.0012	0.156	0.063	0.091
		EPGT 52V L-W08	EPGT040100L-W08	●			●		●	●		0.0012	0.156	0.063	0.091
		EPGT 520 R-W08	EPGT040101R-W08				●			●		0.004	0.156	0.063	0.091
		EPGT 520 L-W08	EPGT040101L-W08				●			●		0.004	0.156	0.063	0.091
		EPGT 520.5 R-W08	EPGT040102R-W08	●			●		●	●		0.008	0.156	0.063	0.091
		EPGT 520.5 L-W08	EPGT040102L-W08	●			●	●	●	●	●	0.008	0.156	0.063	0.091
		EPGT 521 R-W08	EPGT040104R-W08	●			●		●	●		0.016	0.156	0.063	0.091
		EPGT 521 L-W08	EPGT040104L-W08	●			●	●	●	●	●	0.016	0.156	0.063	0.091

● : Line up

Chip control range



Reference pages: Internal toolholder → D048 -

Insert POSITIVE TYPE

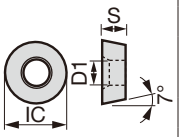
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

RC



Round, with hole
Positive 7°

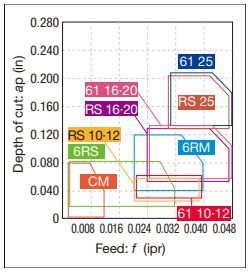
P	Steel	●ᑕ ✣
M	Stainless	●ᑕ ᑕ ● ᑕ
K	Cast iron	●ᑕ ᑕ ●ᑕ ●
N	Non-ferrous	●
S	Superalloy	ᑕ ᑕ ●
H	Hard material	

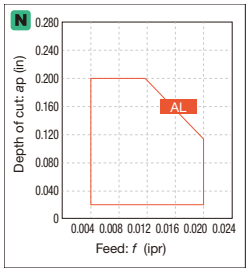


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T5115	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Uncoated KS05F	Dimension (in) RE	IC	S	D1
Finishing	RS	-	RCMT0602M0-RS				●					-	0.236	0.094	0.109
		-	RCMT0803M0-RS				●					-	0.315	0.125	0.134
		-	RCMT10T3M0-RS	●	●		●	●	●			-	0.394	0.156	0.173
		-	RCMT1204M0-RS	●	●		●	●	●			-	0.472	0.187	0.173
		-	RCMT1606M0-RS	●	●		●					-	0.630	0.250	0.217
		-	RCMT2006M0-RS		●		●					-	0.787	0.250	0.256
		-	RCMT2507M0-RS		●		●					-	0.984	0.313	0.299
	6RS	-	RCMT1204M0-6RS	●	●					●		-	0.472	0.187	0.173
Finishing to medium cutting	6RM	-	RCMT1204M0-6RM	●	●					●		-	0.472	0.187	0.173
	CM	-	RCMT0502M0-CM			●						-	0.197	0.094	0.098
		-	RCMT0602M0-CM			●						-	0.236	0.094	0.109
		-	RCMT0803M0-CM			●						-	0.315	0.125	0.134
Finishing to medium cutting for non-ferrous alloys	AL	-	RCGT0602M0-AL								●	-	0.236	0.094	0.109
		-	RCGT0803M0-AL								●	-	0.315	0.125	0.134
		-	RCGT1003M0-AL								●	-	0.394	0.125	0.173

● : Line up

Chip control range





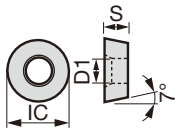
Reference pages: External toolholder → C068 -

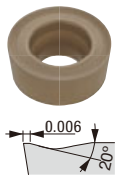
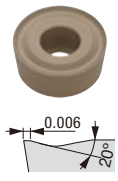
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

RC

Round, with hole Positive 7°

P	Steel	●ɔ ɔ✣ ●ɔ ●
M	Stainless	●ɔ ● ɔ ●
K	Cast iron	●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	● ɔ ɔ
H	Hard material	



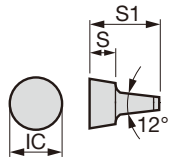
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Heavy cutting	61	-	RCMT0502M0-61	●	●				●	●	-	0.197	0.094	0.098
		-	RCMT0602M0-61	●	●				●	●	-	0.236	0.094	0.109
		-	RCMT0803M0-61	●	●				●	●	-	0.315	0.125	0.134
	61	-	RCMM1003M0-61	●	●	●	●	●	●	●	-	0.394	0.125	0.142
		-	RCMM1204M0-61	●	●	●	●	●	●	●	-	0.472	0.187	0.165
		-	RCMM1606M0-61	●	●					●	-	0.630	0.250	0.205
		-	RCMM2006M0-61		●					●	-	0.787	0.250	0.256
		-	RCMM2507M0-61		●						-	0.984	0.313	0.283

● : Line up

RT

Special round insert

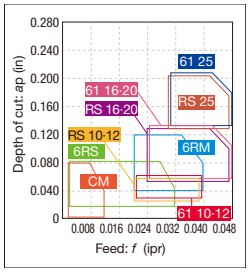
P	Steel	●
M	Stainless	●
K	Cast iron	● ɔ✣
N	Non-ferrous	● ɔ✣
S	Superalloy	ɔ✣
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Uncoated TH10	Uncoated KS20	Dimension (in) RE	IC	S	S1
Medium cutting	-	-	RT05	●		-	0.197	0.098	0.256
		-	RT06	●	●	-	0.236	0.118	0.303
		-	RT08	●		-	0.315	0.165	0.406

● : Line up

Chip control range



Reference pages: RC...: External toolholder → C068 -

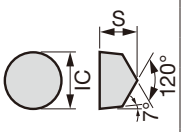
Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

RC

Round, without hole
Positive 7°

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



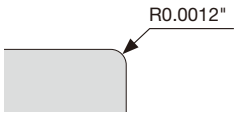
Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic LX11	Ceramic TS200	Ceramic TS300	Ceramic TW43	Dimension (in) RE	IC	S	D1
Medium cutting	-	-	RCGX090800	●				-	0.375	0.315	-
		-	RCGX120800	●				-	0.500	0.315	-
		-	RCGX070700-T1		●	●		-	0.375	0.315	-
		-	RCGX090700-E		●	●		-	0.375	0.315	-
			RCGX090700-T1			●		-	0.375	0.315	-
			RCGX090700-T6				●	-	0.375	0.315	-
		-	RCGX120700-E		●	●		-	0.500	0.315	-
		-	RCGX120700-T1		●	●		-	0.500	0.315	-



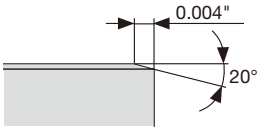
● : Line up

Edge prep

E: Low cutting force



T1/T6: Strong cutting edge



MEMO

Insert POSITIVE TYPE

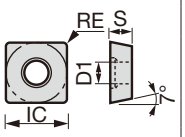
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

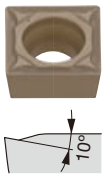
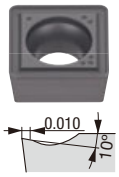
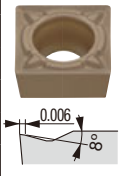
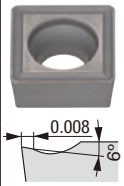
SC



Square with hole Positive 7°

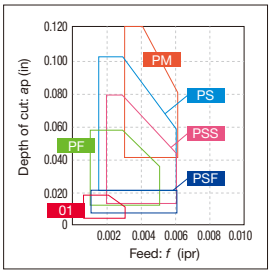
P	Steel	●ɔ ɔ✣ ɔ ✣ ✣ ɔ✣ ✣ ɔ ●ɔ ●ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ● ●ɔ ✣ ɔ ●ɔ ●ɔ ●ɔ ●ɔ
K	Cast iron	●ɔ ● ●ɔ ɔ ɔ ●ɔ ●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	● ●ɔ
H	Hard material	

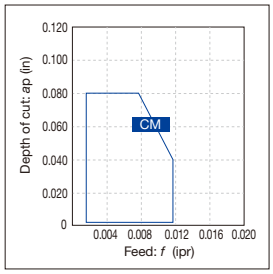


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH6225	AH6235	AH725	AH120	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**PS**	**SCMT 32.51 PS**	**SCMT09T304-PS**	●	●	●				●	●	●		●	●	●	0.016	0.375	0.156	0.173
		**SCMT 32.52 PS**	**SCMT09T308-PS**	●	●	●				●	●	●		●	●	●	0.031	0.375	0.156	0.173
		SCMT 431 PS	**SCMT120404-PS**	●	●	●				●	●	●				●	0.016	0.500	0.187	0.217
		SCMT 432 PS	**SCMT120408-PS**	●	●	●				●	●	●				●	0.031	0.500	0.187	0.217
	CM	**SCMT 32.51 CM**	**SCMT09T304-CM**				●	●	●								0.016	0.375	0.156	0.173
		**SCMT 32.52 CM**	**SCMT09T308-CM**				●	●	●								0.031	0.375	0.156	0.173
		SCMT 32.53 CM	**SCMT09T312-CM**						●								0.047	0.375	0.156	0.173
		SCMT 431 CM	**SCMT120404-CM**				●	●	●								0.016	0.500	0.187	0.217
		SCMT 432 CM	**SCMT120408-CM**				●	●	●								0.031	0.500	0.187	0.217
	23	**SCMT 32.50.5-23**	**SCMT09T302-23**													●	0.008	0.375	0.156	0.173
		**SCMT 32.52-23**	**SCMT09T308-23**		●								●				0.031	0.375	0.156	0.173
		SCMT 432-23	**SCMT120408-23**		●							●	●				0.031	0.500	0.187	0.217
Medium cutting	**PM**	**SCMT 32.51 PM**	**SCMT09T304-PM**	●	●	●				●	●	●				●	0.016	0.375	0.156	0.173
		**SCMT 32.52 PM**	**SCMT09T308-PM**	●	●	●				●	●	●				●	0.031	0.375	0.156	0.173
		SCMT 432 PM	**SCMT120408-PM**	●	●	●				●	●	●				●	0.031	0.500	0.187	0.217
		SCMT 433 PM	**SCMT120412-PM**		●	●				●	●	●				●	0.047	0.500	0.187	0.217
	24	**SCMT 2.51.51-24**	**SCMT070204-24**		●											●	0.016	0.313	0.094	0.134
		**SCMT 32.50.5-24**	**SCMT09T302-24**													●	0.008	0.375	0.156	0.173
		SCMT 32.51-24	**SCMT09T304-24**		●											●	0.016	0.375	0.156	0.173
		SCMT 32.52-24	**SCMT09T308-24**	●	●								●			●	0.031	0.375	0.156	0.173
		SCMT 431-24	**SCMT120404-24**		●											●	0.016	0.500	0.187	0.217
		SCMT 432-24	**SCMT120408-24**		●								●			●	0.031	0.500	0.187	0.217

● : Line up

Chip control range





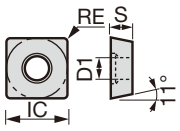
Reference pages: External toolholder → G053

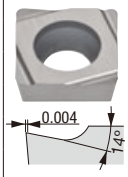
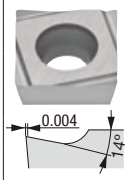
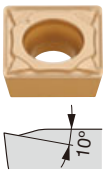
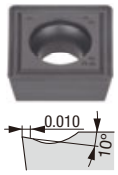
● : Continuous cutting
ȼ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP

Square with hole Positive 11°

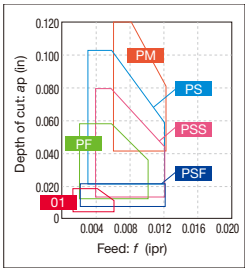
P	Steel	●, ȼ, ✠, ȼ, ✠, ✠, ȼ
M	Stainless	●, ȼ, ●, ✠, ✠, ȼ
K	Cast iron	●, ȼ, ●, ●, ȼ, ȼ, ȼ
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	

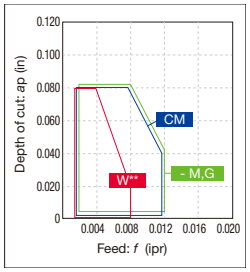


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH6225	AH6235	AH725	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing	**W15**	**SPGT 320.5 L-W15**	**SPGT090302L-W15**												●		0.008	0.375	0.125	0.173
		**SPGT 321 L-W15**	**SPGT090304L-W15**												●	●	0.016	0.375	0.125	0.173
		SPGT 322 R-W15	**SPGT090308R-W15**													●	0.031	0.375	0.125	0.173
		SPGT 322 L-W15	**SPGT090308L-W15**												●	●	0.031	0.375	0.125	0.173
	W20	**SPGT 431 L-W20**	**SPGT120404L-W20**												●		0.016	0.500	0.187	0.217
																				
Finishing to medium cutting	**PS**	**SPMT 321 PS**	**SPMT090304-PS**	●	●	●				●	●	●	●	●	●		0.016	0.375	0.125	0.173
		**SPMT 322 PS**	**SPMT090308-PS**	●	●	●				●	●	●	●	●	●		0.031	0.375	0.125	0.173
		SPMT 431 PS	**SPMT120404-PS**	●	●	●				●	●	●					0.016	0.500	0.187	0.217
		SPMT 432 PS	**SPMT120408-PS**	●	●	●				●	●	●					0.031	0.500	0.187	0.217
	CM	**SPMT 321 CM**	**SPMT090304-CM**						●								0.016	0.375	0.125	0.173
		**SPMT 322 CM**	**SPMT090308-CM**						●								0.031	0.375	0.125	0.173
		SPMT 431 CM	**SPMT120404-CM**				●	●	●								0.016	0.500	0.187	0.217
		SPMT 432 CM	**SPMT120408-CM**				●	●	●								0.031	0.500	0.187	0.217
	23	**SPMT 321-23**	**SPMT090304-23**		●										●		0.016	0.375	0.125	0.173
		**SPMT 322-23**	**SPMT090308-23**		●										●		0.031	0.375	0.125	0.173

● : Line up

Chip control range





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D052

Insert POSITIVE TYPE

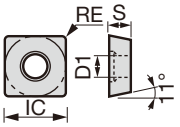
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

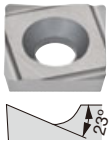
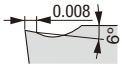
SP



Square with hole Positive 11°

		T9225	T5115	T5125	AH120	NS9530	TH10
P	Steel	◐✣			●◐	●◐	●
M	Stainless				●◐		●
K	Cast iron		◐	✣	●◐	●◐	●
N	Non-ferrous						●
S	Superalloy				●◐		
H	Hard material						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T5115	Coated T5125	Coated AH120	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	SPGM 321 L	SPGM090304L					●		0.016	0.375	0.125	0.173
	(Tungaloy standard hole specification)	SPGM 421 L	SPGM120304L					●		0.016	0.500	0.125	0.197
		SPGM 422 L	SPGM120308L					●		0.031	0.500	0.125	0.197
	-	SPMW 321	SPMW090304		●	●				0.016	0.375	0.125	0.173
		SPMW 322	SPMW090308		●					0.031	0.375	0.125	0.173
		SPMW 431	SPMW120404		●					0.016	0.500	0.187	0.217
		SPMW 432	SPMW120408		●					0.031	0.500	0.187	0.217
	-	SPGW 320.5	SPGW090302						●	0.008	0.375	0.125	0.173
		SPGW 321	SPGW090304						●	0.016	0.375	0.125	0.173
		SPGW 322	SPGW090308				●			0.031	0.375	0.125	0.173
		SPGW 333	SPGW090312				●			0.047	0.375	0.125	0.173
		SPGW 431	SPGW120404				●		●	0.016	0.500	0.187	0.217
		SPGW 432	SPGW120408				●			0.031	0.500	0.187	0.217
	-	SPGA 321	SPGA090304					●		0.016	0.375	0.125	0.173
	(Tungaloy standard hole specification)												
													
Medium cutting	24	SPMT 321-24	SPMT090304-24	●				●		0.016	0.375	0.125	0.173
		SPMT 322-24	SPMT090308-24	●			●	●		0.031	0.375	0.125	0.173
		SPMT 431-24	SPMT120404-24					●		0.016	0.500	0.187	0.217
		SPMT 432-24	SPMT120408-24				●	●		0.031	0.500	0.187	0.217
													

● : Line up

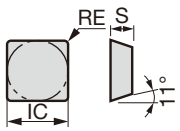
Reference pages: Internal toolholder → D052

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP

Square without hole Positive 11°

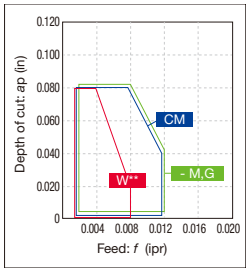
		T9225	T5115	T3130	AH110	AH120	AH330	NS9530	NS740	TH10	UX30	LX10	LX11	FX105
P	Steel	◐✠		●◐	●	●◐	●◐	●◐	◐	●	◐			
M	Stainless			●◐	●	●◐	●◐			●	◐			
K	Cast iron		◐	●◐	●	●◐	●◐	●◐	◐	●				●◐
N	Non-ferrous									●				
S	Superalloy			●◐	●	●◐								
H	Hard material											●◐	●◐	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated						Cermet		Uncoated		Ceramic			Dimension (in)			
				T9225	T5115	T3130	AH110	AH120	AH330	NS9530	NS740	TH10	UX30	LX10	LX11	FX105	RE	IC	S	D1
Finishing to medium cutting	**CM**	**SPMR 321 CM**	**SPMR090304-CM**		●												0.016	0.375	0.125	-
		SPMR 322 CM	SPMR090308-CM		●												0.031	0.375	0.125	-
		SPMR 421 CM	**SPMR120304-CM**		●												0.016	0.500	0.125	-
		SPMR 422 CM	SPMR120308-CM		●												0.031	0.500	0.125	-
		SPMR 423 CM	SPMR120312-CM		●												0.047	0.500	0.125	-
	23	**SPMR 321-23**	**SPMR090304-23**							●							0.016	0.375	0.125	-
		SPMR 322-23	SPMR090308-23	●						●							0.031	0.375	0.125	-
		SPMR 421-23	**SPMR120304-23**	●						●							0.016	0.500	0.125	-
		SPMR 422-23	SPMR120308-23	●						●							0.031	0.500	0.125	-
	-	**SPGR 321 L**	**SPGR090304L**							●							0.016	0.375	0.125	-
	-	**SPGN 321**	**SPGN090304**									●			▲		0.016	0.375	0.125	-
		SPGN 322	SPGN090308									●		●	▲		0.031	0.375	0.125	-
		SPGN 324	SPGN090316											●	▲		0.063	0.375	0.125	-
		SPGN 421	**SPGN120304**									●		●	▲		0.016	0.500	0.125	-
		SPGN 422	SPGN120308				●					●		●	▲		0.031	0.500	0.125	-
		SPGN 423	SPGN120312							●		●		●	▲		0.047	0.500	0.125	-
		SPGN 432	**SPGN120408**									●					0.031	0.500	0.187	-
		SPGN 433	SPGN120412									●					0.047	0.500	0.187	-
		SPGN 433TN	SPGN120412													●	0.047	0.500	0.187	-
	-	**SPMN 321**	**SPMN090304**		●												0.016	0.375	0.125	-
		SPMN 322	SPMN090308		●				●								0.031	0.375	0.125	-
		SPMN 421	**SPMN120304**		●								●				0.016	0.500	0.125	-
		SPMN 422	SPMN120308		●	●				●		●	●				0.031	0.500	0.125	-
		SPMN 423	SPMN120312		●						●	●	●				0.047	0.500	0.125	-
		SPMN 432	**SPMN120408**		●			●			●	●	●				0.031	0.500	0.187	-
		SPMN 433	SPMN120412		●		●						●				0.047	0.500	0.187	-
		SPMN 633	**SPMN190412**			●		●		●		●		●	●		0.047	0.750	0.187	-

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D053

Insert POSITIVE TYPE

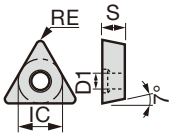
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC



Triangular with hole Positive 7°

P	Steel	●ɔ	●✣		ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ			●ɔ			●			
M	Stainless	●ɔ		ɔ	ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ							●			
K	Cast iron	●ɔ			ɔ							●ɔ			●ɔ			●			
N	Non-ferrous																	●			
S	Superalloy			ɔ	●		●ɔ			●ɔ											
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T6215	Coated AH8015	Coated AH6225	Coated AH725	Coated SH7025	Coated SH725	Coated SH730	Coated J740	Coated cermet GT9530	Cermet NS9530	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Precision finishing (sharp edge)	JP	TCGT 21.5V FN-JP	TCGT110200FN-JP							●	●							<0.002	0.250	0.094	0.109
		TCGT 21.50 FN-JP	TCGT110201FN-JP							●	●							<0.004	0.250	0.094	0.109
		TCGT 21.50.5 FN-JP	TCGT110202FN-JP							●	●							<0.008	0.250	0.094	0.109
	01	TCGT 21.50.5 F-01	TCGT110202F-01							●	●							<0.008	0.250	0.094	0.109
		TCGT 21.51 F-01	TCGT110204F-01							●	●							<0.016	0.250	0.094	0.109
Precision finishing	01	TCGT 731-01	TCGT090204-01													●	●	0.016	0.219	0.094	0.098
		TCGT 21.50.5-01	TCGT110202-01										●					0.008	0.250	0.094	0.109
		TCGT 21.51-01	TCGT110204-01											●	●	●	●	0.016	0.250	0.094	0.109
		TCGT 21.52-01	TCGT110208-01												●			0.031	0.250	0.094	0.109
		TCGT 32.51-01	TCGT16T304-01														●	0.016	0.375	0.156	0.173
		TCGT 32.52-01	TCGT16T308-01													●	●	0.031	0.375	0.156	0.173
Finishing (sharp edge)	JS	TCGT 21.5V FN-JS	TCGT110200FN-JS							●	●	●						<0.002	0.250	0.094	0.109
		TCGT 21.50 FN-JS	TCGT110201FN-JS							●	●	●						<0.004	0.250	0.094	0.109
		TCGT 21.50.5 FN-JS	TCGT110202FN-JS							●	●	●						<0.008	0.250	0.094	0.109
		TCGT 21.51 FN-JS	TCGT110204FN-JS							●	●	●						<0.016	0.250	0.094	0.109
Finishing	JS	TCGT 21.50 N-JS	TCGT110201N-JS						●									0.004	0.250	0.094	0.109
		TCGT 21.50.5 N-JS	TCGT110202N-JS						●									0.008	0.250	0.094	0.109
		TCGT 21.51 N-JS	TCGT110204N-JS						●									0.016	0.250	0.094	0.109
	PSF	TCMT 730.5 PSF	TCMT090202-PSF				●		●									0.008	0.219	0.094	0.098
		TCMT 731 PSF	TCMT090204-PSF	●	●		●		●									0.016	0.219	0.094	0.098
		TCMT 21.50.5 PSF	TCMT110202-PSF				●		●									0.008	0.250	0.094	0.109
		TCMT 21.51 PSF	TCMT110204-PSF	●	●		●		●									0.016	0.250	0.094	0.109
		TCMT 220.5 PSF	TCMT110302-PSF				●		●									0.008	0.250	0.125	0.109
		TCMT 221 PSF	TCMT110304-PSF	●	●		●		●									0.016	0.250	0.125	0.109
		TCMT 32.51 PSF	TCMT16T304-PSF	●	●		●		●									0.016	0.375	0.156	0.173
	TSF	TCMT 21.51 TSF	TCMT110204-TSF	●	●		●											0.016	0.250	0.094	0.109
		TCMT 21.52 TSF	TCMT110208-TSF	●	●		●											0.031	0.250	0.094	0.109
		TCMT 220.5 TSF	TCMT110302-TSF	●	●	●	●	●							●			0.008	0.250	0.125	0.109
		TCMT 221 TSF	TCMT110304-TSF	●	●	●	●	●							●			0.016	0.250	0.125	0.109
		TCMT 222 TSF	TCMT110308-TSF	●	●	●	●	●							●			0.031	0.250	0.125	0.109
		TCMT 32.51 TSF	TCMT16T304-TSF	●	●		●											0.016	0.375	0.156	0.173
		TCMT 32.52 TSF	TCMT16T308-TSF	●	●		●											0.031	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: External toolholder → C098 - Internal toolholder → D056
J-Series toolholder → G054 -

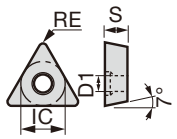
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC

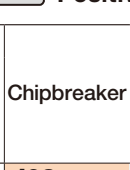
Triangular with hole Positive 7°



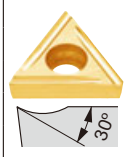
P	Steel	●	◐	●	◐							●	◐					●	◐				
M	Stainless	●	◐	●	◐													●					
K	Cast iron											●	◐					●	◐				
N	Non-ferrous																	●					
S	Superalloy																						
H	Hard material																						

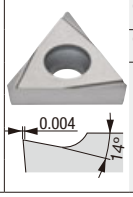


Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	**J08**	**TCGT 63V FR-J08**	**TCGT080200FR-J08**	●	●	●			●	0.0012	0.187	0.094	0.091
		TCGT 63**V FL-J08**	TCGT080**200FL-J08**		●	●			●	0.0012	0.187	0.094	0.091
		TCGT 63**0 FR-J08**	TCGT080**201FR-J08**	●	●	●			●	0.004	0.187	0.094	0.091
		TCGT 63**0 FL-J08**	TCGT080**201FL-J08**		●	●			●	0.004	0.187	0.094	0.091
		TCGT 63**0.5 FR-J08**	TCGT080**202FR-J08**	●	●	●			●	0.008	0.187	0.094	0.091
		TCGT 63**0.5 FL-J08**	TCGT080**202FL-J08**	●	●	●			●	0.008	0.187	0.094	0.091
		TCGT 63**1 FR-J08**	TCGT080**204FR-J08**	●	●					0.016	0.187	0.094	0.091
	J10	**TCGT 21.5V FR-J10**	**TCGT110200FR-J10**	●	●	●			●	0.0012	0.250	0.094	0.109
		TCGT 21.5**V FL-J10**	TCGT110**200FL-J10**		●	●			●	0.0012	0.250	0.094	0.109
		TCGT 21.5**0 FR-J10**	TCGT110**201FR-J10**	●	●	●			●	0.004	0.250	0.094	0.109
		TCGT 21.5**0 FL-J10**	TCGT110**201FL-J10**		●	●			●	0.004	0.250	0.094	0.109
		TCGT 21.5**0.5 FR-J10**	TCGT110**202FR-J10**	●	●	●		●	●	0.008	0.250	0.094	0.109
		TCGT 21.5**0.5 FL-J10**	TCGT110**202FL-J10**	●	●	●		●	●	0.008	0.250	0.094	0.109
		TCGT 21.5**1 FR-J10**	TCGT110**204FR-J10**	●	●					0.016	0.250	0.094	0.109
		TCGT 22V FR-J10	**TCGT110300FR-J10**	●	●	●			●	0.0012	0.250	0.125	0.109
		TCGT 22**V FL-J10**	TCGT1103**00FL-J10**		●	●			●	0.0012	0.250	0.125	0.109
		TCGT 22**0 FR-J10**	TCGT1103**01FR-J10**	●	●	●			●	0.004	0.250	0.125	0.109
		TCGT 22**0 FL-J10**	TCGT1103**01FL-J10**		●	●			●	0.004	0.250	0.125	0.109
		TCGT 22**0.5 FR-J10**	TCGT1103**02FR-J10**	●	●	●		●	●	0.008	0.250	0.125	0.109
		TCGT 22**0.5 FL-J10**	TCGT1103**02FL-J10**	●	●	●		●	●	0.008	0.250	0.125	0.109
Finishing	**J10**	**TCGT 220.5 R-J10**	**TCGT110302R-J10**				●			0.008	0.250	0.125	0.109
		TCGT 22**0.5 L-J10**	TCGT1103**02L-J10**				●			0.008	0.250	0.125	0.109
	W15	**TCGT 32.50.5 L-W15**	**TCGT16T302L-W15**						●	0.008	0.375	0.156	0.173
		TCGT 32.5**1 L-W15**	TCGT16T3**04L-W15**					●	●	0.016	0.375	0.156	0.173
		TCGT 32.5**2 L-W15**	TCGT16T3**08L-W15**						●	0.031	0.375	0.156	0.173



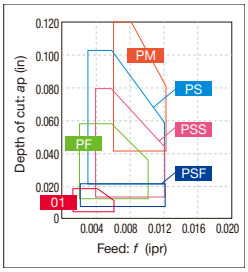


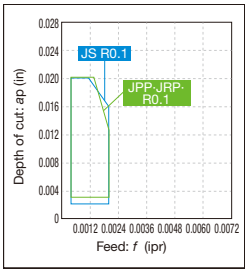


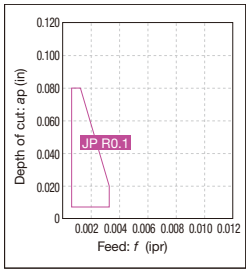


● : Line up

Chip control range







Reference pages: External toolholder → C098 - Internal toolholder → D056
J-Series toolholder → G054 -

Insert POSITIVE TYPE

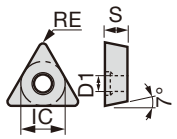
● : Continuous cutting
c : Light interrupted cutting
✣ : Heavy interrupted cutting

TC



Triangular with hole Positive 7°

		T9215	T9225	T6215	T505	T515	T5115	AH8015	AH6225	AH6235	AH725	GH730	GT9530	AT9530	NS9530	KS05F
P	Steel	●c	c✣	c					c✣	✣	c	c	●c	●c		●c
M	Stainless	●c		●				c	●c	✣	c	c				●c
K	Cast iron	●c			●	●c	c				c	c	●c	●c		●c
N	Non-ferrous															●
S	Superalloy							c			●					●
H	Hard material															



Application	Chipbreaker	Designation Inch	Designation Metric	Coated										Coated cermet		Cermet	Uncoated	Dimension (in)			
				T9215	T9225	T6215	T505	T515	T5115	AH8015	AH6225	AH6235	AH725	GH730	GT9530	AT9530	NS9530	KS05F	RE	IC	S	D1
Finishing	PSS	TCMT 731 PSS	TCMT090204-PSS	●	●								●						0.016	0.219	0.094	0.098
		TCMT 732 PSS	TCMT090208-PSS	●	●								●						0.031	0.219	0.094	0.098
		TCMT 21.51 PSS	TCMT110204-PSS	●	●								●						0.016	0.250	0.094	0.109
		TCMT 21.52 PSS	TCMT110208-PSS	●	●								●						0.031	0.250	0.094	0.109
		TCMT 221 PSS	TCMT110304-PSS	●	●								●						0.016	0.250	0.125	0.109
		TCMT 222 PSS	TCMT110308-PSS	●	●								●						0.031	0.250	0.125	0.109
		TCMT 32.51 PSS	TCMT16T304-PSS	●	●								●						0.016	0.375	0.156	0.173
		TCMT 32.52 PSS	TCMT16T308-PSS	●	●								●						0.031	0.375	0.156	0.173
		TCMT 32.53 PSS	TCMT16T312-PSS	●	●								●						0.047	0.375	0.156	0.173
	PS	TCMT 731 PS	TCMT090204-PS										●						0.016	0.219	0.094	0.098
		TCMT 732 PS	TCMT090208-PS										●						0.031	0.219	0.094	0.098
		TCMT 21.50.5 PS	TCMT110202-PS	●	●	●					●	●	●	●	●	●	●		0.008	0.250	0.094	0.109
		TCMT 21.51 PS	TCMT110204-PS	●	●	●					●	●	●	●	●	●	●		0.016	0.250	0.094	0.109
		TCMT 21.52 PS	TCMT110208-PS	●	●	●					●	●	●	●	●	●	●		0.031	0.250	0.094	0.109
		TCMT 220.5 PS	TCMT110302-PS	●	●	●				●	●	●					●		0.008	0.250	0.125	0.109
		TCMT 221 PS	TCMT110304-PS	●	●	●				●	●	●					●		0.016	0.250	0.125	0.109
		TCMT 222 PS	TCMT110308-PS	●	●	●				●	●	●					●		0.031	0.250	0.125	0.109
		TCMT 32.50.5 PS	TCMT16T302-PS	●	●	●					●	●	●				●		0.008	0.375	0.156	0.173
		TCMT 32.51 PS	TCMT16T304-PS	●	●	●					●	●	●				●		0.016	0.375	0.156	0.173
		TCMT 32.52 PS	TCMT16T308-PS	●	●	●					●	●	●						0.031	0.375	0.156	0.173
	TM	TCMT 21.51 TM	TCMT110204-TM	●	●					●									0.016	0.250	0.094	0.109
		TCMT 21.52 TM	TCMT110208-TM	●	●					●									0.031	0.250	0.094	0.109
		TCMT 220.5 TM	TCMT110302-TM	●	●	●				●	●						●		0.008	0.250	0.125	0.109
		TCMT 221 TM	TCMT110304-TM	●	●	●				●	●						●		0.016	0.250	0.125	0.109
		TCMT 222 TM	TCMT110308-TM	●	●	●				●	●						●		0.031	0.250	0.125	0.109
		TCMT 32.51 TM	TCMT16T304-TM	●	●					●									0.016	0.375	0.156	0.173
		TCMT 32.52 TM	TCMT16T308-TM	●	●					●									0.031	0.375	0.156	0.173
Finishing to medium cutting	CM	TCMT 731 CM	TCMT090204-CM						●										0.016	0.219	0.094	0.098
		TCMT 732 CM	TCMT090208-CM						●										0.031	0.219	0.094	0.098
		TCMT 21.51 CM	TCMT110204-CM						●										0.016	0.250	0.094	0.109
		TCMT 21.52 CM	TCMT110208-CM						●										0.031	0.250	0.094	0.109
		TCMT 221 CM	TCMT110304-CM						●										0.016	0.250	0.125	0.109
		TCMT 222 CM	TCMT110308-CM						●										0.031	0.250	0.125	0.109
		TCMT 32.51 CM	TCMT16T304-CM				●	●	●										0.016	0.375	0.156	0.173
		TCMT 32.52 CM	TCMT16T308-CM				●	●	●										0.031	0.375	0.156	0.173
		TCMT 32.53 CM	TCMT16T312-CM				●	●	●										0.047	0.375	0.156	0.173
Finishing to medium cutting for aluminum cutting	AL	TCGT 21.50.5 AL	TCGT110202-AL															●	0.008	0.250	0.094	0.109
		TCGT 21.51 AL	TCGT110204-AL															●	0.016	0.250	0.094	0.109
		TCGT 32.50.5 AL	TCGT16T302-AL															●	0.008	0.375	0.156	0.173
		TCGT 32.51 AL	TCGT16T304-AL															●	0.016	0.375	0.156	0.173
		TCGT 32.52 AL	TCGT16T308-AL															●	0.031	0.375	0.156	0.173

● : Line up

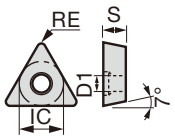
Reference pages: External toolholder → C098 - Internal toolholder → D056
J-Series toolholder → G054 -

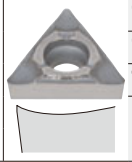
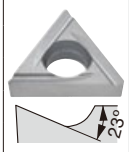
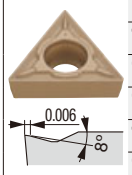
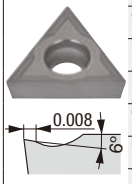
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC

Triangular with hole Positive 7°

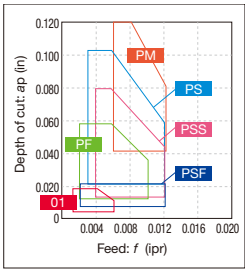
P	Steel	●ɔ	ɔ✠	ɔ	ɔ✠	✠	ɔ								●				
M	Stainless	●ɔ		●	●ɔ	✠	ɔ								●				
K	Cast iron	●ɔ					ɔ								●	●			
N	Non-ferrous														●	●			
S	Superalloy						●									●			
H	Hard material																		

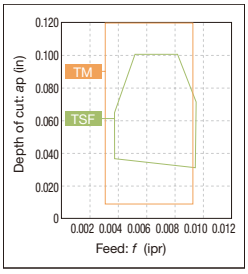


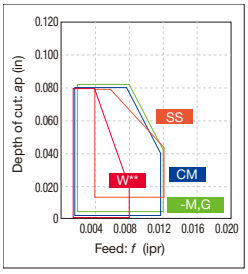
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH6225	AH6235	AH725	Cermet NS9530	Uncoated TH10	KS05F	Dimension (in) RE	IC	S	D1
Finishing	**SS**	**TCGT 21.50.5 SS**	**TCGT110202-SS**							●			0.008	0.250	0.094	0.109
		TCGT 21.51 SS	TCGT110204-SS							●			0.016	0.250	0.094	0.109
		TCGT 21.52 SS	TCGT110208-SS							●			0.031	0.250	0.094	0.109
		TCGT 32.51 SS	**TCGT16T304-SS**							●			0.016	0.375	0.156	0.173
Finishing to medium cutting	**23**	**TCMT 731-23**	**TCMT090204-23**		●					●			0.016	0.219	0.094	0.098
		**TCMT 21.51-23**	**TCMT110204-23**							●			0.016	0.250	0.094	0.109
		TCMT 32.51-23	**TCMT16T304-23**							●			0.016	0.375	0.156	0.173
		TCMT 32.52-23	TCMT16T308-23		●								0.031	0.375	0.156	0.173
	-	**TCGT 620.5 R**	**TCGT080102R**							●		●	0.008	0.187	0.063	0.106
																
Medium cutting	**PM**	**TCMT 21.50.5 PM**	**TCMT110202-PM**			●	●	●	●				0.008	0.250	0.094	0.109
		TCMT 21.51 PM	TCMT110204-PM	●	●	●	●	●	●	●			0.016	0.250	0.094	0.109
		TCMT 21.52 PM	TCMT110208-PM	●	●	●	●	●	●	●			0.031	0.250	0.094	0.109
		**TCMT 220.5 PM**	**TCMT110302-PM**			●	●	●					0.008	0.250	0.125	0.109
		TCMT 221 PM	TCMT110304-PM			●	●	●					0.016	0.250	0.125	0.109
		TCMT 222 PM	TCMT110308-PM			●	●	●					0.031	0.250	0.125	0.109
		TCMT 32.51 PM	**TCMT16T304-PM**	●	●	●	●	●	●	●			0.016	0.375	0.156	0.173
		TCMT 32.52 PM	TCMT16T308-PM	●	●	●	●	●	●	●			0.031	0.375	0.156	0.173
		TCMT 32.53 PM	TCMT16T312-PM	●	●	●	●	●	●				0.047	0.375	0.156	0.173
	24	**TCMT 730.5-24**	**TCMT090202-24**							●			0.008	0.219	0.094	0.098
		TCMT 731-24	TCMT090204-24	●	●					●			0.016	0.219	0.094	0.098
		**TCMT 21.50.5-24**	**TCMT110202-24**							●			0.008	0.250	0.094	0.109
		TCMT 21.51-24	TCMT110204-24	●	●					●			0.016	0.250	0.094	0.109
		TCMT 21.52-24	TCMT110208-24		●								0.031	0.250	0.094	0.109
		TCMT 32.51-24	**TCMT16T304-24**	●	●					●			0.016	0.375	0.156	0.173
		TCMT 32.52-24	TCMT16T308-24	●	●				●				0.031	0.375	0.156	0.173

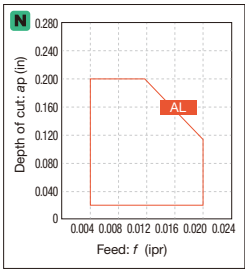
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C098 - Internal toolholder → D056
J-Series toolholder → G054 -

Insert POSITIVE TYPE

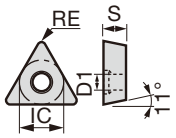
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular with hole Positive 11°

P	Steel	●ɔ ✣ ɔ ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●
M	Stainless	●ɔ ɔ ɔ ●ɔ ●ɔ ●ɔ ●
K	Cast iron	●ɔ ɔ ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	● ɔ ●ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated AH725	Coated GH730	Coated SH7025	Coated SH725	Coated SH730	Coated cermet GT9530	Coated cermet GT720	Cermet NS9530	Cermet NS520	Uncoated TH10	Dimension (in) RE	IC	S	D1
Precision finishing	01	TPGT 730.5-01	TPGT090202-01								●		●			0.008	0.219	0.094	0.098
		TPGT 731-01	TPGT090204-01								●		●	●	●	0.016	0.219	0.094	0.098
		TPGT 21.50.5-01	TPGT110202-01								●		●			0.008	0.250	0.094	0.109
		TPGT 21.51-01	TPGT110204-01								●		●	●	●	0.016	0.250	0.094	0.109
		TPGT 21.52-01	TPGT110208-01										●			0.031	0.250	0.094	0.109
		TPGT 2.520.5-01	TPGT130302-01									●	●			0.008	0.313	0.125	0.134
		TPGT 2.521-01	TPGT130304-01								●		●	●	●	0.016	0.313	0.125	0.134
		TPGT 2.522-01	TPGT130308-01										●	●		0.031	0.313	0.125	0.134
		TPGT 32.51-01	TPGT16T304-01								●		●	●	●	0.016	0.375	0.156	0.173
		TPGT 32.52-01	TPGT16T308-01									●	●	●		0.031	0.375	0.156	0.173
Finishing (sharp edge)	JS	TPGT 5.520 F-JS	TPGT070101F-JS					●	●							<0.004	0.172	0.063	0.102
		TPGT 5.520.5 F-JS	TPGT070102F-JS					●	●							<0.008	0.172	0.063	0.102
		TPGT 5.521 F-JS	TPGT070104F-JS					●	●							<0.016	0.172	0.063	0.102
Finishing	JS	TPGT 5.520 JS	TPGT070101-JS							●						<0.004	0.172	0.063	0.102
		TPGT 5.520.5 JS	TPGT070102-JS							●						<0.008	0.172	0.063	0.102
		TPGT 5.521 JS	TPGT070104-JS							●						<0.016	0.172	0.063	0.102
	PSF	TPMT 730.5 PSF	TPMT090202-PSF			●							●			0.008	0.219	0.094	0.098
		TPMT 731 PSF	TPMT090204-PSF	●	●	●					●		●			0.016	0.219	0.094	0.098
		TPMT 21.50.5 PSF	TPMT110202-PSF			●					●		●			0.008	0.250	0.094	0.109
		TPMT 21.51 PSF	TPMT110204-PSF	●	●	●					●		●			0.016	0.250	0.094	0.109
		TPMT 220.5 PSF	TPMT110302-PSF			●							●			0.008	0.250	0.125	0.134
		TPMT 221 PSF	TPMT110304-PSF	●	●	●					●		●			0.016	0.250	0.125	0.134
		TPMT 2.521 PSF	TPMT130304-PSF	●	●	●										0.016	0.313	0.125	0.134
		TPMT 32.51 PSF	TPMT16T304-PSF	●	●	●										0.016	0.375	0.156	0.173
	PF	TPMT 21.51 PF	TPMT110204-PF				●				●		●			0.016	0.250	0.094	0.109
		TPMT 21.52 PF	TPMT110208-PF								●		●			0.031	0.250	0.094	0.109
		TPMT 220.5 PF	TPMT110302-PF				●						●			0.008	0.250	0.125	0.134
		TPMT 221 PF	TPMT110304-PF				●				●		●			0.016	0.250	0.125	0.134
		TPMT 2.521 PF	TPMT130304-PF								●		●			0.016	0.313	0.125	0.134
		TPMT 2.522 PF	TPMT130308-PF										●			0.031	0.313	0.125	0.134
		TPMT 32.51 PF	TPMT16T304-PF								●		●			0.016	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

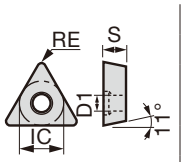
Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP

Triangular
with hole
Positive 11°

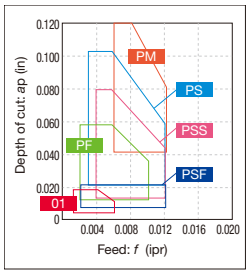
P	Steel	●ⓒ ⓒ✠ ⓒ ⓒ✠ ● ●ⓒ ●ⓒ ●ⓒ ●ⓒ ● ⓒ
M	Stainless	●ⓒ ● ⓒ ●ⓒ ● ●ⓒ ●ⓒ ●ⓒ ● ⓒ
K	Cast iron	●ⓒ ● ●ⓒ ●ⓒ ●
N	Non-ferrous	●
S	Superalloy	ⓒ ● ●ⓒ
H	Hard material	

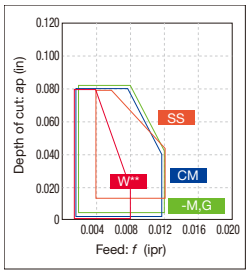


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8015	AH6225	GH110	SH725	SH730	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	UX30	Dimension (in) RE	IC	S	D1
Finishing	TSF	TPMT 21.51 TSF	TPMT110204-TSF	●	●											0.016	0.250	0.094	0.109
		TPMT 21.52 TSF	TPMT110208-TSF	●	●											0.031	0.250	0.094	0.109
		TPMT 220.5 TSF	TPMT110302-TSF	●	●	●	●	●					●			0.008	0.250	0.125	0.134
		TPMT 221 TSF	TPMT110304-TSF	●	●	●	●	●					●			0.016	0.250	0.125	0.134
		TPMT 222 TSF	TPMT110308-TSF	●	●	●	●	●					●			0.031	0.250	0.125	0.134
		TPMT 32.51 TSF	TPMT16T304-TSF	●	●											0.016	0.375	0.156	0.173
		TPMT 32.52 TSF	TPMT16T308-TSF	●	●											0.031	0.375	0.156	0.173
Finishing (sharp edge)	W08	TPGT 5.52V FR-W08	TPGT070100FR-W08							●						0.0012	0.172	0.063	0.102
		TPGT 5.52V FL-W08	TPGT070100FL-W08							●						0.0012	0.172	0.063	0.102
		TPGT 5.520 FR-W08	TPGT070101FR-W08							●						0.004	0.172	0.063	0.102
		TPGT 5.520 FL-W08	TPGT070101FL-W08							●						0.004	0.172	0.063	0.102
		TPGT 5.520.5 FR-W08	TPGT070102FR-W08							●						0.008	0.172	0.063	0.102
		TPGT 5.520.5 FL-W08	TPGT070102FL-W08							●						0.008	0.172	0.063	0.102
		TPGT 5.521 FR-W08	TPGT070104FR-W08							●						0.016	0.172	0.063	0.102
		TPGT 5.521 FL-W08	TPGT070104FL-W08							●						0.016	0.172	0.063	0.102
Finishing	W08	TPGT 5.52V R-W08	TPGT070100R-W08								●			●		0.0012	0.172	0.063	0.102
		TPGT 5.52V L-W08	TPGT070100L-W08								●			●		0.0012	0.172	0.063	0.102
		TPGT 5.520 R-W08	TPGT070101R-W08								●			●		0.004	0.172	0.063	0.102
		TPGT 5.520 L-W08	TPGT070101L-W08								●			●		0.004	0.172	0.063	0.102
		TPGT 5.520.5 R-W08	TPGT070102R-W08								●			●		0.008	0.172	0.063	0.102
		TPGT 5.520.5 L-W08	TPGT070102L-W08								●			●		0.008	0.172	0.063	0.102
		TPGT 5.521 R-W08	TPGT070104R-W08								●			●		0.016	0.172	0.063	0.102
		TPGT 5.521 L-W08	TPGT070104L-W08								●			●		0.016	0.172	0.063	0.102
		TPGT 63V L-W08	TPGT080200L-W08									●	●			0.0012	0.187	0.094	0.091
		TPGT 630.5 L-W08	TPGT080202L-W08						●			●	●	●	●	0.008	0.187	0.094	0.091
		TPGT 631 L-W08	TPGT080204L-W08						●			●	●	●	●	0.016	0.187	0.094	0.091
	W10	TPGH 630.5 L-W10	TPGH080202L-W10									●	●			0.008	0.187	0.094	0.091
		TPGH 631 L-W10	TPGH080204L-W10									●	●			0.016	0.187	0.094	0.091
		TPGH 731 L-W10	TPGH090204L-W10									●	●			0.016	0.219	0.094	0.118

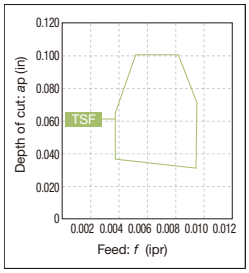
● : Line up

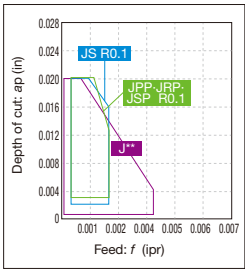
Chip control range





*-M,G: Without chipbreaker





*Chip control range with typical R0.1

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular with hole Positive 11°

| | | |

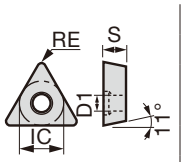
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular with hole Positive 11°

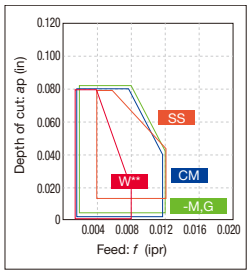
P	Steel	●ɔ ɔ✣ ɔ ✣ ɔ✣ ✣ ɔ ●ɔ ɔ
M	Stainless	●ɔ ● ● ɔ ●ɔ ✣ ɔ ●ɔ ɔ
K	Cast iron	●ɔ ɔ ●ɔ ɔ
N	Non-ferrous	
S	Superalloy	● ɔ ● ●ɔ
H	Hard material	

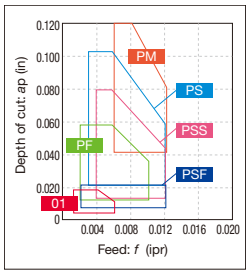


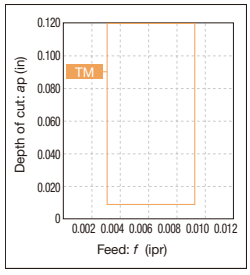
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8005	AH8015	AH6225	AH6235	AH725	AH120	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**PSS**	**TPMT 731 PSS**	**TPMT090204-PSS**	●	●	●			●	●	●		●	●		●	0.016	0.219	0.094	0.098
		TPMT 732 PSS	TPMT090208-PSS	●	●	●			●	●	●			●		●	0.031	0.219	0.094	0.098
		TPMT 21.51 PSS	**TPMT110204-PSS**	●	●	●			●	●	●			●		●	0.016	0.250	0.094	0.109
		TPMT 21.52 PSS	TPMT110208-PSS	●	●	●			●	●	●			●		●	0.031	0.250	0.094	0.109
		TPMT 221 PSS	**TPMT110304-PSS**	●	●	●			●	●	●						0.016	0.250	0.125	0.134
		TPMT 222 PSS	TPMT110308-PSS	●	●	●			●	●	●						0.031	0.250	0.125	0.134
		TPMT 2.521 PSS	**TPMT130304-PSS**	●	●	●			●	●	●						0.016	0.313	0.125	0.134
		TPMT 2.522 PSS	TPMT130308-PSS	●	●	●			●	●	●			●		●	0.031	0.313	0.125	0.134
		TPMT 32.51 PSS	**TPMT16T304-PSS**	●	●	●			●	●	●			●		●	0.016	0.375	0.156	0.173
		TPMT 32.52 PSS	TPMT16T308-PSS	●	●	●			●	●	●			●		●	0.031	0.375	0.156	0.173
	PS	**TPMT 730.5 PS**	**TPMT090202-PS**	●	●	●			●	●	●		●	●	●	●	0.008	0.219	0.094	0.098
		TPMT 731 PS	TPMT090204-PS	●	●	●			●	●	●		●	●	●	●	0.016	0.219	0.094	0.098
		TPMT 732 PS	TPMT090208-PS	●	●	●			●	●	●		●	●	●	●	0.031	0.219	0.094	0.098
		TPMT 21.50.5 PS	**TPMT110202-PS**	●	●	●			●	●	●		●	●	●	●	0.008	0.250	0.094	0.109
		TPMT 21.51 PS	TPMT110204-PS	●	●	●			●	●	●	●	●	●	●	●	0.016	0.250	0.094	0.109
		TPMT 21.52 PS	TPMT110208-PS	●	●	●			●	●	●	●	●	●	●	●	0.031	0.250	0.094	0.109
		TPMT 220.5 PS	**TPMT110302-PS**	●	●	●		●	●							●	0.008	0.250	0.125	0.134
		TPMT 221 PS	TPMT110304-PS	●	●	●		●	●	●	●		●	●	●	●	0.016	0.250	0.125	0.134
		TPMT 222 PS	TPMT110308-PS	●	●	●	●	●	●	●	●		●	●	●	●	0.031	0.250	0.125	0.134
		TPMT 2.520.5 PS	**TPMT130302-PS**	●	●						●			●	●	●	0.008	0.313	0.125	0.134
		TPMT 2.521 PS	TPMT130304-PS	●	●	●			●	●	●			●	●	●	0.016	0.313	0.125	0.134
		TPMT 2.522 PS	TPMT130308-PS	●	●	●			●	●	●			●	●	●	0.031	0.313	0.125	0.134
		TPMT 32.51 PS	**TPMT16T304-PS**	●	●	●			●	●	●			●	●	●	0.016	0.375	0.156	0.173
		TPMT 32.52 PS	TPMT16T308-PS	●	●	●			●	●	●			●	●	●	0.031	0.375	0.156	0.173
	TM	**TPMT 21.51 TM**	**TPMT110204-TM**	●	●												0.016	0.250	0.094	0.109
		TPMT 21.52 TM	TPMT110208-TM	●	●												0.031	0.250	0.094	0.109
		TPMT 220.5 TM	**TPMT110302-TM**	●	●	●		●	●							●	0.008	0.250	0.125	0.134
		TPMT 221 TM	TPMT110304-TM	●	●	●		●	●							●	0.016	0.250	0.125	0.134
		TPMT 222 TM	TPMT110308-TM	●	●	●		●	●							●	0.031	0.250	0.125	0.134
		TPMT 32.51 TM	**TPMT16T304-TM**	●	●												0.016	0.375	0.156	0.173
		TPMT 32.52 TM	TPMT16T308-TM	●	●												0.031	0.375	0.156	0.173

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

Insert POSITIVE TYPE

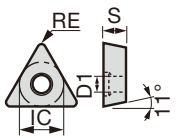
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

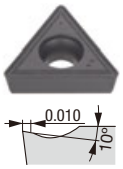
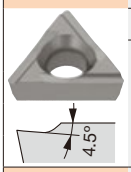
TP



Triangular with hole Positive 11°

P	Steel	ɔ✠							●ɔ				●ɔ				●	ɔ			
M	Stainless																●	ɔ			
K	Cast iron			●	●ɔ	ɔ			●ɔ				●ɔ				●				
N	Non-ferrous																●				
S	Superalloy																				
H	Hard material																				

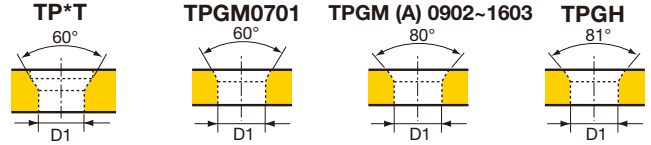


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T505	Coated T515	Coated T5115	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**CM**	**TPMT 731 CM**	**TPMT090204-CM**				●					0.016	0.219	0.094	0.098
		TPMT 732 CM	TPMT090208-CM				●					0.031	0.219	0.094	0.098
		TPMT 21.51 CM	**TPMT110204-CM**				●					0.016	0.250	0.094	0.109
		TPMT 21.52 CM	TPMT110208-CM				●					0.031	0.250	0.094	0.109
		TPMT 221 CM	**TPMT110304-CM**				●					0.016	0.250	0.125	0.134
		TPMT 222 CM	TPMT110308-CM				●					0.031	0.250	0.125	0.134
		TPMT 2.521 CM	**TPMT130304-CM**				●					0.016	0.313	0.125	0.134
		TPMT 2.522 CM	TPMT130308-CM				●					0.031	0.313	0.125	0.134
		TPMT 32.51 CM	**TPMT16T304-CM**		●	●	●					0.016	0.375	0.156	0.173
		TPMT 32.52 CM	TPMT16T308-CM		●	●	●					0.031	0.375	0.156	0.173
		TPMT 32.53 CM	TPMT16T312-CM		●	●	●					0.047	0.375	0.156	0.173
	H11	**TPGH 220.5 L-H11**	**TPGH110302L-H11**					●	●			0.008	0.250	0.125	0.134
		TPGH 221 L-H11	TPGH110304L-H11					●	●			0.016	0.250	0.125	0.134
	23	**TPMT 730.5-23**	**TPMT090202-23**						●			0.008	0.219	0.094	0.098
		TPMT 731-23	TPMT090204-23	●					●			0.016	0.219	0.094	0.098
		TPMT 21.51-23	**TPMT110204-23**	●					●			0.016	0.250	0.094	0.109
		TPMT 2.521-23	**TPMT130304-23**	●					●			0.016	0.313	0.125	0.134
		TPMT 2.522-23	TPMT130308-23	●					●			0.031	0.313	0.125	0.134
		TPMT 32.51-23	**TPMT16T304-23**						●			0.016	0.375	0.156	0.173
		TPMT 32.52-23	TPMT16T308-23	●					●			0.031	0.375	0.156	0.173
Finishing to medium cutting	**-**	**TPGM 5.520.5 R**	**TPGM070102R**						●			0.008	0.172	0.063	0.106
	(Tungaloy standard hole specification) ISO non-compliant	TPGM 5.520.5 L	TPGM070102L						●	●		0.008	0.172	0.063	0.106
		TPGM 5.521 R	**TPGM070104R**						●			0.016	0.172	0.063	0.106
		TPGM 5.521 L	TPGM070104L						●	●		0.016	0.172	0.063	0.106
		TPGM 730.5 R	**TPGM090202R**						●			0.008	0.219	0.094	0.125
		TPGM 730.5 L	TPGM090202L						●			0.008	0.219	0.094	0.125
		TPGM 731 L	TPGM090204L						●			0.016	0.219	0.094	0.125
		TPGM 21.50.5 R	**TPGM110202R**						●			0.008	0.250	0.094	0.118
		TPGM 21.50.5 L	TPGM110202L						●		●	0.008	0.250	0.094	0.118
		TPGM 21.51 R	**TPGM110204R**						●			0.016	0.250	0.094	0.118
		TPGM 21.51 L	TPGM110204L						●		●	0.016	0.250	0.094	0.118
		TPGM 220.5 R	**TPGM110302R**						●			0.008	0.250	0.125	0.118
		TPGM 220.5 L	TPGM110302L						●			0.008	0.250	0.125	0.118
		TPGM 220.5 L-2	TPGM110302L-2							●		0.008	0.250	0.125	0.118
		TPGM 221 R	**TPGM110304R**						●			0.016	0.250	0.125	0.118
		TPGM 221 L	TPGM110304L						●		●	0.016	0.250	0.125	0.118
		TPGM 221 L-2	TPGM110304L-2							●		0.016	0.250	0.125	0.118
		TPGM 320.5 L	**TPGM160302L**						●			0.008	0.375	0.125	0.157
		TPGM 321 R	TPGM160304R						●			0.016	0.375	0.125	0.157
		TPGM 321 L	TPGM160304L						●		●	0.016	0.375	0.125	0.157
		TPGM 321 L-2	TPGM160304L-2							●		0.016	0.375	0.125	0.157



● : Line up

Mounting hole specification



D1 (in)	0701**	0802**	0902**	1102**	1103**	1303**	1603**	16T3**
TP*T(W)	-	0.091	0.098	0.110	0.134	0.134	-	0.173
TPGM(A)	0.106	-	0.126	0.118	0.118	-	0.157	-
TPGH	-	0.091	0.118	0.134	0.134	-	0.177	-

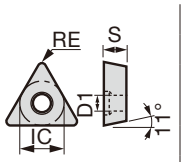
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

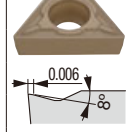
Triangular with hole Positive 11°

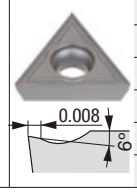


P	Steel	●ɔ	ɔ✣	ɔ		ɔ✣	✣	ɔ	●ɔ	ɔ	●	●ɔ			●ɔ			●		
M	Stainless	●ɔ		●		●ɔ	✣	ɔ	●ɔ	ɔ	●							●		
K	Cast iron	●ɔ			ɔ			ɔ	●ɔ	ɔ	●	●ɔ			●ɔ			●		
N	Non-ferrous																	●		
S	Superalloy							●	●ɔ		●									
H	Hard material																			



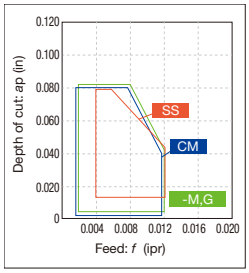
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T5115	AH6225	AH6235	AH725	AH120	GH730	GH110	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	TPMW 21.51	TPMW110204				●										0.016	0.250	0.094	0.109
		TPMW 21.52	TPMW110208				●										0.031	0.250	0.094	0.109
		TPMW 2.521	TPMW130304				●										0.016	0.313	0.125	0.134
		TPMW 2.522	TPMW130308				●										0.031	0.313	0.125	0.134
		TPMW 32.51	TPMW16T304				●										0.016	0.375	0.156	0.173
		TPMW 32.52	TPMW16T308				●										0.031	0.375	0.156	0.173
	-	TPGA 731	TPGA090204													●	0.016	0.219	0.094	0.125
	(Tungaloy standard hole specification) ISO non-compliant	TPGA 21.50.5	TPGA110202												●	●	0.008	0.250	0.094	0.118
		TPGA 21.51	TPGA110204													●	0.016	0.250	0.094	0.118
		TPGA 220.5	TPGA110302												●	●	0.008	0.250	0.125	0.118
		TPGA 221	TPGA110304													●	0.016	0.250	0.125	0.118
		TPGA 321	TPGA160304												●	●	0.016	0.375	0.125	0.157
		TPGA 322	TPGA160308													●	0.031	0.375	0.125	0.157
	-	TPGW 730.5	TPGW090202												●	●	0.008	0.219	0.094	0.098
		TPGW 731	TPGW090204													●	0.016	0.219	0.094	0.098
		TPGW 21.50.5	TPGW110202													●	0.008	0.250	0.094	0.109
		TPGW 21.51	TPGW110204										●			●	0.016	0.250	0.094	0.109
		TPGW 221	TPGW110304													●	0.016	0.250	0.125	0.134
		TPGW 2.521	TPGW130304													●	0.016	0.313	0.125	0.134
		TPGW 32.51	TPGW16T304										●			●	0.016	0.375	0.156	0.173
		TPGW 32.52	TPGW16T308													●	0.031	0.375	0.156	0.173
Medium cutting	PM	TPMT 731 PM	TPMT090204-PM			●		●	●	●							0.016	0.219	0.094	0.098
		TPMT 732 PM	TPMT090208-PM			●		●	●	●							0.031	0.219	0.094	0.098
		TPMT 21.51 PM	TPMT110204-PM	●	●	●		●	●	●		●		●			0.016	0.250	0.094	0.109
		TPMT 21.52 PM	TPMT110208-PM	●	●	●		●	●	●	●	●					0.031	0.250	0.094	0.109
		TPMT 221 PM	TPMT110304-PM	●	●	●		●	●	●		●		●			0.016	0.250	0.125	0.134
		TPMT 222 PM	TPMT110308-PM	●	●	●		●	●	●		●					0.031	0.250	0.125	0.134
		TPMT 2.521 PM	TPMT130304-PM		●	●		●	●	●					●		0.016	0.313	0.125	0.134
		TPMT 2.522 PM	TPMT130308-PM		●	●		●	●	●				●	●		0.031	0.313	0.125	0.134
		TPMT 32.51 PM	TPMT16T304-PM		●	●		●	●	●					●		0.016	0.375	0.156	0.173
		TPMT 32.52 PM	TPMT16T308-PM		●	●		●	●	●							0.031	0.375	0.156	0.173
		TPMT 32.53 PM	TPMT16T312-PM		●	●		●	●	●							0.047	0.375	0.156	0.173
	24	TPMT 731-24	TPMT090204-24		●										●		0.016	0.219	0.094	0.098
		TPMT 21.51-24	TPMT110204-24		●										●		0.016	0.250	0.094	0.109
		TPMT 21.52-24	TPMT110208-24												●		0.031	0.250	0.094	0.109
		TPMT 2.521-24	TPMT130304-24		●										●		0.016	0.313	0.125	0.134
		TPMT 2.522-24	TPMT130308-24		●										●		0.031	0.313	0.125	0.134
		TPMT 32.51-24	TPMT16T304-24		●										●		0.016	0.375	0.156	0.173
		TPMT 32.52-24	TPMT16T308-24		●										●		0.031	0.375	0.156	0.173





● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D057 -

Insert POSITIVE TYPE

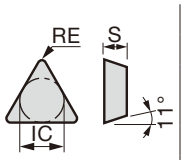
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular without hole Positive 11°

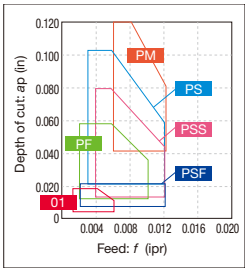
P	Steel	●ᑕ	●✠		●ᑕ	●	●		●ᑕ	ᑕ			●	ᑕ							
M	Stainless	●ᑕ			●ᑕ	●	●						●	ᑕ							
K	Cast iron	●ᑕ		ᑕ	●ᑕ	●	●		●ᑕ	ᑕ			●								
N	Non-ferrous												●								
S	Superalloy				●ᑕ	●	●														
H	Hard material																				

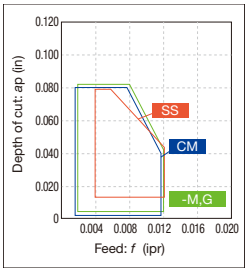


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T5115	Coated T3130	Coated AH120	Coated GH110	Cermet NS9530	Cermet NS740	Uncoated TH10	Uncoated UX30	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	PS	TPMR 221 PS	TPMR110304-PS		●									0.016	0.250	0.125	-
		TPMR 222 PS	TPMR110308-PS		●									0.031	0.250	0.125	-
		TPMR 321 PS	TPMR160304-PS		●									0.016	0.375	0.125	-
		TPMR 322 PS	TPMR160308-PS		●									0.031	0.375	0.125	-
	CM	TPMR 221 CM	TPMR110304-CM			●								0.016	0.250	0.125	-
		TPMR 222 CM	TPMR110308-CM			●								0.031	0.250	0.125	-
		TPMR 321 CM	TPMR160304-CM			●								0.016	0.375	0.125	-
		TPMR 322 CM	TPMR160308-CM			●								0.031	0.375	0.125	-
		TPMR 323 CM	TPMR160312-CM			●								0.047	0.375	0.125	-
	23	TPMR 221-23	TPMR110304-23	●	●					●				0.016	0.250	0.125	-
		TPMR 222-23	TPMR110308-23		●					●		●		0.031	0.250	0.125	-
		TPMR 321-23	TPMR160304-23	●	●					●		●		0.016	0.375	0.125	-
		TPMR 322-23	TPMR160308-23		●					●				0.031	0.375	0.125	-
	-	TPGR 220.5 L	TPGR110302L							●				0.008	0.250	0.125	-
		TPGR 221 L	TPGR110304L							●				0.016	0.250	0.125	-
		TPGR 321 R	TPGR160304R							●				0.016	0.375	0.125	-
		TPGR 321 L	TPGR160304L							●				0.016	0.375	0.125	-
		TPGR 322 L	TPGR160308L							●				0.031	0.375	0.125	-
	-	TPMN 221	TPMN110304			●					●	●		0.016	0.250	0.125	-
		TPMN 222	TPMN110308			●						●	●	0.031	0.250	0.125	-
		TPMN 321	TPMN160304			●	●	●			●	●	●	0.016	0.375	0.125	-
		TPMN 322	TPMN160308			●	●	●			●	●	●	0.031	0.375	0.125	-
		TPMN 323	TPMN160312			●	●						●	0.047	0.375	0.125	-
		TPMN 431	TPMN220404				●				●	●	●	0.016	0.500	0.187	
		TPMN 432	TPMN220408				●	●			●	●	●	0.031	0.500	0.187	-
		TPMN 433	TPMN220412				●				●	●	●	0.047	0.500	0.187	-

● : Line up

Chip control range





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D058

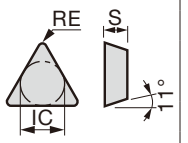
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

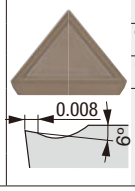


Triangular without hole Positive 11°

P	Steel	●ɔ ɔ✣ ɔ ● ● ●ɔ ɔ ● ɔ
M	Stainless	●ɔ ɔ ● ● ● ɔ
K	Cast iron	●ɔ ɔ ● ● ●ɔ ɔ ●
N	Non-ferrous	●
S	Superalloy	● ● ●
H	Hard material	ɔ ɔ ɔ



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T3130	Coated AH725	Coated GH110	Cermet NS9530	Cermet NS740	Uncoated TH10	Uncoated UX30	Ceramic LX10	Ceramic LX11	Ceramic LX21	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	-	TPGN 220.5	TPGN110302								●					0.008	0.250	0.125	-
		TPGN 221	TPGN110304					●		●	●		●	▲	●	0.016	0.250	0.125	-
		TPGN 222	TPGN110308							●	●	●	●	▲		0.031	0.250	0.125	-
		TPGN 320.5	TPGN160302								●					0.008	0.375	0.125	-
		TPGN 321	TPGN160304			●		●	●	●	●		●	▲		0.016	0.375	0.125	-
		TPGN 322	TPGN160308			●		●	●	●	●	●	●	▲		0.031	0.375	0.125	-
		TPGN 323	TPGN160312							●	●	●	●	▲		0.047	0.375	0.125	-
		TPGN 431	TPGN220404							●	●					0.016	0.500	0.187	-
		TPGN 432	TPGN220408			●				●	●	●				0.031	0.500	0.187	-
		TPGN 433	TPGN220412			●				●						0.047	0.500	0.187	-
Medium cutting	24	TPMR 221-24	TPMR110304-24		●				●							0.016	0.250	0.125	-
		TPMR 222-24	TPMR110308-24		●				●							0.031	0.250	0.125	-
		TPMR 321-24	TPMR160304-24	●	●		●		●							0.016	0.375	0.125	-
		TPMR 322-24	TPMR160308-24	●	●		●		●							0.031	0.375	0.125	-



● : Line up
▲ : To be discontinued

Reference pages: Internal toolholder → D058

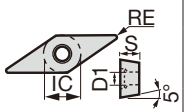
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

VB

Rhombic, 35°
with hole
Positive 5°

P	Steel	●ɔ	●✠	ɔ		ɔ✠	ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ		●ɔ			●			
M	Stainless	●ɔ		●	ɔ	●ɔ	ɔ	●ɔ	●ɔ	●ɔ	●ɔ							●			
K	Cast iron	●ɔ					ɔ					●ɔ	●ɔ		●ɔ			●			
N	Non-ferrous																	●			
S	Superalloy				ɔ		●			●ɔ											
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	AH8015	AH6225	AH725	SH7025	SH725	SH730	J740	Coated cermet GT9530	J9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Precision finishing (sharp edge)	**JP**	**VBGT 22V FN-JP**	**VBGT110300FN-JP**							●	●							<0.002	0.250	0.125	0.109
		VBGT 220 FN-JP	VBGT110301FN-JP							●	●							<0.004	0.250	0.125	0.109
		VBGT 220.5 FN-JP	VBGT110302FN-JP							●	●							<0.008	0.250	0.125	0.109
Finishing (sharp edge)	**JS**	**VBGT 22V FN-JS**	**VBGT110300FN-JS**							●	●	●						<0.002	0.250	0.125	0.109
		VBGT 220 FN-JS	VBGT110301FN-JS							●	●	●						<0.004	0.250	0.125	0.109
		VBGT 220.5 FN-JS	VBGT110302FN-JS							●	●	●						<0.008	0.250	0.125	0.109
		VBGT 221 FN-JS	VBGT110304FN-JS							●	●	●						<0.016	0.250	0.125	0.109
Finishing	**JS**	**VBGT 220 N-JS**	**VBGT110301N-JS**						●									0.004	0.250	0.125	0.109
		VBGT 220.5 N-JS	VBGT110302N-JS						●									0.008	0.250	0.125	0.109
		VBGT 221 N-JS	VBGT110304N-JS						●							●		0.016	0.250	0.125	0.109
	PSF	**VBMT 220.5 PSF**	**VBMT110302-PSF**						●					●		●		0.008	0.250	0.125	0.109
		VBMT 221 PSF	VBMT110304-PSF	●	●				●					●		●		0.016	0.250	0.125	0.109
		VBMT 330.5 PSF	**VBMT160402-PSF**						●					●		●		0.008	0.375	0.187	0.173
		VBMT 331 PSF	VBMT160404-PSF	●	●				●					●		●		0.016	0.375	0.187	0.173
	PF	**VBMT 220.5 PF**	**VBMT110302-PF**											●		●		0.008	0.250	0.125	0.109
		VBMT 221 PF	VBMT110304-PF											●		●		0.016	0.250	0.125	0.109
		VBMT 222 PF	VBMT110308-PF		●									●		●		0.031	0.250	0.125	0.109
		VBMT 331 PF	**VBMT160404-PF**											●		●		0.016	0.375	0.187	0.173
		VBMT 332 PF	VBMT160408-PF		●									●		●		0.031	0.375	0.187	0.173
	TSF	**VBMT 220.5 TSF**	**VBMT110302-TSF**	●	●	●	●	●								●		0.008	0.250	0.125	0.109
		VBMT 221 TSF	VBMT110304-TSF	●	●	●	●	●								●		0.016	0.250	0.125	0.109
		VBMT 222 TSF	VBMT110308-TSF	●	●	●	●	●								●		0.031	0.250	0.125	0.109
		VBMT 330.5 TSF	**VBMT160402-TSF**	●	●	●	●	●								●		0.008	0.375	0.187	0.173
		VBMT 331 TSF	VBMT160404-TSF	●	●	●	●	●								●		0.016	0.375	0.187	0.173
		VBMT 332 TSF	VBMT160408-TSF	●	●	●	●	●								●		0.031	0.375	0.187	0.173
For external turning on Swiss lathes (sharp edge)	**J10**	**VBGT 22V FR-J10**	**VBGT110300FR-J10**							●	●		●				●	0.0012	0.250	0.125	0.109
		VBGT 22V FL-J10	VBGT110300FL-J10								●		●				●	0.0012	0.250	0.125	0.109
		VBGT 220 FR-J10	VBGT110301FR-J10							●	●		●			●	●	0.004	0.250	0.125	0.109
		VBGT 220 FL-J10	VBGT110301FL-J10								●		●			●	●	0.004	0.250	0.125	0.109
		VBGT 220.5 FR-J10	VBGT110302FR-J10							●	●		●			●	●	0.008	0.250	0.125	0.109
		VBGT 220.5 FL-J10	VBGT110302FL-J10							●	●		●			●	●	0.008	0.250	0.125	0.109
		VBGT 221 FR-J10	VBGT110304FR-J10							●	●		●			●	●	0.016	0.250	0.125	0.109
		VBGT 221 FL-J10	VBGT110304FL-J10							●	●		●			●	●	0.016	0.250	0.125	0.109
Finishing	**J10**	**VBGT 220.5 R-J10**	**VBGT110302R-J10**												●			0.008	0.250	0.125	0.109
		VBGT 220.5 L-J10	VBGT110302L-J10												●			0.008	0.250	0.125	0.109
		VBGT 221 R-J10	VBGT110304R-J10												●			0.016	0.250	0.125	0.109
		VBGT 221 L-J10	VBGT110304L-J10												●			0.016	0.250	0.125	0.109

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: Internal toolholder → D068 - J-Series toolholder → G058 -
TungCap → K027

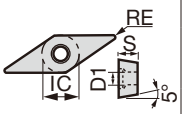
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

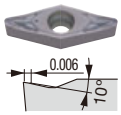
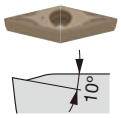
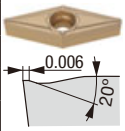
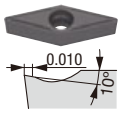
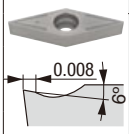
VB

Rhombic, 35° with hole Positive 5°



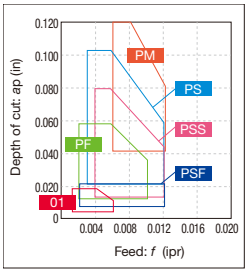
P	Steel	●ᑕ ᑕ✠ ᑕ ✠ ✠ ✠ ✠ ᑕ ●ᑕ ●ᑕ ●ᑕ ●ᑕ ●ᑕ
M	Stainless	●ᑕ ● ᑕ ● ᑕ ●ᑕ ✠ ᑕ ●ᑕ ●ᑕ ●ᑕ
K	Cast iron	●ᑕ ● ●ᑕ ᑕ ●ᑕ ●ᑕ ●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloy	● ᑕ ● ●ᑕ
H	Hard material	

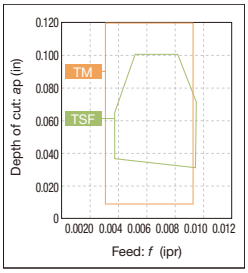


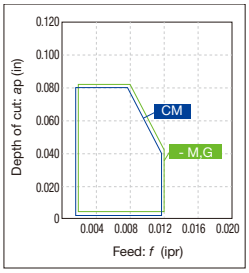
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH8005	AH8015	AH6225	AH6235	AH725	AH120	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	**PSS**	**VBMT 221 PSS**	**VBMT110304-PSS**	●	●	●						●	●	●		●		●	0.016	0.250	0.125	0.109
		VBMT 222 PSS	VBMT110308-PSS	●	●	●						●	●	●		●		●	0.031	0.250	0.125	0.109
		VBMT 331 PSS	**VBMT160404-PSS**	●	●	●						●	●	●		●		●	0.016	0.375	0.187	0.173
		VBMT 332 PSS	VBMT160408-PSS	●	●	●						●	●	●		●		●	0.031	0.375	0.187	0.173
		VBMT 333 PSS	VBMT160412-PSS	●	●									●					0.047	0.375	0.187	0.173
	PS	**VBMT 220.5 PS**	**VBMT110302-PS**	●	●	●				●	●	●	●	●		●	●	●	0.008	0.250	0.125	0.109
		VBMT 221 PS	VBMT110304-PS	●	●	●				●	●	●	●	●	●	●	●	●	0.016	0.250	0.125	0.109
		VBMT 222 PS	VBMT110308-PS	●	●	●				●	●	●	●	●	●	●	●	●	0.031	0.250	0.125	0.109
		VBMT 330.5 PS	**VBMT160402-PS**	●	●	●				●	●	●	●	●		●	●	●	0.008	0.375	0.187	0.173
		VBMT 331 PS	VBMT160404-PS	●	●	●				●	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.173
		VBMT 332 PS	VBMT160408-PS	●	●	●				●	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.173
	TM	**VBMT 220.5 TM**	**VBMT110302-TM**	●	●	●					●	●						●	0.008	0.250	0.125	0.109
		VBMT 221 TM	VBMT110304-TM	●	●	●					●	●						●	0.016	0.250	0.125	0.109
		VBMT 222 TM	VBMT110308-TM	●	●	●					●	●						●	0.031	0.250	0.125	0.109
		VBMT 330.5 TM	**VBMT160402-TM**	●	●	●					●	●						●	0.008	0.375	0.187	0.173
		VBMT 331 TM	VBMT160404-TM	●	●	●					●	●						●	0.016	0.375	0.187	0.173
		VBMT 332 TM	VBMT160408-TM	●	●	●					●	●						●	0.031	0.375	0.187	0.173
	CM	**VBMT 221 CM**	**VBMT110304-CM**						●										0.016	0.250	0.125	0.109
		VBMT 222 CM	VBMT110308-CM						●										0.031	0.250	0.125	0.109
		VBMT 331 CM	**VBMT160404-CM**				●	●	●										0.016	0.375	0.187	0.173
		VBMT 332 CM	VBMT160408-CM				●	●	●										0.031	0.375	0.187	0.173
		VBMT 333 CM	VBMT160412-CM				●	●	●										0.047	0.375	0.187	0.173
Medium cutting	**24**	**VBMT 331-24**	**VBMT160404-24**	●	●													●	0.016	0.375	0.187	0.173
		VBMT 332-24	VBMT160408-24	●	●													●	0.031	0.375	0.187	0.173

●: Line up

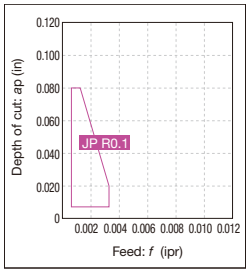
Chip control range

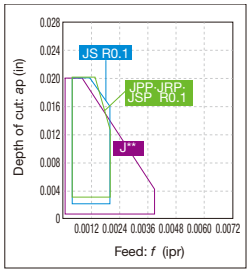






*-M,G: Without chipbreaker





*Chip control range with typical R0.1

Reference pages: Internal toolholder → D068 - J-Series toolholder → G058 -
TungCap → K027

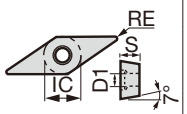
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VC

Rhombic, 35° with hole Positive 7°

P	Steel	●ɔ✣ ɔ
M	Stainless	●ɔ ● ●ɔ ɔ ✣
K	Cast iron	●ɔ ● ●ɔ ɔ
N	Non-ferrous	
S	Superalloy	● ɔ ɔ ● ●ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T6215	T505	T515	T5115	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH120	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing	PSF	VCMT 630.5 PSF	VCMT080202-PSF												●		●		●	0.008	0.187	0.094	0.091
		VCMT 631 PSF	VCMT080204-PSF	●	●										●		●		●	0.016	0.187	0.094	0.091
		VCMT 220.5 PSF	VCMT110302-PSF												●					0.008	0.250	0.125	0.109
		VCMT 221 PSF	VCMT110304-PSF	●	●										●					0.016	0.250	0.125	0.109
		VCMT 331 PSF	VCMT160404-PSF	●	●					●	●			●	●		●		●	0.016	0.375	0.187	0.173
		VCMT 332 PSF	VCMT160408-PSF	●	●					●	●			●	●		●		●	0.031	0.375	0.187	0.173
	PF	VCMT 630.5 PF	VCMT080202-PF														●		●	0.008	0.187	0.094	0.091
		VCMT 631 PF	VCMT080204-PF														●		●	0.016	0.187	0.094	0.091
		VCMT 331 PF	VCMT160404-PF														●		●	0.016	0.375	0.187	0.173
		VCMT 332 PF	VCMT160408-PF														●		●	0.031	0.375	0.187	0.173
	TSF	VCMT 220.5 TSF	VCMT110302-TSF	●	●	●					●	●							●	0.008	0.250	0.125	0.109
		VCMT 221 TSF	VCMT110304-TSF	●	●	●					●	●							●	0.016	0.250	0.125	0.109
		VCMT 222 TSF	VCMT110308-TSF	●	●	●					●	●							●	0.031	0.250	0.125	0.109
		VCMT 330.5 TSF	VCMT160402-TSF	●	●	●					●	●							●	0.008	0.375	0.187	0.173
		VCMT 331 TSF	VCMT160404-TSF	●	●	●					●	●							●	0.016	0.375	0.187	0.173
		VCMT 332 TSF	VCMT160408-TSF	●	●	●					●	●							●	0.031	0.375	0.187	0.173
Finishing to medium cutting	PSS	VCMT 221 PSS	VCMT110304-PSS	●	●	●						●	●		●		●		●	0.016	0.250	0.125	0.109
		VCMT 222 PSS	VCMT110308-PSS	●	●	●						●	●		●		●		●	0.031	0.250	0.125	0.109
		VCMT 331 PSS	VCMT160404-PSS	●	●	●				●	●	●	●	●	●		●		●	0.016	0.375	0.187	0.173
		VCMT 332 PSS	VCMT160408-PSS	●	●	●				●	●	●	●	●	●		●		●	0.031	0.375	0.187	0.173
	PS	VCMT 220.5 PS	VCMT110302-PS	●	●	●				●	●	●	●		●		●	●	●	0.008	0.250	0.125	0.109
		VCMT 221 PS	VCMT110304-PS	●	●	●				●	●	●	●		●		●	●	●	0.016	0.250	0.125	0.109
		VCMT 222 PS	VCMT110308-PS	●	●	●				●	●	●	●		●		●	●	●	0.031	0.250	0.125	0.109
		VCMT 330.5 PS	VCMT160402-PS	●	●	●					●	●							●	0.008	0.375	0.187	0.173
		VCMT 331 PS	VCMT160404-PS	●	●	●				●	●	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.173
		VCMT 332 PS	VCMT160408-PS	●	●	●				●	●	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.173
	TM	VCMT 220.5 TM	VCMT110302-TM	●	●	●					●	●							●	0.008	0.250	0.125	0.109
		VCMT 221 TM	VCMT110304-TM	●	●	●					●	●							●	0.016	0.250	0.125	0.109
		VCMT 222 TM	VCMT110308-TM	●	●	●					●	●							●	0.031	0.250	0.125	0.109
		VCMT 330.5 TM	VCMT160402-TM	●	●	●					●	●							●	0.008	0.375	0.187	0.173
		VCMT 331 TM	VCMT160404-TM	●	●	●					●	●							●	0.016	0.375	0.187	0.173
		VCMT 332 TM	VCMT160408-TM	●	●	●					●	●							●	0.031	0.375	0.187	0.173
	CM	VCMT 631 CM	VCMT080204-CM						●											0.016	0.187	0.094	0.091
		VCMT 331 CM	VCMT160404-CM				●	●	●											0.016	0.375	0.187	0.173
		VCMT 332 CM	VCMT160408-CM				●	●	●											0.031	0.375	0.187	0.173
		VCMT 333 CM	VCMT160412-CM						●											0.047	0.375	0.187	0.173

● : Line up

Reference pages: External toolholder → C113 - Internal toolholder → D072 -
TungCap → K015 -

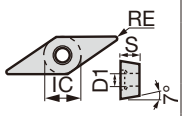
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

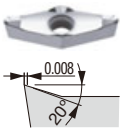
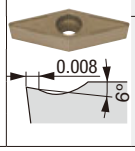
VC

Rhombic, 35°
with hole
Positive 7°



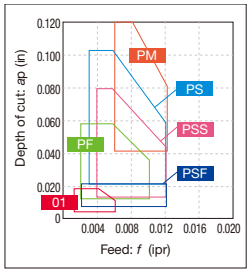
P	Steel	●ɔ✠ ●ɔ
M	Stainless	●ɔ ● ɔ
K	Cast iron	●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	● ɔ ɔ ●
H	Hard material	

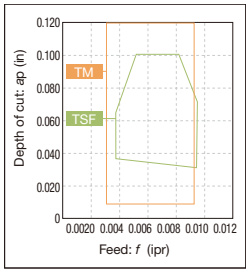


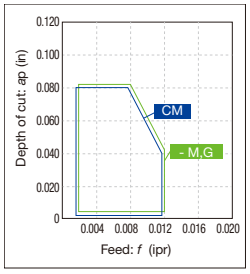
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting for non-ferrous alloys	**AL**	**VCGT 331 AL**	**VCGT160404-AL**							●	0.016	0.375	0.187	0.173
		VCGT 332 AL	VCGT160408-AL							●	0.031	0.375	0.187	0.173
		VCGT 333 AL	VCGT160412-AL							●	0.047	0.375	0.187	0.173
		VCGT 43.55 AL	**VCGT220520-AL**							●	0.078	0.500	0.219	0.217
		VCGT 43.57.5 AL	VCGT220530-AL							●	0.118	0.500	0.219	0.217
Finishing to medium cutting	**All-round**	**VCMT 331**	**VCMT160404**			●	●	●			0.016	0.375	0.187	0.173
		VCMT 332	VCMT160408			●	●	●			0.031	0.375	0.187	0.173
		VCMT 333	VCMT160412			●	●	●			0.047	0.375	0.187	0.173
Medium cutting	**24**	**VCMT 331-24**	**VCMT160404-24**	●	●				●		0.016	0.375	0.187	0.173
		VCMT 332-24	VCMT160408-24	●	●				●		0.031	0.375	0.187	0.173

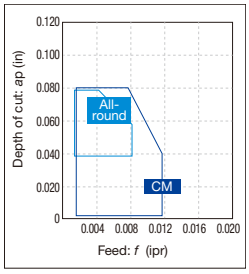
●: Line up

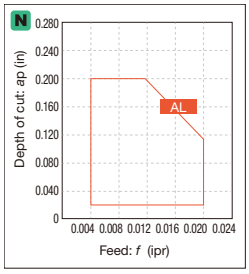
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C113 - Internal toolholder → D072 -
TungCap → K015 -

Insert POSITIVE TYPE

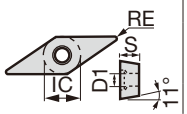
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

VP

Rhombic, 35° with hole Positive 11°



P	Steel	●◐	●◐
M	Stainless	●◐	●◐
K	Cast iron		
N	Non-ferrous		
S	Superalloy		●◐
H	Hard material		

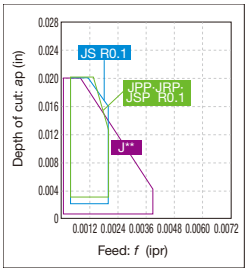


Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	JPP	VPET 63X MFR-JPP	VPET0802008MFR-JPP	●	●	<0.0031*	0.187	0.094	0.091
		VPET 63X MFL-JPP	VPET0802008MFL-JPP	●		<0.0031*	0.187	0.094	0.091
		VPET 630 MFR-JPP	VPET080201MFR-JPP	●	●	<0.004*	0.187	0.094	0.091
		VPET 630 MFL-JPP	VPET080201MFL-JPP	●	●	<0.004*	0.187	0.094	0.091
		VPET 630.4 MFR-JPP	VPET0802018MFR-JPP	●		<0.007*	0.187	0.094	0.091
		VPET 630.4 MFL-JPP	VPET0802018MFL-JPP	●		<0.007*	0.187	0.094	0.091
		VPET 630.5 MFR-JPP	VPET080202MFR-JPP	●	●	<0.008*	0.187	0.094	0.091
		VPET 630.5 MFL-JPP	VPET080202MFL-JPP	●	●	<0.008*	0.187	0.094	0.091
		VPET 22X MFR-JPP	VPET1103008MFR-JPP	●	●	<0.0031*	0.250	0.125	0.109
		VPET 220 MFR-JPP	VPET110301MFR-JPP	●	●	<0.004*	0.250	0.125	0.109
		VPET 220 MFL-JPP	VPET110301MFL-JPP	●		<0.004*	0.250	0.125	0.109
		VPET 220.4 MFR-JPP	VPET1103018MFR-JPP	●	●	<0.007*	0.250	0.125	0.109
		VPET 220.5 MFR-JPP	VPET110302MFR-JPP	●	●	<0.008*	0.250	0.125	0.109
		VPET 220.5 MFL-JPP	VPET110302MFL-JPP	●	●	<0.008*	0.250	0.125	0.109
	JRP	VPET 63X MFR-JRP	VPET0802008MFR-JRP	●	●	<0.0031*	0.187	0.094	0.091
		VPET 630 MFR-JRP	VPET080201MFR-JRP	●	●	<0.004*	0.187	0.094	0.091
		VPET 630 MFL-JRP	VPET080201MFL-JRP	●	●	<0.004*	0.187	0.094	0.091
		VPET 630.4 MFR-JRP	VPET0802018MFR-JRP	●		<0.007*	0.187	0.094	0.091
		VPET 630.4 MFL-JRP	VPET0802018MFL-JRP	●		<0.007*	0.187	0.094	0.091
		VPET 630.5 MFR-JRP	VPET080202MFR-JRP	●	●	<0.008*	0.187	0.094	0.091
		VPET 630.5 MFL-JRP	VPET080202MFL-JRP	●	●	<0.008*	0.187	0.094	0.091
		VPET 22X MFR-JRP	VPET1103008MFR-JRP	●	●	<0.0031*	0.250	0.125	0.109
		VPET 22X MFL-JRP	VPET1103008MFL-JRP		●	<0.0031*	0.250	0.125	0.109
		VPET 220 MFR-JRP	VPET110301MFR-JRP	●	●	<0.004*	0.250	0.125	0.109
		VPET 220 MFL-JRP	VPET110301MFL-JRP	●	●	<0.004*	0.250	0.125	0.109
		VPET 220.4 MFR-JRP	VPET1103018MFR-JRP	●	●	<0.007*	0.250	0.125	0.109
		VPET 220.4 MFL-JRP	VPET1103018MFL-JRP	●		<0.007*	0.250	0.125	0.109
		VPET 220.5 MFR-JRP	VPET110302MFR-JRP	●	●	<0.008*	0.250	0.125	0.109
		VPET 220.5 MFL-JRP	VPET110302MFL-JRP	●	●	<0.008*	0.250	0.125	0.109
	JSP	VPET 63X MFN-JSP	VPET0802008MFN-JSP	●	●	<0.0031*	0.187	0.094	0.091
		VPET 630 MFN-JSP	VPET080201MFN-JSP	●	●	<0.004*	0.187	0.094	0.091
		VPET 630.4 MFN-JSP	VPET0802018MFN-JSP	●	●	<0.007*	0.187	0.094	0.091
		VPET 630.5 MFN-JSP	VPET080202MFN-JSP	●	●	<0.008*	0.187	0.094	0.091
		VPET 22X MFN-JSP	VPET1103008MFN-JSP	●	●	<0.0031*	0.250	0.125	0.109
		VPET 220 MFN-JSP	VPET110301MFN-JSP	●	●	<0.004*	0.250	0.125	0.109
		VPET 220.4 MFN-JSP	VPET1103018MFN-JSP	●	●	<0.007*	0.250	0.125	0.109
		VPET 220.5 MFN-JSP	VPET110302MFN-JSP	●	●	<0.008*	0.250	0.125	0.109

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

●: Line up

Chip control range



*Chip control range with typical R0.1

Reference pages: J-Series toolholder → G062 -

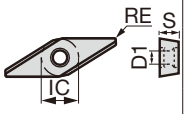
Insert POSITIVE TYPE / DOUBLE SIDED

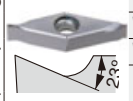
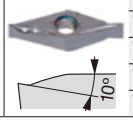
VX



Rhombic, 35° with hole

P	Steel	●◐
M	Stainless	●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	JRP	VXGU 73.50MFRE-JRP	VXGU09T201MFRE-JRP**	●	<0.004*	0.219	0.109	0.098
		VXGU 73.50MFLE-JRP	VXGU09T201MFLE-JRP**	●	<0.004*	0.219	0.109	0.098
		VXGU73.50.5MFRE-JRP	VXGU09T202MFRE-JRP**	●	<0.008*	0.219	0.109	0.098
		VXGU73.50.5MFLE-JRP	VXGU09T202MFLE-JRP**	●	<0.008*	0.219	0.109	0.098
Finishing to medium cutting (sharp edge)	JS	VXGU 73.50MFR-JS	VXGU09T201MFR-JS(1)	●	<0.004*	0.219	0.109	0.098
		VXGU 73.50MFL-JS	VXGU09T201MFL-JS(1)	●	<0.004*	0.219	0.109	0.098
		VXGU 73.50.5MFR-JS	VXGU09T202MFR-JS(1)	●	<0.008*	0.219	0.109	0.098
		VXGU 73.50.5MFL-JS	VXGU09T202MFL-JS(1)	●	<0.008*	0.219	0.109	0.098
		VXGU 73.51MFR-JS	VXGU09T204MFR-JS(1)	●	<0.016*	0.219	0.109	0.098
		VXGU 73.51MFL-JS	VXGU09T204MFL-JS(1)	●	<0.016*	0.219	0.109	0.098

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.
** For external turning applications
(1)Due to chipbreaker profile, max ap for face or ID turning is 0.039".

●: Line up

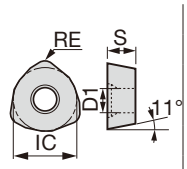
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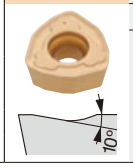
WP



Trigon, 80° with hole Positive 11°

P	Steel	●◐ ◐✠ ●◐ ◐✠ ◐✠ ●◐
M	Stainless	●◐ ●◐ ◐✠ ◐✠ ◐✠ ●◐
K	Cast iron	●◐ ●◐
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	AH120	AH130	AH140	AH3135	T3130	Dimension (in) RE	IC	S	D1
Heavy cutting	ML	-	WPMT090725ZPR-ML	●	●	●	●	●	●	●	0.098	0.591	0.276	0.217
		-	WPMT090725ZPL-ML	●	●	●					0.098	0.591	0.276	0.217

●: Line up

Reference pages: VXGU... : External toolholder → C119 -, J-Series toolholder → G064 -
WPMT...: External toolholder → C127

Insert POSITIVE TYPE

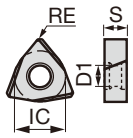
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

WB



Trigon, 80° with hole Positive 5°

P	Steel	●	●ɔ	●ɔ	●ɔ			●ɔ						●	ɔ														
M	Stainless	●	●ɔ	●ɔ	●ɔ									●	ɔ														
K	Cast iron	●						●ɔ						●															
N	Non-ferrous													●															
S	Superalloy	●			●ɔ																								
H	Hard material																												

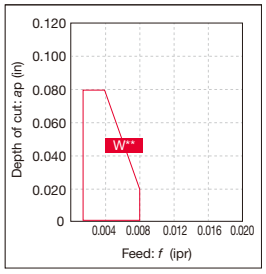


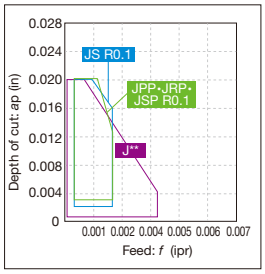
Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated SH7025	Coated SH725	Coated SH730	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (in) RE	IC	S	D1
Finishing (sharp edge)	**JS**	**WBGT 520 FR-JS**	**WBGT030101FR-JS**		●	●					<0.004*	0.156	0.063	0.091
		WBGT 520 FL-JS	WBGT030101FL-JS		●	●					<0.004*	0.156	0.063	0.091
		WBGT 520.5 FR-JS	WBGT030102FR-JS		●	●					<0.008*	0.156	0.063	0.091
		WBGT 520.5 FL-JS	WBGT030102FL-JS		●	●					<0.008*	0.156	0.063	0.091
		WBGT 521 FR-JS	WBGT030104FR-JS		●	●					<0.016*	0.156	0.063	0.091
		WBGT 521 FL-JS	WBGT030104FL-JS		●	●					<0.016*	0.156	0.063	0.091
Finishing	**JS**	**WBGT 520 R-JS**	**WBGT030101R-JS**				●				<0.004	0.156	0.063	0.091
		WBGT 520 L-JS	WBGT030101L-JS				●				<0.004	0.156	0.063	0.091
		WBGT 520.5 R-JS	WBGT030102R-JS				●				<0.008	0.156	0.063	0.091
		WBGT 520.5 L-JS	WBGT030102L-JS				●				<0.008	0.156	0.063	0.091
		WBGT 521 R-JS	WBGT030104R-JS				●				<0.016	0.156	0.063	0.091
		WBGT 521 L-JS	WBGT030104L-JS				●				<0.016	0.156	0.063	0.091
Finishing (sharp edge)	**W08**	**WBGT 52V FR-W08**	**WBGT030100FL-W08**		●	●					0.0012	0.156	0.063	0.091
		WBGT 52V FL-W08	WBGT030100FR-W08			●					0.0012	0.156	0.063	0.091
		WBGT 520 FR-W08	WBGT030101FL-W08		●	●					0.004	0.156	0.063	0.091
		WBGT 520 FL-W08	WBGT030101FR-W08			●					0.004	0.156	0.063	0.091
		WBGT 520.5 FR-W08	WBGT030102FL-W08		●	●					0.008	0.156	0.063	0.091
		WBGT 520.5 FL-W08	WBGT030102FR-W08		●	●					0.008	0.156	0.063	0.091
		WBGT 521 FR-W08	WBGT030104FL-W08		●	●					0.016	0.156	0.063	0.091
		WBGT 521 FL-W08	WBGT030104FR-W08		●	●					0.016	0.156	0.063	0.091
Finishing	**W08**	**WBGT 52V R-W08**	**WBGT030100R-W08**				●				0.0012	0.156	0.063	0.091
		WBGT 52V L-W08	WBGT030100L-W08				●	●	●	●	0.0012	0.156	0.063	0.091
		WBGT 520 R-W08	WBGT030101R-W08				●				0.004	0.156	0.063	0.091
		WBGT 520 L-W08	WBGT030101L-W08				●		●		0.004	0.156	0.063	0.091
		WBGT 520.5 R-W08	WBGT030102R-W08				●				0.008	0.156	0.063	0.091
		WBGT 520.5 L-W08	WBGT030102L-W08	●			●	●	●	●	0.008	0.156	0.063	0.091
		WBGT 521 R-W08	WBGT030104R-W08				●				0.016	0.156	0.063	0.091
		WBGT 521 L-W08	WBGT030104L-W08	●			●	●	●	●	0.016	0.156	0.063	0.091
	W11	**WBGT 520.5 L-W11**	**WBGT060102L-W11**	●				●			0.008	0.156	0.063	0.091
		WBGT 521 L-W11	WBGT060104L-W11					●			0.016	0.156	0.063	0.091
		WBGT 630.5 L-W11	**WBGT080202L-W11**					●			0.008	0.187	0.094	0.091
		WBGT 631 L-W11	WBGT080204L-W11					●			0.016	0.187	0.094	0.091

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

●: Line up

Chip control range





*Chip control range with typical R0.1

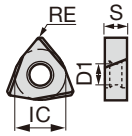
Reference pages: Internal toolholder → D080

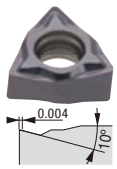
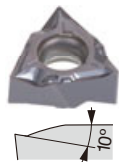
WX



Trigon, 80° with hole

P	Steel	ɔ			●ɔ			●ɔ			●ɔ												
M	Stainless	ɔ	ɔ		●ɔ																		
K	Cast iron	ɔ						●ɔ			●ɔ			●									
N	Non-ferrous													●									
S	Superalloy	●	ɔ											●									
H	Hard material																						

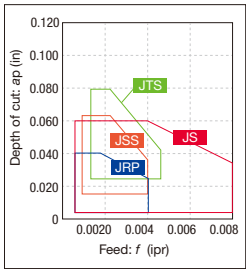


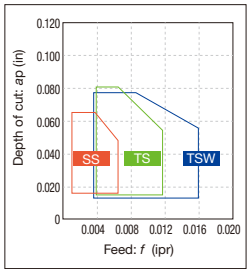
Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated AH8015	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	Dimension (in) RE	IC	S	D1
Finishing	JSS	WXGU 220MFR JSS	WXGU040301MFR-JSS			●				<0.004*	0.250	0.125	0.106
		WXGU 220MFL JSS	WXGU040301MFL-JSS			●				<0.004*	0.250	0.125	0.106
		WXGU 220.5MFR JSS	WXGU040302MFR-JSS			●				<0.008*	0.250	0.125	0.106
		WXGU 220.5MFL JSS	WXGU040302MFL-JSS			●				<0.008*	0.250	0.125	0.106
	JSS	WXGU 220MR JSS	WXGU040301MR-JSS	●						<0.004*	0.250	0.125	0.106
		WXGU 220ML JSS	WXGU040301ML-JSS	●						<0.004*	0.250	0.125	0.106
		WXGU 220.5MR JSS	WXGU040302MR-JSS	●						<0.008*	0.250	0.125	0.106
		WXGU 220.5ML JSS	WXGU040302ML-JSS	●						<0.008*	0.250	0.125	0.106
Finishing to medium cutting	SS	WXGU 220.5R SS	WXGU040302R-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 220.5L SS	WXGU040302L-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 221R SS	WXGU040304R-SS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 221L SS	WXGU040304L-SS	●	●		●	●	●	0.016	0.250	0.125	0.106
Finishing	TSW	WXGU 221R TSW	WXGU040304R-TSW	●	●		●	●		0.016	0.250	0.125	0.106
		WXGU 221L TSW	WXGU040304L-TSW	●	●		●	●		0.016	0.250	0.125	0.106
		WXGU 222R TSW	WXGU040308R-TSW	●	●		●	●		0.031	0.250	0.125	0.106
		WXGU 222L TSW	WXGU040308L-TSW	●	●		●	●		0.031	0.250	0.125	0.106
Finishing to medium cutting (sharp edge)	JS	WXGU 220MFR JS	WXGU040301MFR-JS(1)			●				<0.004*	0.250	0.125	0.106
		WXGU 220MFL JS	WXGU040301MFL-JS(1)			●				<0.004*	0.250	0.125	0.106
		WXGU 220.5MFR JS	WXGU040302MFR-JS(1)			●				<0.008*	0.250	0.125	0.106
		WXGU 220.5MFL JS	WXGU040302MFL-JS(1)			●				<0.008*	0.250	0.125	0.106
		WXGU 221MFR JS	WXGU040304MFR-JS(1)			●				<0.016*	0.250	0.125	0.106
		WXGU 221MFL JS	WXGU040304MFL-JS(1)			●				<0.016*	0.250	0.125	0.106

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.
(1) Due to chipbreaker profile, max ap for face or ID turning is 0.039".

●: Line up

Chip control range





Reference pages: External toolholder → C128 - Internal toolholder → D081 -
J-Series toolholder → G069 - TungCap → K025

Insert POSITIVE TYPE / DOUBLE SIDED

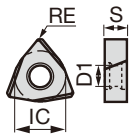
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

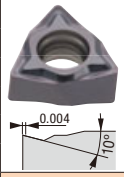
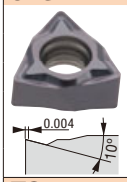
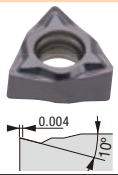
WX



Trigon, 80° with hole

P	Steel	ɔ		●ɔ			●ɔ			●ɔ													
M	Stainless	ɔ	ɔ	●ɔ																			
K	Cast iron	ɔ					●ɔ			●ɔ			●										
N	Non-ferrous												●										
S	Superalloy	●	ɔ										●										
H	Hard material																						

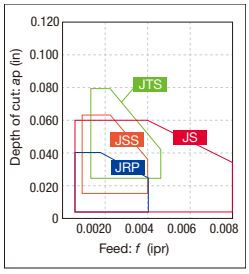


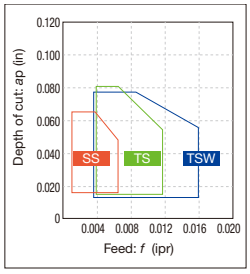
Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated AH8015	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	Dimension (in) RE	IC	S	D1
Finishing to medium cutting (sharp edge)	**JTS**	**WXGU 220MFR JTS**	**WXGU040301MFR-JTS**			●				<0.004*	0.250	0.125	0.106
		WXGU 220MFL JTS	WXGU040301MFL-JTS			●				<0.004*	0.250	0.125	0.106
		WXGU 220.5MFR JTS	WXGU040302MFR-JTS			●				<0.008*	0.250	0.125	0.106
		WXGU 220.5MFL JTS	WXGU040302MFL-JTS			●				<0.008*	0.250	0.125	0.106
Finishing to medium cutting	**JTS**	**WXGU 220MR JTS**	**WXGU040301MR-JTS**	●						<0.004*	0.250	0.125	0.106
		WXGU 220ML JTS	WXGU040301ML-JTS	●						<0.004*	0.250	0.125	0.106
		WXGU 220.5MR JTS	WXGU040302MR-JTS	●						<0.008*	0.250	0.125	0.106
		WXGU 220.5ML JTS	WXGU040302ML-JTS	●						<0.008*	0.250	0.125	0.106
	TS	**WXGU 220.5R TS**	**WXGU040302R-TS**	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 220.5L TS	WXGU040302L-TS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 221R TS	WXGU040304R-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 221L TS	WXGU040304L-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 222R TS	WXGU040308R-TS	●	●		●	●	●	0.031	0.250	0.125	0.106
		WXGU 222L TS	WXGU040308L-TS	●	●		●	●	●	0.031	0.250	0.125	0.106

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

●: Line up

Chip control range





Reference pages: External toolholder → C128 - Internal toolholder → D081 -
J-Series toolholder → G069 - TungCap → K025

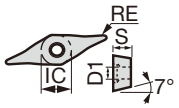
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

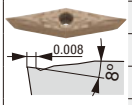
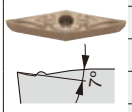
YW



Rhombic, 25° with hole Positive 7°

P	Steel	●ɔ ●✣ ɔ ✣ ɔ✣ ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	ɔ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T6215	Coated AH8015	Coated AH6225	Coated cermet GT9530	Cermet NS9530	Dimension (in) RE	IC	S	D1
Finishing to medium cutting	ZF	-	YWMT11T202-ZF	●	●	●	●	●	●	●	0.008	0.184	0.109	0.091
		-	YWMT11T204-ZF	●	●	●	●	●	●	●	0.016	0.184	0.109	0.091
		-	YWMT16T302-ZF	●	●	●	●	●	●	●	0.008	0.276	0.156	0.113
		-	YWMT16T304-ZF	●	●	●	●	●	●	●	0.016	0.276	0.156	0.113
		-	YWMT16T308-ZF	●	●	●	●	●	●	●	0.031	0.276	0.156	0.113
	ZM	-	YWMT11T202-ZM	●	●	●	●	●	●	●	0.008	0.184	0.109	0.091
		-	YWMT11T204-ZM	●	●	●	●	●	●	●	0.016	0.184	0.109	0.091
		-	YWMT16T302-ZM	●	●	●	●	●	●	●	0.008	0.276	0.156	0.113
		-	YWMT16T304-ZM	●	●	●	●	●	●	●	0.016	0.276	0.156	0.113
		-	YWMT16T308-ZM	●	●	●	●	●	●	●	0.031	0.276	0.156	0.113

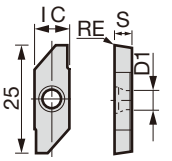
●: Line up

JXF



Front turning

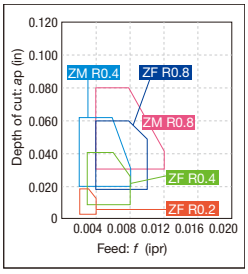
P	Steel	●ɔ ●ɔ ●
M	Stainless	●ɔ ●ɔ ●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated J740	Uncoated TH10	Dimension (in) RE	IC	S	D1
Front turning	-	-	JXFR8000F	●	●	●	0.0012	0.315	0.156	0.173
		-	JXFR8010F	●	●	●	0.004	0.315	0.156	0.173

●: Line up

Chip control range



Reference pages: YWMT...: External toolholder → C130 -, Internal toolholder → D088 -
JXF...: J-Series toolholder → G075

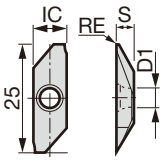
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

JXR

Reverse turning

P	Steel	●ɔ
M	Stainless	●ɔ
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



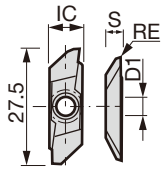
Application	Chipbreaker	Designation Inch	Designation Metric	Coated J740	Uncoated TH10	Dimension (in) RE	IC	S	D1
Reverse turning	-	-	JXRR8000F	●	●	0.0012	0.315	0.156	0.173
		-	JXRR8010F	●	●	0.004	0.315	0.156	0.173



JXB

Back turning

P	Steel	●ɔ ●
M	Stainless	●ɔ ●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated J740	Uncoated TH10	Dimension (in) RE	IC	S	D1
Back turning	-	-	JXBR8000F	●	●	●	0.0012	0.315	0.156	0.173
		-	JXBL8000F		●	●	0.0012	0.315	0.156	0.173
		-	JXBR8005F	●	●	●	0.002	0.315	0.156	0.173
		-	JXBL8005F		●	●	0.002	0.315	0.156	0.173
		-	JXBR8005		●		0.002	0.315	0.156	0.173
		-	JXBL8005		●		0.002	0.315	0.156	0.173
		-	JXBR8010F	●	●	●	0.004	0.315	0.156	0.173
		-	JXBL8010F		●	●	0.004	0.315	0.156	0.173
		-	JXBR8010		●		0.004	0.315	0.156	0.173
		-	JXBL8010		●		0.004	0.315	0.156	0.173
		-	JXBR8015F	●	●	●	0.006	0.315	0.156	0.173
		-	JXBL8015F		●	●	0.006	0.315	0.156	0.173
		-	JXBR8015		●		0.006	0.315	0.156	0.173
		-	JXBL8015		●		0.006	0.315	0.156	0.173



●: Line up

Reference pages: JXR...: J-Series toolholder → G075
JXB...: J-Series toolholder → G076

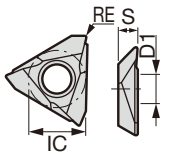
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

JTB*



Back turning

P	Steel	◐ ◐ ◐ ◐ ● ●
M	Stainless	◐ ◐ ◐ ●
K	Cast iron	◐ ◐ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



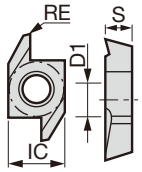
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Back turning	-	-	JTBR3000F	●	●	●			●	0.001	0.374	0.125	0.173
		-	JTBL3000F		●	●			●	0.001	0.374	0.125	0.173
		-	JTBR3005F	●	●	●			●	0.002	0.374	0.125	0.173
		-	JTBL3005F		●	●			●	0.002	0.374	0.125	0.173
		-	JTBR3005			●	●			0.002	0.374	0.125	0.173
		-	JTBL3005			●				0.002	0.374	0.125	0.173
		-	JTBR3010F	●	●	●		●	●	0.004	0.374	0.125	0.173
		-	JTBL3010F		●	●		●	●	0.004	0.374	0.125	0.173
		-	JTBR3010			●	●			0.004	0.374	0.125	0.173
		-	JTBL3010			●				0.004	0.374	0.125	0.173
		-	JTBR3015F	●	●	●		●		0.006	0.374	0.125	0.173
		-	JTBL3015F		●					0.006	0.374	0.125	0.173

J10E*



Back turning

P	Steel	◐ ◐ ◐ ◐ ● ●
M	Stainless	◐ ◐ ◐ ●
K	Cast iron	◐ ◐ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH7025	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (in) RE	IC	S	D1
Back turning	-	-	J10ER005BF	●	●	●		●	●	0.002	0.250	0.125	0.118
		-	J10EL005BF	●	●	●			●	0.002	0.250	0.125	0.118
		-	J10ER005B			●	●			0.002	0.250	0.125	0.118
		-	J10EL005B			●				0.002	0.250	0.125	0.118
		-	J10ER010BF	●	●	●		●	●	0.004	0.250	0.125	0.118
		-	J10EL010BF	●	●	●			●	0.004	0.250	0.125	0.118
		-	J10ER010B			●	●			0.004	0.250	0.125	0.118
		-	J10EL010B			●				0.004	0.250	0.125	0.118
		-	J10EL015BF	●	●					0.006	0.250	0.125	0.118
		-	J10ER015BF	●	●					0.006	0.250	0.125	0.118

●: Line up

Reference pages: JTB...: J-Series toolholder → G081
J10E...: J-Series toolholder → G078

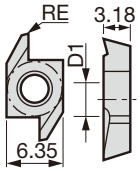
Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

10E*

Back turning

P	Steel	●
M	Stainless	●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Uncoated TH10	Dimension (in) RE	IC	S	D1
Back turning	-	-	**10ER100B**	●	0.0012	0.250	0.125	0.118
		-	10E**L100B**	●	0.0012	0.250	0.125	0.118
		-	10E**R150B**	●	0.0012	0.250	0.125	0.118
		-	10E**L150B**	●	0.0012	0.250	0.125	0.118
		-	10E**R300**	●	-	0.250	0.125	0.118
		-	10E**L300**	●	-	0.250	0.125	0.118

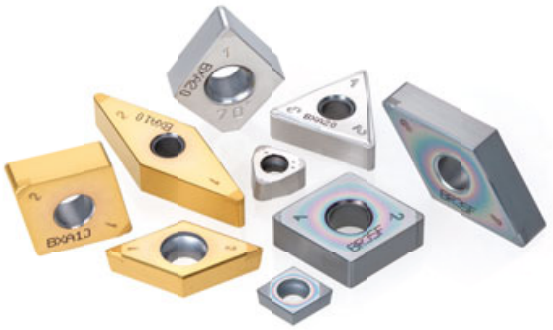


●: Line up

MEMO

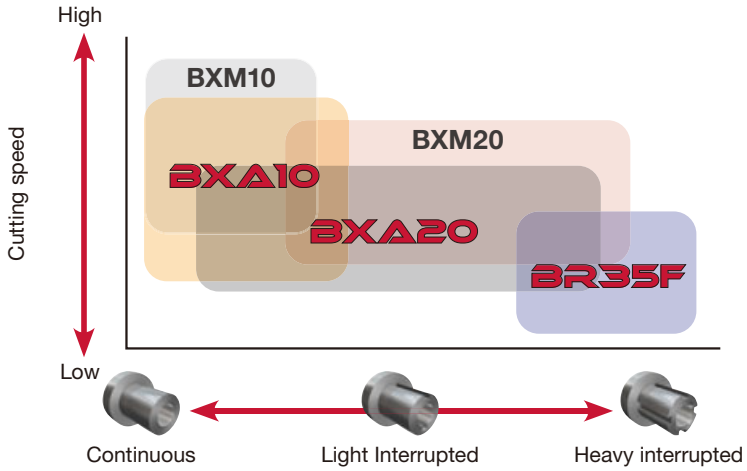
BXA10/BXA20/BR35F

Coated CBN series for a wide range of hard part turning



■ Application areas

The most suitable grade can be selected for your application requirements



BXA10



- First choice for continuous to light interrupted cuts
- For *Vc* = 755 sfm or less

BXA20



- Versatile grade from continuous to heavy interrupted cuts
- For *Vc* = 492 sfm or less

BR35F



- First choice for heavy interrupted cuts
- For *Vc* = 492 sfm or less

BXM10

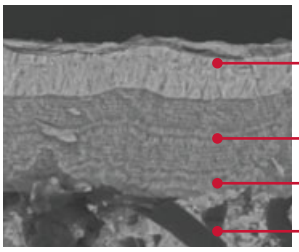
- Complementary grade for continuous to light interrupted cuts
- For extremely high cutting speeds of *Vc* = 984 sfm

BXM20

- Complementary versatile grade for continuous to heavy interrupted cuts
- For high cutting speeds of *Vc* = 656 sfm

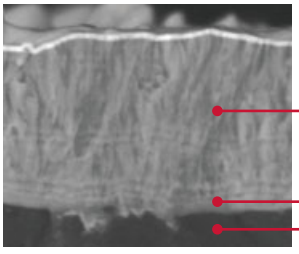
■ Grade properties

BXA10



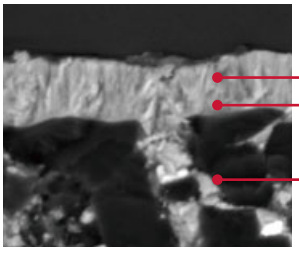
- TiCN coating with high thermal stability and wear resistance
- Multilayer TiAlN coating with good adhesion and resistance to delamination and chipping
- Strong coating-substrate adhesion prevents delamination
- Dedicated CBN substrate with excellent flank wear and crater wear resistance

BXA20



- Thick multilayer TiAlN coating with superior wear and chipping resistance
- Strong coating-substrate adhesion prevents delamination
- Dedicated CBN substrate with excellent crater wear and fracture resistance

BR35F



- Multilayer AlCrN coating with excellent fracture resistance
- Strong coating-substrate adhesion prevents delamination
- Dedicated CBN substrate with excellent chipping and fracture resistance

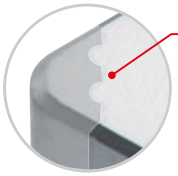
WavyJoint



New brazing technology for increased machining efficiency

A maximum depth of cut up to 0.031".
Reduces the number of passes to increase productivity.

Innovative WavyJoint brazing technology
Prevents the CBN tips from debrazing, eliminating abrupt insert fractures during demanding dry machining, while securing stable and predictable hard turning operations.

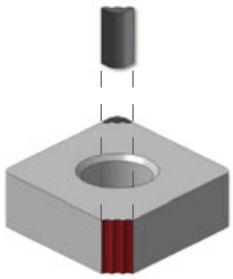


The "wavy" contact surface enhances the brazing strength



Double sided inserts

WavyJoint

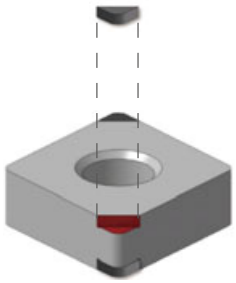


Vs.

CBN Tip Size: 200% larger for improved wear resistance of the cutting edge

Brazing Area: 160% larger for enhanced brazing strength

Standard



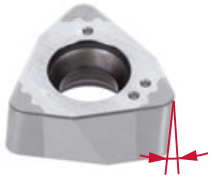
MINIFORCE TURN

Double-sided positive insert with CBN tips

MiniForce-Turn now offers WavyJoint CBN inserts that provide additional strength and security in aggressive cutting conditions.

■ **WXGQ 220... (WXGQ0403...) insert**

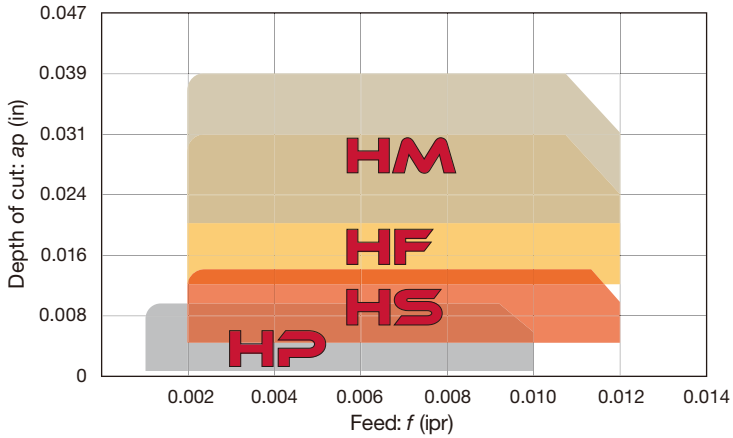
Double-sided positive inserts



6-edged insert with dovetail design



CBN inserts with chipbreaker ideal for carburized layer removal and finishing hardened steel

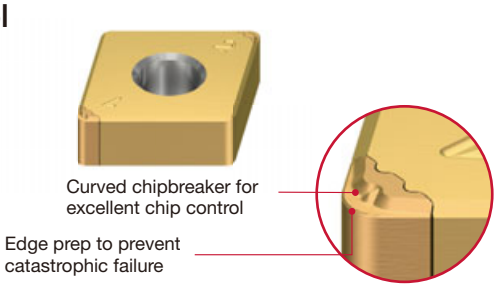




HS chipbreaker

Optimized chipbreaker design for excellent chip control during hard turning at aggressive conditions

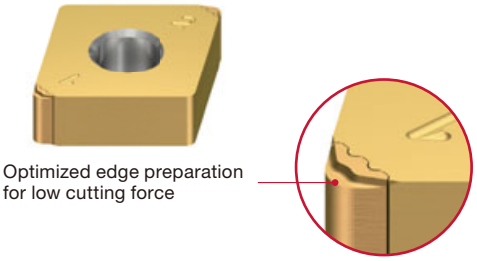
- Designed for high feed machining.
- Provides excellent chip control for a wide range of D.O.C. and feed rates.
- Edge preparation is designed to prevent catastrophic failure.



HP chipbreaker

Designed for finish machining of hardened parts with close tolerances

- Optimized chipbreaker geometry significantly reduces cutting force imposed on the cutting edge, ensuring long tool life.
- The edge preparation is designed to generate low cutting force, providing chatter-free machining and close tolerances.
- The built-in wiper yields excellent surface quality and good chip control.



HF and HM chipbreaker

- Suited for hard turning applications requiring great D.O.C. such as carburized layer removal.
- Effective chip breaking is possible for a wide range of hard materials.
- **BXA20** and **BXM20** CBN grade inserts are available for aggressive cutting depths.

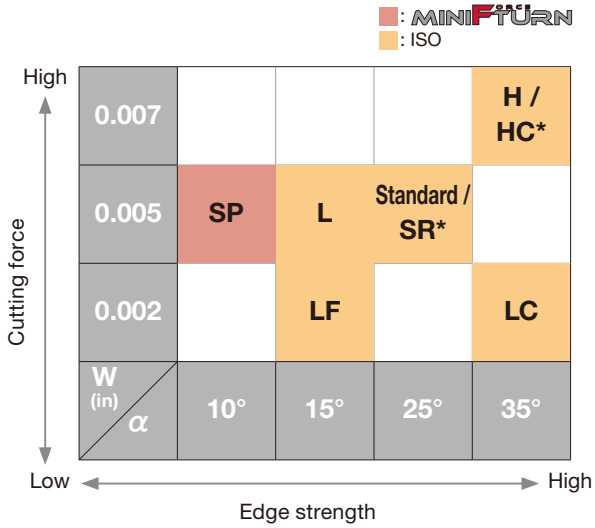
■ Edge preparations

Various styles of edge preparations are available according to the application needs

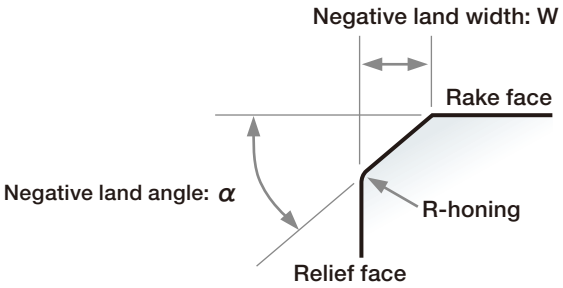
BXA10 and BXA20 grade ISO inserts are available in five different styles of edge preps: L, LF, LC, standard and -H; BR35F grade ISO inserts are offered in two styles of edge preps: SR and HC.

*For the new BR35F grade ISO inserts, "SR" is assigned for the edge prep symbol for S01325, instead of "Standard" as previously assigned. Likewise, "HC" for S01835, instead of conventional "H".

MiniForce-Turn inserts are available in the SP style edge prep (S01310).



*Edge prep symbol for BR35F grade inserts only



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

S ··· Chamfered + R-honing

Non-Ferrous Application Series

Complete turning solutions for non-ferrous materials



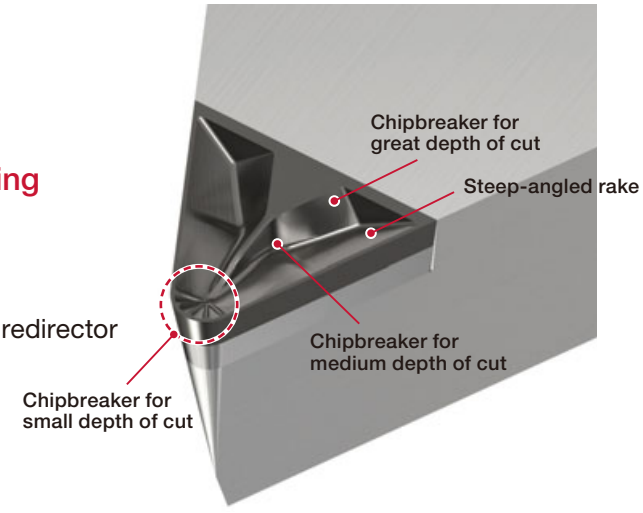
■ PCD inserts with 3D chipbreaker

NS chipbreaker

No more chip nesting in aluminum alloy machining

Unique 3D chipbreaker

- Versatile geometry allows excellent chip control
- One insert handles from rough to finish operations
- Optimal rake angle design effectively directs chips to the redirector



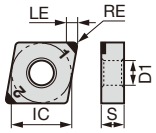
CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



80°Rhombic with hole



IC : 0.500"
D1 : 0.203"
S : 0.187"

		BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX815	BX930
K	Cast iron													●◐		●	
S	Superalloy													●◐	●		
H	Hard material	●	●◐	✣	●	●◐	✣	●	●◐	●	●	●◐	✣				
	Sintered metal													●◐	◐✣		

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX815	BX930
Precision finishing	2QP-CNGA 430.5-LF	2QP-CNGA120402-LF	0.008	0.091	2			○				●	●														
	2QP-CNGA 430.5-L	2QP-CNGA120402-L		0.091	2				○			●	●														
	2QP-CNGA 431-F	2QP-CNGA120404F	0.016	0.091	2			○																●			
	2QP-CNGA 431-E	2QP-CNGA120404-E		0.091	2		○																			●	
	2QP-CNGA 431-LT	2QP-CNGA120404-LT		0.091	2						○															●	
	2QP-CNGA 431-LF	2QP-CNGA120404-LF		0.091	2			○				●	●														
	4QS-CNGA 431-LF	4QS-CNGA120404-LF		0.063	4			○				●	●														
	2QP-CNGA 431-L	2QP-CNGA120404-L		0.091	2				○			●	●		●	●					●						
	2QP-CNGA 431-FW	2QP-CNGA120404FW		0.091	2	○	○					●	●		●	●											
	2QP-CNGA 431-W	-		0.091	2	○	○														●						
	4QS-CNGA 431-FW	4QS-CNGA120404FW		0.063	4	○	○					●	●														
	2QP-CNMA 431-W	2QP-CNMA120404W		0.091	2	○	○														●						
	4QP-CNMA 431	4QP-CNMA120404W		0.091	4	○	○										●										
	2QP-CNGA 432-F	2QP-CNGA120408F	0.031	0.087	2			○																●			
	2QP-CNGA 432-E	2QP-CNGA120408-E		0.087	2																					●	
	2QP-CNGA 432-LT	2QP-CNGA120408-LT		0.087	2																					●	
	2QP-CNGA 432-LF	2QP-CNGA120408-LF		0.087	2			○				●	●														
	4QS-CNGA 432-LF	4QS-CNGA120408-LF		0.059	4			○				●	●														
	2QP-CNGA 432-L	2QP-CNGA120408-L		0.087	2				○			●	●		●	●					●						
	2QP-CNGA 432 FW	2QP-CNGA120408FW		0.087	2	○	○					●	●		●	●											
	2QP-CNGA 432-W	-		0.087	2	○	○														●						
	4QS-CNGA 432 FW	4QS-CNGA120408FW		0.071	4	○	○					●	●														
	2QP-CNMA 432-W	2QP-CNMA120408W		0.087	2	○	○														●						
	4QP-CNMA 432	4QP-CNMA120408W		0.087	4	○	○										●										
	2QP-CNGA 433-E	2QP-CNGA120412-E	0.047	0.094	2																					●	
	2QP-CNGA 433-LT	2QP-CNGA120412-LT		0.094	2																					●	
	2QP-CNGA 433-LF	2QP-CNGA120412-LF		0.094	2			○				●	●														
	4QS-CNGA 433-LF	4QS-CNGA120412-LF		0.067	4			○				●	●														
	2QP-CNGA 433-L	2QP-CNGA120412-L		0.094	2				○			●	●		●	●					●						
	2QP-CNGA 433 FW	2QP-CNGA120412FW		0.094	2	○	○					●	●		●	●											
	4QS-CNGA 433 FW	4QS-CNGA120412FW		0.083	4	○	○					●	●														
	2QP-CNMA 433-W	2QP-CNMA120412W		0.094	2	○	○														●						
	4QP-CNMA 433	4QP-CNMA120412W		0.094	4	○	○										●										
	2QP-CNGA 434-E	2QP-CNGA120416-E	0.063	0.130	2																					●	
	2QP-CNGA 434-LT	2QP-CNGA120416-LT		0.130	2																					●	
	2QP-CNGA 435-E	2QP-CNGA120420-E	0.079	0.125	2																					●	
	2QP-CNGA 435-LT	2QP-CNGA120420-LT		0.125	2																					●	
Finishing	2QP-CNGA 430.5	2QP-CNGA120402	0.008	0.091	2		○					●	●														
	2QP-CNGA 430.5-LC	2QP-CNGA120402-LC		0.091	2					○		●	●														
	2QP-CNGA 431	2QP-CNGA120404	0.016	0.091	2		○					●	●		●	●				●	●	●	●	●	●		●
	T2QP-CNGA 431	T2QP-CNGA120404		0.091	2		○															●					
	2QP-CNGA 431-SR	2QP-CNGA120404SR		0.091	2		○							●													
	4QS-CNGA 431	4QS-CNGA120404		0.063	4		○					●	●														
	4QS-CNGA 431-SR	4QS-CNGA120404SR		0.063	4		○							●													
	4QP-CNGA 431	4QP-CNGA120404		0.091	4		○										●	●	●								
	2QP-CNGA 431-LC	2QP-CNGA120404-LC		0.091	2					○		●	●														
	4QS-CNGA 431-LC	4QS-CNGA120404-LC		0.063	4					○		●	●														

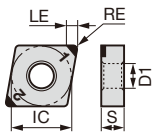
T at the beginning of the designation means 10 pieces per package.
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



IC : 0.500"
D1 : 0.203"
S : 0.187"



80°Rhombic with hole

		BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
K	Cast iron														●◐	●
S	Superalloy														●◐	
H	Hard material	●	●◐	✣	●	●◐	✣	●	●◐	●	●	●◐	✣			
	Sintered metal													●◐	◐✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Improve issue* Standard	Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
Finishing	2QP-CNGA 432	2QP-CNGA120408	0.031	0.087	2		○					●	●		●	●				●	●	●	●	●	●	●
	T2QP-CNGA 432	T2QP-CNGA120408		0.087	2		○															●				
	2QP-CNGA 432-SR	2QP-CNGA120408SR		0.087	2		○							●												
	4QS-CNGA 432	4QS-CNGA120408		0.059	4		○					●	●													
	4QS-CNGA 432-SR	4QS-CNGA120408SR		0.059	4		○							●												
	4QP-CNGA 432	4QP-CNGA120408		0.087	4		○										●	●	●							
	2QP-CNGA 432-LC	2QP-CNGA120408-LC	0.031	0.087	2					○		●	●													
	4QS-CNGA 432-LC	4QS-CNGA120408-LC		0.059	4					○		●	●													
	2QP-CNGA 433	2QP-CNGA120412	0.047	0.094	2		○					●	●		●	●				●	●	●	●	●	●	●
	2QP-CNGA 433-SR	2QP-CNGA120412SR		0.094	2		○							●												
	4QS-CNGA 433	4QS-CNGA120412		0.067	4		○					●	●													
	4QS-CNGA 433-SR	4QS-CNGA120412SR		0.067	4		○							●												
	4QP-CNGA 433	4QP-CNGA120412		0.094	4		○										●	●	●							
	2QP-CNGA 433-LC	2QP-CNGA120412-LC		0.094	2					○		●	●													
	4QS-CNGA 433-LC	4QS-CNGA120412-LC		0.067	4					○		●	●													
	2QP-CNGA 434	2QP-CNGA120416	0.063	0.130	2		○					●	●													
	2QP-CNGA 434-SR	2QP-CNGA120416SR		0.130	2		○							●												
	2QP-CNGA 435	2QP-CNGA120420	0.079	0.125	2		○					●	●													
	2QP-CNGA 435-SR	2QP-CNGA120420SR		0.125	2		○							●												
	2QP-CNGA 436	2QP-CNGA120424	0.094	0.122	2		○					●	●													
	2QP-CNGA 436-SR	2QP-CNGA120424SR		0.122	2		○							●												
Medium cutting	2QP-CNGA 431-H	2QP-CNGA120404-H	0.016	0.091	2						○	●	●			●						●	●			
	2QP-CNGA 431-HC	2QP-CNGA120404HC		0.091	2						○			●												
	4QS-CNGA 431-H	4QS-CNGA120404-H		0.063	4						○	●	●													
	4QS-CNGA 431-HC	4QS-CNGA120404HC		0.063	4						○			●												
	4QP-CNGA 431-H	4QP-CNGA120404-H		0.091	4						○								●							
	2QP-CNGA 432-H	2QP-CNGA120408-H	0.031	0.087	2						○	●	●			●						●	●			
	2QP-CNGA 432-HC	2QP-CNGA120408HC		0.087	2						○			●												
	4QS-CNGA 432-H	4QS-CNGA120408-H		0.059	4						○	●	●													
	4QS-CNGA 432-HC	4QS-CNGA120408HC		0.059	4						○			●												
	4QP-CNGA 432-H	4QP-CNGA120408-H		0.087	4						○								●							
	2QP-CNGA 433-H	2QP-CNGA120412-H	0.047	0.094	2						○	●	●			●						●	●			
	2QP-CNGA 433-HC	2QP-CNGA120412HC		0.094	2						○			●												
	4QS-CNGA 433-H	4QS-CNGA120412-H		0.067	4						○	●	●													
	4QS-CNGA 433-HC	4QS-CNGA120412HC		0.067	4						○			●												
	4QP-CNGA 433-H	4QP-CNGA120412-H		0.094	4						○								●							
	2QP-CNGA 434-HC	2QP-CNGA120416HC	0.063	0.130	2						○			●												
	2QP-CNGA 435-HC	2QP-CNGA120420HC	0.079	0.125	2						○			●												
	2QP-CNGA 436-HC	2QP-CNGA120424HC	0.094	0.122	2						○			●												

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

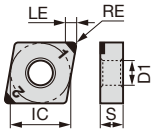
● : Line up

Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.187"



80°Rhombic with hole

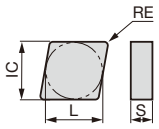
		BXA10	BXA20	BR35F	BXM10	BXM20	BXA40
K	Cast iron	●	●◐	✣	●	●◐	●◐
S	Superalloy						
H	Hard material						
	Sintered metal						

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA40
Precision finishing	2QP-CNGM 431 HP	2QP-CNGM120404-HP	0.016	0.091	2		○					●	●	●	●		
	4QS-CNGG 431 HP	4QS-CNGG120404-HP		0.063	4		○					●	●	●			
	2QP-CNGM 431 HS	2QP-CNGM120404-HS		0.091	2		○					●	●	●			
	4QS-CNGG 431 HS	4QS-CNGG120404-HS		0.063	4		○					●	●	●			
	2QP-CNGM 432 HP	2QP-CNGM120408-HP	0.031	0.087	2		○					●	●	●	●		
	4QS-CNGG 432 HP	4QS-CNGG120408-HP		0.059	4		○					●	●	●			
	2QP-CNGM 432 FW-HP	2QP-CNGM120408FW-HP		0.087	2	○	○					●	●		●		
	4QS-CNGG 432 FW-HP	4QS-CNGG120408FW-HP		0.071	4	○	○					●	●				
	2QP-CNGM 432 HS	2QP-CNGM120408-HS		0.087	2		○					●	●	●			
	4QS-CNGG 432 HS	4QS-CNGG120408-HS		0.071	4		○					●	●	●			
	2QP-CNGM 432 FW-HS	2QP-CNGM120408FW-HS		0.087	2	○	○					●	●				
	2QP-CNGM 433-HP	2QP-CNGM120412-HP	0.047	0.094	2		○					●	●	●	●		
	2QP-CNGM 433 HS	2QP-CNGM120412-HS		0.094	2		○					●	●	●			
	4QS-CNGG 433 HS	4QS-CNGG120412-HS		0.087	4		○					●	●	●			
	2QP-CNGM 433 FW-HS	2QP-CNGM120412FW-HS		0.094	2	○	○					●	●				
Medium cutting	2QP-CNGM 432 HF	2QP-CNGM120408-HF	0.031	0.087	2		○						●			●	
	4QS-CNGG 432 HF	4QS-CNGG120408-HF		0.071	4		○						●				
	4QP-CNGG 432 HF	4QP-CNGG120408-HF		0.087	4		○									●	
	2QP-CNGM 432 HM	2QP-CNGM120408-HM		0.087	2		○						●			●	
	4QS-CNGG 432 HM	4QS-CNGG120408-HM		0.059	4		○						●				
	4QP-CNGG 432 HM	4QP-CNGG120408-HM		0.087	4		○									●	
	2QP-CNGM 433 HF	2QP-CNGM120412-HF	0.047	0.094	2		○						●			●	
	4QS-CNGG 433 HF	4QS-CNGG120412-HF		0.087	4		○						●				
	4QP-CNGG 433 HF	4QP-CNGG120412-HF		0.094	4		○									●	
	2QP-CNGM 433 HM	2QP-CNGM120412-HM		0.094	2		○						●			●	
	4QS-CNGG 433 HM	4QS-CNGG120412-HM		0.067	4		○						●				
	4QP-CNGG 433 HM	4QP-CNGG120412-HM		0.094	4		○									●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CN Solid insert



IC : 0.375"
S : 0.125"



80° Rhombic without hole

		BXC90
K	Cast iron	✣
S	Superalloy	
H	Hard material	
	Sintered metal	

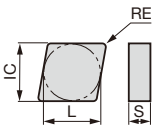
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-CNGN 322	S-CNGN090308	0.031		4		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN Solid insert



IC : 0.500"
S : 0.187"

80° Rhombic without hole

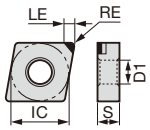
K	Cast iron	✠
S	Superalloy	
H	Hard material	
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-CNGN 432	S-CNGN120408	0.031		4		○					●
	S-CNGN 433	S-CNGN120412	0.047		4		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CN



IC : 0.500"
D1 : 0.203"
S : 0.187"

80°Rhombic with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●ⓒ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Medium cutting	CNGA 430.5 QBN	CNGA120402-QBN	0.008	0.161	1		○					●
	CNGA 431 QBN	CNGA120404-QBN	0.016	0.157	1		○					●
	CNGA 432 QBN	CNGA120408-QBN	0.031	0.154	1		○					●
	CNGA 433 QBN	CNGA120412-QBN	0.047	0.154	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

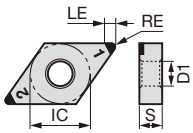
● : Line up

Reference pages: CNGA, CNGG, CNGM:
External toolholder → C019 -, Internal toolholder → D027 -
J-Series toolholder → G036, TungCap → K008 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



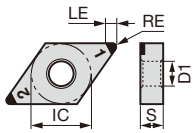
IC : 0.375"
D1 : 0.150"
S : 0.187"

55° Rhombic with hole

| | | |

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



IC : 0.500"
D1 : 0.203"
S : 0.187"

55° Rhombic with hole

		BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
K	Cast iron														●◐	●
S	Superalloy														●◐	
H	Hard material	●	●◐	✣	●	●◐	✣	●	●◐	●	●	●◐	✣			
	Sintered metal													●◐	◐✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
Finishing	2QP-DNGA 432	2QP-DNGA150408	0.031	0.083	2		○					●	●		●	●				●	●	●	●	●	●	●
	2QP-DNGA 432-SR	2QP-DNGA150408SR		0.083	2		○							●												
	4QS-DNGA 432	4QS-DNGA150408		0.063	4		○					●	●													
	4QS-DNGA 432-SR	4QS-DNGA150408SR		0.063	4		○							●												
	4QP-DNGA 432	4QP-DNGA150408		0.083	4		○										●	●	●							
	2QP-DNGA 432-LC	2QP-DNGA150408-LC		0.083	2					○		●	●													
	4QS-DNGA 432-LC	4QS-DNGA150408-LC		0.063	4					○		●	●													
	2QP-DNGA 433	2QP-DNGA150412	0.047	0.079	2		○					●	●		●	●				●	●	●	●		●	●
	2QP-DNGA 433-SR	2QP-DNGA150412SR		0.079	2		○							●												
	4QS-DNGA 433	4QS-DNGA150412		0.063	4		○					●	●													
	4QS-DNGA 433-SR	4QS-DNGA150412SR		0.063	4		○							●												
	4QP-DNGA 433	4QP-DNGA150412		0.079	4		○										●	●	●							
	2QP-DNGA 433-LC	2QP-DNGA150412-LC		0.079	2					○		●	●													
	4QS-DNGA 433-LC	4QS-DNGA150412-LC		0.063	4					○		●	●													
	2QP-DNGA 434	2QP-DNGA150416	0.063	0.134	2		○					●	●													
	2QP-DNGA 434-SR	2QP-DNGA150416SR		0.134	2		○							●												
	2QP-DNGA 435	2QP-DNGA150420	0.079	0.118	2		○					●	●													
	2QP-DNGA 435-SR	2QP-DNGA150420SR		0.118	2		○							●												
	2QP-DNGA 436	2QP-DNGA150424	0.094	0.102	2		○					●	●													
	2QP-DNGA 436-SR	2QP-DNGA150424SR		0.102	2		○							●												
Medium cutting	2QP-DNGA 431-H	2QP-DNGA150404-H	0.016	0.098	2						○	●	●			●						●	●			
	2QP-DNGA 431-HC	2QP-DNGA150404HC		0.098	2						○			●												
	4QS-DNGA 431-H	4QS-DNGA150404-H		0.079	4						○	●	●													
	4QS-DNGA 431-HC	4QS-DNGA150404HC		0.079	4						○			●												
	4QP-DNGA 431-H	4QP-DNGA150404-H		0.098	4						○								●							
	2QP-DNGA 432-H	2QP-DNGA150408-H	0.031	0.083	2						○	●	●			●					●	●				
	2QP-DNGA 432-HC	2QP-DNGA150408HC		0.083	2						○			●												
	4QS-DNGA 432-H	4QS-DNGA150408-H		0.063	4						○	●	●													
	4QS-DNGA 432-HC	4QS-DNGA150408HC		0.063	4						○			●												
	4QP-DNGA 432-H	4QP-DNGA150408-H		0.083	4						○								●							
	2QP-DNGA 433-H	2QP-DNGA150412-H	0.047	0.079	2						○	●	●			●						●	●			
	2QP-DNGA 433-HC	2QP-DNGA150412HC		0.079	2						○			●												
	4QS-DNGA 433-H	4QS-DNGA150412-H		0.063	4						○	●	●													
	4QS-DNGA 433-HC	4QS-DNGA150412HC		0.063	4						○			●												
	4QP-DNGA 433-H	4QP-DNGA150412-H		0.079	4						○								●							
	2QP-DNGA 434-HC	2QP-DNGA150416HC	0.063	0.134	2						○			●												
	2QP-DNGA 435-HC	2QP-DNGA150420HC	0.079	0.118	2						○			●												
	2QP-DNGA 436-HC	2QP-DNGA150424HC	0.094	0.102	2						○			●												

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

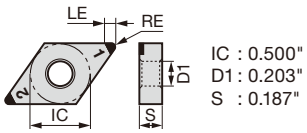
● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.187"

55° Rhombic with hole

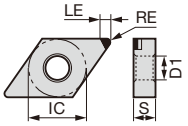
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA40
Precision finishing	2QP-DNGM 431 HP	2QP-DNGM150404-HP	0.016	0.098	2		○					●	●	●	●		
	4QS-DNGG 431 HP	4QS-DNGG150404-HP		0.079	4		○					●	●	●			
	2QP-DNGM 431 HS	2QP-DNGM150404-HS		0.098	2		○					●	●	●			
	4QS-DNGG 431 HS	4QS-DNGG150404-HS		0.079	4		○					●	●	●			
	2QP-DNGM 432 HP	2QP-DNGM150408-HP	0.031	0.083	2		○					●	●	●	●		
	4QS-DNGG 432 HP	4QS-DNGG150408-HP		0.063	4		○					●	●	●			
	2QP-DNGM 432 HS	2QP-DNGM150408-HS		0.083	2		○					●	●	●			
	4QS-DNGG 432 HS	4QS-DNGG150408-HS		0.063	4		○					●	●	●			
	2QP-DNGM 433 HP	2QP-DNGM150412-HP	0.047	0.079	2		○					●	●	●			
	2QP-DNGM 433 HS	2QP-DNGM150412-HS		0.079	2		○					●	●	●			
	4QS-DNGG 433 HS	4QS-DNGG150412-HS		0.063	4		○					●	●	●			
Medium cutting	2QP-DNGM 432 HF	2QP-DNGM150408-HF	0.031	0.083	2		○						●			●	
	4QS-DNGG 432 HF	4QS-DNGG150408-HF		0.079	4		○						●				
	4QP-DNGG 432 HF	4QP-DNGG150408-HF		0.083	4		○										●
	2QP-DNGM 432 HM	2QP-DNGM150408-HM		0.083	2		○									●	
	4QS-DNGG 432 HM	4QS-DNGG150408-HM		0.063	4		○						●				
	4QP-DNGG 432 HM	4QP-DNGG150408-HM		0.083	4		○										●
	2QP-DNGM 433 HF	2QP-DNGM150412-HF	0.047	0.079	2		○						●			●	
	4QS-DNGG 433 HF	4QS-DNGG150412-HF		0.102	4		○						●				
	4QP-DNGG 433 HF	4QP-DNGG150412-HF		0.079	4		○										●
	2QP-DNGM 433 HM	2QP-DNGM150412-HM		0.079	2		○									●	
	4QP-DNGG433 HM	4QP-DNGG150412-HM		0.079	4		○										●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

DN



IC : 0.500"
D1 : 0.203"
S : 0.187"

55° Rhombic with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	DNGA 430.5-QBN	DNGA150402-QBN	0.008	0.169	1		○					●
	DNGA 431-QBN	DNGA150404-QBN	0.016	0.173	1		○					●
	DNGA 432-QBN	DNGA150408-QBN	0.031	0.150	1		○					●
	DNGA 433-QBN	DNGA150412-QBN	0.047	0.134	1		○					●

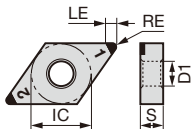
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



IC : 0.500"
D1 : 0.203"
S : 0.250"

55° Rhombic with hole

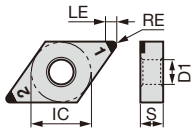
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20
Precision finishing	2QP-DNGA 441-LF	2QP-DNGA150604-LF	0.016	0.098	2			○				●	●			
	2QP-DNGA 441-L	2QP-DNGA150604-L		0.098	2				○			●	●			
	2QP-DNGA 442-LF	2QP-DNGA150608-LF	0.031	0.083	2			○				●	●			
	2QP-DNGA 442-L	2QP-DNGA150608-L		0.083	2				○			●	●			
	2QP-DNGA 443-LF	2QP-DNGA150612-LF	0.047	0.079	2			○				●	●			
	2QP-DNGA 443-L	2QP-DNGA150612-L		0.079	2				○			●	●			
Finishing	2QP-DNGA 441	2QP-DNGA150604	0.016	0.098	2		○					●	●		●	●
	2QP-DNGA 441-SR	2QP-DNGA150604SR		0.098	2		○							●		
	2QP-DNGA 441-LC	2QP-DNGA150604-LC		0.098	2					○		●	●			
	2QP-DNGA 442	2QP-DNGA150608	0.031	0.083	2		○					●	●		●	●
	2QP-DNGA 442-SR	2QP-DNGA150608SR		0.083	2		○							●		
	2QP-DNGA 442-LC	2QP-DNGA150608-LC		0.083	2					○		●	●			
	2QP-DNGA 443	2QP-DNGA150612	0.047	0.079	2		○					●	●		●	●
	2QP-DNGA 443-SR	2QP-DNGA150612SR		0.079	2		○							●		
	2QP-DNGA 443-LC	2QP-DNGA150612-LC		0.079	2					○		●	●			
Medium cutting	2QP-DNGA 441-H	2QP-DNGA150604-H	0.016	0.098	2						○	●	●			
	2QP-DNGA 441-HC	2QP-DNGA150604HC		0.098	2						○			●		
	2QP-DNGA 442-H	2QP-DNGA150608-H	0.031	0.083	2						○	●	●			
	2QP-DNGA 442-HC	2QP-DNGA150608HC		0.083	2						○			●		
	2QP-DNGA 443-H	2QP-DNGA150612-H	0.047	0.079	2						○	●	●			
	2QP-DNGA 443-HC	2QP-DNGA150612HC		0.079	2						○			●		

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

DN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.250"

55° Rhombic with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10
Precision finishing	2QP-DNGM 442 HP	2QP-DNGM150608-HP	0.031	0.083	2		○					●	●	●	●
	2QP-DNGM 442 HS	2QP-DNGM150608-HS		0.083	2		○					●	●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

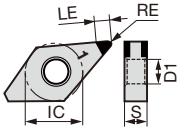
● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

FN



IC : 0.500"
D1 : 0.203"
S : 0.187"

45° Rhombic with hole

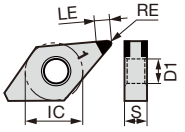
K	Cast iron	
S	Superalloy	
H	Hard material	●ɔ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA20
Precision finishing	2QP-FNGA 431-LF	2QP-FNGA150404-LF	0.016	0.102	2			○				●
	2QP-FNGA 431-L	2QP-FNGA150404-L		0.102	2				○			●
	2QP-FNGA 432-LF	2QP-FNGA150408-LF	0.031	0.118	2			○				●
	2QP-FNGA 432-L	2QP-FNGA150408-L		0.118	2				○			●
	2QP-FNGA 433-LF	2QP-FNGA150412-LF	0.047	0.130	2			○				●
	2QP-FNGA 433-L	2QP-FNGA150412-L		0.130	2				○			●
Finishing	2QP-FNGA 430.5	2QP-FNGA150402	0.008	0.109	2		○					●
	2QP-FNGA 431	2QP-FNGA150404	0.016	0.102	2		○					●
	2QP-FNGA 431-LC	2QP-FNGA150404-LC		0.102	2					○		●
	2QP-FNGA 432	2QP-FNGA150408	0.031	0.118	2		○					●
	2QP-FNGA 432-LC	2QP-FNGA150408-LC		0.118	2					○		●
	2QP-FNGA 433	2QP-FNGA150412	0.047	0.130	2		○					●
	2QP-FNGA 433-LC	2QP-FNGA150412-LC		0.130	2					○		●
Medium cutting	2QP-FNGA 431-H	2QP-FNGA150404-H	0.016	0.102	2						○	●
	2QP-FNGA 432-H	2QP-FNGA150408-H	0.031	0.118	2						○	●
	2QP-FNGA 433-H	2QP-FNGA150412-H	0.047	0.130	2						○	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

FN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.187"

45° Rhombic with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●ɔ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA20
Precision finishing	2QP-FNGG 431 HP	2QP-FNGG150404-HP	0.016	0.102	2		○					●
	2QP-FNGG 432 HP	2QP-FNGG150408-HP	0.031	0.118	2		○					●
	2QP-FNGG 433 HP	2QP-FNGG150412-HP	0.047	0.130	2		○					●

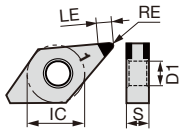
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

FN



IC : 0.500"
D1 : 0.203"
S : 0.250"

45° Rhombic with hole

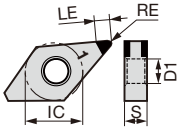
K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Improve issue* Flank wear	Improve issue* Crater wear	Improve issue* Chipping	BXA20
Precision finishing	2QP-FNGA 441-LF	2QP-FNGA150604-LF	0.016	0.102	2			○				●
	2QP-FNGA 441-L	2QP-FNGA150604-L		0.102	2				○			●
	2QP-FNGA 442-LF	2QP-FNGA150608-LF	0.031	0.118	2			○				●
	2QP-FNGA 442-L	2QP-FNGA150608-L		0.118	2				○			●
	2QP-FNGA 443-LF	2QP-FNGA150612-LF	0.047	0.130	2			○				●
	2QP-FNGA 443-L	2QP-FNGA150612-L		0.130	2				○			●
Finishing	2QP-FNGA 441	2QP-FNGA150604	0.016	0.102	2		○					●
	2QP-FNGA 441-LC	2QP-FNGA150604-LC		0.102	2					○		●
	2QP-FNGA 442	2QP-FNGA150608	0.031	0.118	2		○					●
	2QP-FNGA 442-LC	2QP-FNGA150608-LC		0.118	2					○		●
	2QP-FNGA 443	2QP-FNGA150612	0.047	0.130	2		○					●
	2QP-FNGA 443-LC	2QP-FNGA150612-LC		0.130	2					○		●
Medium cutting	2QP-FNGA 441-H	2QP-FNGA150604-H	0.016	0.102	2						○	●
	2QP-FNGA 442-H	2QP-FNGA150608-H	0.031	0.118	2						○	●
	2QP-FNGA 443-H	2QP-FNGA150612-H	0.047	0.130	2						○	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

FN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.250"

45° Rhombic with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Improve issue* Flank wear	Improve issue* Crater wear	Improve issue* Chipping	BXA20
Precision finishing	2QP-FNGG 441 HP	2QP-FNGG150604-HP	0.016	0.102	2		○					●
	2QP-FNGG 442 HP	2QP-FNGG150608-HP	0.031	0.118	2		○					●
	2QP-FNGG 443 HP	2QP-FNGG150612-HP	0.047	0.130	2		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

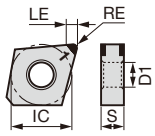
● : Line up

Reference pages: External toolholder → C036 - Internal toolholder → D042 -
J-Series toolholder → G052 TungCap → K011 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

GN



IC : 0.500"
D1 : 0.203"
S : 0.187"

70° Rhombic with hole

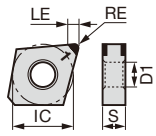
K	Cast iron	●
S	Superalloy	
H	Hard material	● ◐ ✣ ◐ ◐
	Sintered metal	◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM20	BX360	BX470	BX930
Precision finishing	2QP-GNGA 430.5-LF	2QP-GNGA120402-LF	0.008	0.087	2			○				●	●					
	2QP-GNGA 430.5-L	2QP-GNGA120402-L		0.087	2				○			●	●					
	2QP-GNGA 431-LF	2QP-GNGA120404-LF	0.016	0.083	2			○				●	●					
	2QP-GNGA 431-L	2QP-GNGA120404-L		0.083	2				○			●	●					
	2QP-GNGA 432-LF	2QP-GNGA120408-LF	0.031	0.083	2			○				●	●					
	2QP-GNGA 432-L	2QP-GNGA120408-L		0.083	2				○			●	●					
	2QP-GNGA 433-LF	2QP-GNGA120412-LF	0.047	0.087	2			○				●	●					
	2QP-GNGA 433-L	2QP-GNGA120412-L		0.087	2				○			●	●					
Finishing	2QP-GNGA 430.5	2QP-GNGA120402	0.008	0.087	2		○					●	●					
	2QP-GNGA 430.5-LC	2QP-GNGA120402-LC		0.087	2					○		●	●					
	2QP-GNGA 431	2QP-GNGA120404	0.016	0.083	2		○					●	●		●	●		
	2QP-GNGA 431-SR	2QP-GNGA120404SR		0.083	2		○							●				
	2QP-GNGA 431-LC	2QP-GNGA120404-LC		0.083	2					○		●	●					
	2QP-GNGA 432	2QP-GNGA120408	0.031	0.083	2		○					●	●		●	●	●	●
	2QP-GNGA 432-SR	2QP-GNGA120408SR		0.083	2		○							●				
	2QP-GNGA 432-LC	2QP-GNGA120408-LC		0.083	2					○		●	●					
	2QP-GNGA 433	2QP-GNGA120412	0.047	0.087	2		○					●	●		●	●	●	●
	2QP-GNGA 433-SR	2QP-GNGA120412SR		0.087	2		○							●				
	2QP-GNGA 433-LC	2QP-GNGA120412-LC		0.087	2					○		●	●					
Medium cutting	2QP-GNGA 431-H	2QP-GNGA120404-H	0.016	0.083	2						○	●	●					
	2QP-GNGA 431-HC	2QP-GNGA120404HC		0.083	2						○			●				
	2QP-GNGA 432-H	2QP-GNGA120408-H	0.031	0.083	2						○	●	●					
	2QP-GNGA 432-HC	2QP-GNGA120408HC		0.083	2						○			●				
	2QP-GNGA 433-H	2QP-GNGA120412-H	0.047	0.087	2						○	●	●					
	2QP-GNGA 433-HC	2QP-GNGA120412HC		0.087	2						○			●				

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

GN with chipbreaker



IC : 0.500"
D1 : 0.203"
S : 0.187"

70° Rhombic with hole

K	Cast iron	
S	Superalloy	
H	Hard material	● ◐ ●
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10
Precision finishing	2QP-GNGG 431 HP	2QP-GNGG120404-HP	0.016	0.083	2		○					●	●	●
	2QP-GNGG 431 HS	2QP-GNGG120404-HS		0.083	2		○					●	●	
	2QP-GNGG 432 HP	2QP-GNGG120408-HP	0.031	0.083	2		○					●	●	●
	2QP-GNGG 432 HS	2QP-GNGG120408-HS		0.083	2		○					●	●	
	2QP-GNGG 433 HP	2QP-GNGG120412-HP	0.047	0.087	2		○					●	●	●
	2QP-GNGG 433 HS	2QP-GNGG120412-HS		0.087	2		○					●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

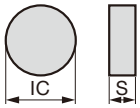
Reference pages: External toolholder → C019 - Internal toolholder → D027 -
J-Series toolholder → G036 TungCap → K008 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

RN Solid insert



Round, without hole



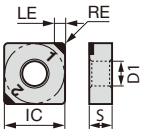
IC : 0.375"
S : 0.125"

| | | |

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN



IC : 0.500"
D1 : 0.203"
S : 0.187"

Square with hole

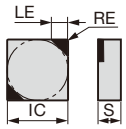
		BXA10	BXA20	BR35F	BXM20	BXC50	BXA40	BX310	BX330	BX360	BX380	BX480	BX930
K	Cast iron											◐	●
S	Superalloy											◐	
H	Hard material	●	◐	✣	◐	✣	◐	●	●	◐	✣		
	Sintered metal											◐	✣

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM20	BXC50	BXA40	BX310	BX330	BX360	BX380	BX480	BX930
Precision finishing	2QP-SNGA 431-L	2QP-SNGA120404-L	0.016	0.094	2				○										●				
	2QP-SNGA 432-LF	2QP-SNGA120408-LF	0.031	0.094	2			○				●	●										
	2QP-SNGA 432-L	2QP-SNGA120408-L		0.094	2				○			●	●		●				●				
	2QP-SNGA 433-LF	2QP-SNGA120412-LF	0.047	0.094	2			○				●	●										
	2QP-SNGA 433-L	2QP-SNGA120412-L		0.094	2				○			●	●		●				●				
Finishing	2QP-SNGA 431	2QP-SNGA120404	0.016	0.094	2		○					●	●		●			●	●	●	●	●	●
	4QS-SNGA 431	4QS-SNGA120404		0.071	4		○					●	●										
	4QP-SNGA 431	4QP-SNGA120404		0.094	4		○									●	●						
	2QP-SNGA 432	2QP-SNGA120408	0.031	0.094	2		○					●	●		●			●	●	●	●	●	●
	2QP-SNGA 432-SR	2QP-SNGA120408SR		0.094	2		○							●									
	4QS-SNGA 432	4QS-SNGA120408		0.071	4		○					●	●										
	4QS-SNGA 432-SR	4QS-SNGA120408SR		0.071	4		○							●									
	4QP-SNGA 432	4QP-SNGA120408		0.094	4		○									●	●						
	2QP-SNGA 433	2QP-SNGA120412	0.047	0.094	2		○					●	●		●			●	●	●	●	●	●
	2QP-SNGA 433-SR	2QP-SNGA120412SR		0.094	2		○							●									
	4QS-SNGA 433	4QS-SNGA120412		0.071	4		○					●	●										
	4QS-SNGA 433-SR	4QS-SNGA120412SR		0.071	4		○							●									
	4QP-SNGA 433	4QP-SNGA120412		0.094	4		○									●	●						
Medium cutting	2QP-SNGA 431-H	2QP-SNGA120404-H	0.016	0.094	2						○									●	●		
	2QP-SNGA 432-H	2QP-SNGA120408-H	0.031	0.094	2						○		●		●					●	●		
	4QP-SNGA 432-H	4QP-SNGA120408-H		0.094	4						○						●						
	2QP-SNGA 433-H	2QP-SNGA120412-H	0.047	0.094	2						○		●		●					●	●		
	4QP-SNGA 433-H	4QP-SNGA120412-H		0.094	4						○						●						

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SN



IC : 0.375"
S : 0.125"

Square without hole

		BX910
K	Cast iron	●
S	Superalloy	
H	Hard material	
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX910
Finishing	2QP-SNGN 322	2QP-SNGN090308	0.031	0.094	2		○					●
	2QP-SNGN 323	2QP-SNGN090312	0.047	0.094	2		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

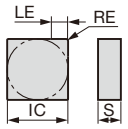
● : Line up

Reference pages: SNGA: External toolholder → C076 -, Internal toolholder → D054 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN Solid insert

Square without hole



IC : 0.375"
S : 0.125"

K	Cast iron	✠
S	Superalloy	
H	Hard material	
	Sintered metal	

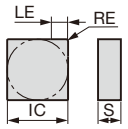
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-SNGN 322	S-SNGN090308	0.031		8		○					●
	S-SNGN 323	S-SNGN090312	0.047		8		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SN Solid insert

Square without hole



IC : 0.500"
S : 0.125"

K	Cast iron	✠
S	Superalloy	
H	Hard material	
	Sintered metal	

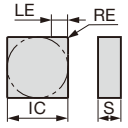
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-SNGN 422	S-SNGN120308	0.031		8		○					●
	S-SNGN 423	S-SNGN120312	0.047		8		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SN Solid insert

Square without hole



IC : 0.500"
S : 0.187"

K	Cast iron	✠
S	Superalloy	
H	Hard material	
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-SNGN 432	S-SNGN120408	0.031		8		○					●
	S-SNGN 433	S-SNGN120412	0.047		8		○					●

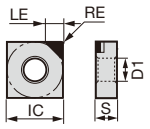
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN



IC : 0.500"
D1 : 0.203"
S : 0.187"

Square with hole

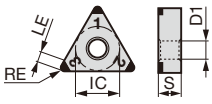
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	SNGA 430.5 QBN	SNGA120402-QBN	0.008	0.161	1		○					●
	SNGA 431 QBN	SNGA120404-QBN	0.016	0.161	1		○					●
	SNGA 432 QBN	SNGA120408-QBN	0.031	0.161	1		○					●
	SNGA 433 QBN	SNGA120412-QBN	0.047	0.161	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TN



IC : 0.375"
D1 : 0.150"
S : 0.187"

Triangular with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

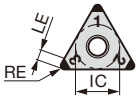
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX815	BX930
Precision finishing	3QP-TNGA 330.5-LF	3QP-TNGA160402-LF	0.008	0.091	3			○				●	●														
	3QP-TNGA 330.5-L	3QP-TNGA160402-L		0.091	3				○			●	●														
	3QP-TNGA 331-F	3QP-TNGA160404F	0.016	0.087	3			○																●			
	3QP-TNGA 331-LF	3QP-TNGA160404-LF		0.087	3			○				●	●														
	6QS-TNGA 331-LF	6QS-TNGA160404-LF		0.075	6			○				●	●														
	3QP-TNGA 331-L	3QP-TNGA160404-L		0.087	3				○			●	●		●	●					●						
	3QP-TNGA 331-WG	3QP-TNGA160404WG		0.094	3	○	○					●	●			●											
	3QP-TNGA 332-F	3QP-TNGA160408F	0.031	0.075	3			○																●			
	3QP-TNGA 332-E	3QP-TNGA160408-E		0.075	3		○																			●	
	3QP-TNGA 332-LT	3QP-TNGA160408-LT		0.075	3						○															●	
	3QP-TNGA 332-LF	3QP-TNGA160408-LF		0.075	3			○				●	●														
	6QS-TNGA 332-LF	6QS-TNGA160408-LF		0.063	6			○				●	●														
	3QP-TNGA 332-L	3QP-TNGA160408-L		0.075	3				○			●	●		●	●					●						
	3QP-TNGA 332-WG	3QP-TNGA160408WG		0.087	3	○	○					●	●		●	●											
	3QP-TNGA 333-LF	3QP-TNGA160412-LF	0.047	0.094	3			○				●	●														
	6QS-TNGA 333-LF	6QS-TNGA160412-LF		0.071	6			○				●	●														
	3QP-TNGA 333-L	3QP-TNGA160412-L		0.094	3				○			●	●		●	●					●						
Finishing	3QP-TNGA 330.5	3QP-TNGA160402	0.008	0.091	3		○					●	●														
	3QP-TNGA 330.5-LC	3QP-TNGA160402-LC		0.091	3					○		●	●														
	3QP-TNGA 331	3QP-TNGA160404	0.016	0.087	3		○					●	●		●	●				●	●	●	●	●	●		●
	T3QP-TNGA 331	T3QP-TNGA160404		0.087	3		○															●					
	3QP-TNGA 331-SR	3QP-TNGA160404SR		0.087	3		○							●													
	6QS-TNGA 331	6QS-TNGA160404		0.075	6		○					●	●														
	6QS-TNGA 331-SR	6QS-TNGA160404SR		0.075	6		○							●													
	6QP-TNGA 331	6QP-TNGA160404		0.087	6		○										●	●	●								
	3QP-TNGA 331-LC	3QP-TNGA160404-LC		0.087	3					○		●	●														
	6QS-TNGA 331-LC	6QS-TNGA160404-LC		0.075	6					○		●	●														

T at the beginning of the designation means 10 pieces per package.
*Indicates the insert to use if the wear indicated is what happens with the standard hone.
Please see page L031 about the toolholders recommended for wiper inserts of the designation with WG at the end.

● : Line up

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



IC : 0.375"
D1 : 0.150"
S : 0.187"

Triangular with hole

K	Cast iron																					●ⓒ	●	
S	Superalloy																					●ⓒ		
H	Hard material	●	●ⓒ	✣	●	●ⓒ	✣	●	●ⓒ	●	●	●ⓒ	✣												
	Sintered metal																					●ⓒ	ⓒ✣		

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
Finishing	3QP-TNGA 332	3QP-TNGA160408	0.031	0.075	3		○					●	●		●	●				●	●	●	●	●	●	●
	T3QP-TNGA 332	T3QP-TNGA160408		0.075	3		○															●				
	3QP-TNGA 332-SR	3QP-TNGA160408SR		0.075	3		○							●												
	6QS-TNGA 332	6QS-TNGA160408		0.063	6		○					●	●													
	6QS-TNGA 332-SR	6QS-TNGA160408SR		0.063	6		○							●												
	6QP-TNGA 332	6QP-TNGA160408		0.075	6		○										●	●	●							
	3QP-TNGA 332-LC	3QP-TNGA160408-LC		0.075	3					○		●	●													
	6QS-TNGA 332-LC	6QS-TNGA160408-LC		0.075	6					○		●	●													
	3QP-TNGA 333	3QP-TNGA160412	0.047	0.094	3		○					●	●		●	●				●	●	●	●	●	●	●
	3QP-TNGA 333-SR	3QP-TNGA160412SR		0.094	3		○							●												
	6QS-TNGA 333	6QS-TNGA160412		0.071	6		○					●	●													
	6QS-TNGA 333-SR	6QS-TNGA160412SR		0.071	6		○							●												
	6QP-TNGA 333	6QP-TNGA160412		0.094	6		○										●	●	●							
	3QP-TNGA 333-LC	3QP-TNGA160412-LC		0.094	3					○		●	●													
	6QS-TNGA 333-LC	6QS-TNGA160412-LC		0.071	6					○		●	●													
	3QP-TNGA 334	3QP-TNGA160416	0.063	0.130	3		○					●	●													
	3QP-TNGA 334-SR	3QP-TNGA160416SR		0.130	3		○							●												
	3QP-TNGA 335	3QP-TNGA160420	0.079	0.118	3		○					●	●													
	3QP-TNGA 335-SR	3QP-TNGA160420SR		0.118	3		○							●												
	3QP-TNGA 336	3QP-TNGA160424	0.094	0.106	3		○					●	●													
	3QP-TNGA 336-SR	3QP-TNGA160424SR		0.106	3		○							●												
Medium cutting	3QP-TNGA 331-H	3QP-TNGA160404-H	0.016	0.087	3						○	●	●			●						●	●			
	3QP-TNGA 331-HC	3QP-TNGA160404HC		0.087	3						○			●												
	6QS-TNGA 331-H	6QS-TNGA160404-H		0.075	6						○	●	●													
	6QS-TNGA 331-HC	6QS-TNGA160404HC		0.075	6						○			●												
	6QP-TNGA 331-H	6QP-TNGA160404-H		0.087	6						○								●							
	3QP-TNGA 332-H	3QP-TNGA160408-H	0.031	0.075	3						○	●	●			●						●	●			
	3QP-TNGA 332-HC	3QP-TNGA160408HC		0.075	3						○			●												
	6QS-TNGA 332-H	6QS-TNGA160408-H		0.063	6						○	●	●													
	6QS-TNGA 332-HC	6QS-TNGA160408HC		0.063	6						○			●												
	6QP-TNGA 332-H	6QP-TNGA160408-H		0.075	6						○								●							
	3QP-TNGA 333-H	3QP-TNGA160412-H	0.047	0.094	3						○	●	●			●						●	●			
	3QP-TNGA 333-HC	3QP-TNGA160412HC		0.094	3						○			●												
	6QS-TNGA 333-H	6QS-TNGA160412-H		0.071	6						○	●	●													
	6QS-TNGA 333-HC	6QS-TNGA160412HC		0.071	6						○			●												
	6QP-TNGA 333-H	6QP-TNGA160412-H		0.094	6						○								●							
	3QP-TNGA 334-HC	3QP-TNGA160416HC	0.063	0.130	3						○			●												
	3QP-TNGA 335-HC	3QP-TNGA160420HC	0.079	0.118	3						○			●												
	3QP-TNGA 336-HC	3QP-TNGA160424HC	0.094	0.106	3						○			●												

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

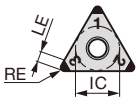
● : Line up

Reference pages: SN: External toolholder → C076 -, Internal toolholder → D054 -
TN: External toolholder → C088 -, Internal toolholder → D063 -
J-Series toolholder → G056 -, TungCap → K013 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN with chipbreaker



IC : 0.375"
D1 : 0.150"
S : 0.187"

Triangular with hole

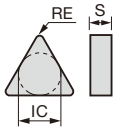
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA40
Precision finishing	3QP-TNGM 331 HP	3QP-TNGM160404-HP	0.016	0.087	3		○					●	●	●	●		
	6QS-TNGG 331 HP	6QS-TNGG160404-HP		0.075	6		○					●	●	●			
	3QP-TNGM 331 HS	3QP-TNGM160404-HS		0.087	3		○					●	●	●			
	6QS-TNGG 331 HS	6QS-TNGG160404-HS		0.075	6		○					●	●	●			
	3QP-TNGM 332 HP	3QP-TNGM160408-HP	0.031	0.075	3		○					●	●	●	●		
	6QS-TNGG 332 HP	6QS-TNGG160408-HP		0.063	6		○					●	●	●			
	3QP-TNGM 332 HS	3QP-TNGM160408-HS		0.075	3		○					●	●	●			
	6QS-TNGG 332 HS	6QS-TNGG160408-HS		0.063	6		○					●	●	●			
	3QP-TNGM 333 HP	3QP-TNGM160412-HP	0.047	0.094	3		○					●	●	●			
	6QS-TNGG 333 HP	6QS-TNGG160412-HP		0.071	6		○					●	●	●			
	3QP-TNGM 333 HS	3QP-TNGM160412-HS		0.094	3		○					●	●	●			
	6QS-TNGG 333 HS	6QS-TNGG160412-HS		0.071	6		○					●	●	●			
Medium cutting	3QP-TNGM 332 HF	3QP-TNGM160408-HF	0.031	0.075	3		○						●			●	
	6QS-TNGG 332 HF	6QS-TNGG160408-HF		0.083	4		○						●				
	6QP-TNGG 332 HF	6QP-TNGG160408-HF		0.075	6		○										●
	3QP-TNGM 332 HM	3QP-TNGM160408-HM		0.075	3		○									●	
	6QS-TNGG 332 HM	6QS-TNGG160408-HM		0.063	6		○						●				
	6QP-TNGG 332 HM	6QP-TNGG160408-HM		0.075	6		○										●
	3QP-TNGM 333 HF	3QP-TNGM160412-HF	0.047	0.094	3		○						●			●	
	6QS-TNGG 333 HF	6QS-TNGG160412-HF		0.098	4		○						●				
	6QP-TNGG 333 HF	6QP-TNGG160412-HF		0.094	6		○										●
	3QP-TNGM 333 HM	3QP-TNGM160412-HM		0.094	3		○									●	
	6QP-TNGG 333 HM	6QP-TNGG160412-HM		0.094	6		○										●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TN Solid insert



IC : 0.250"
S : 0.125"

Triangular without hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-TNGN 222	S-TNGN110308	0.031		6		○					●
	S-TNGN 223	S-TNGN110312	0.047		6		○					●

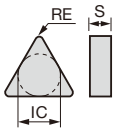
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: TNGG, TNGM: External toolholder → C088 -, Internal toolholder → D063 -
J-Series toolholder → G056 -, TungCap → K013 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN Solid insert



IC : 0.375"
S : 0.187"

Triangular without hole

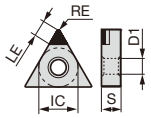
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXC90
Medium cutting	S-TNGN 332	S-TNGN160408	0.031		6		○					●
	S-TNGN 333	S-TNGN160412	0.047		6		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TN



IC : 0.375"
D1 : 0.150"
S : 0.187"

Triangular with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TNGA 330.5 QBN	TNGA160402-QBN	0.008	0.173	1		○					●
	TNGA 331 QBN	TNGA160404-QBN	0.016	0.165	1		○					●
	TNGA 332 QBN	TNGA160408-QBN	0.031	0.157	1		○					●
	TNGA 333 QBN	TNGA160412-QBN	0.047	0.146	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: TNGA: External toolholder → C088 -, Internal toolholder → D063 -
J-Series toolholder → G056 -, TungCap → K013 -

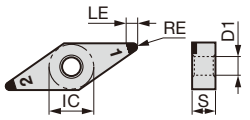
CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



35° Rhombic with hole



IC : 0.375"
D1 : 0.150"
S : 0.187"

		BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX470	BX480	BX930
K	Cast iron														●◐	●
S	Superalloy														●◐	
H	Hard material	●	●◐	✣	●	●◐	✣	●	●◐	●	●	●◐	✣			
	Sintered metal													●◐	◐✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping
Precision finishing	2QP-VNGA 330.5-LF	2QP-VNGA160402-LF	0.008	0.138	2			○			
	4QS-VNGA 330.5-LF	4QS-VNGA160402-LF		0.118	4			○			
	2QP-VNGA 330.5-L	2QP-VNGA160402-L		0.138	2				○		
	2QP-VNGA 331-LF	2QP-VNGA160404-LF	0.016	0.122	2			○			
	4QS-VNGA 331-LF	4QS-VNGA160404-LF		0.102	4			○			
	2QP-VNGA 331-L	2QP-VNGA160404-L		0.122	2				○		
	2QP-VNGA 332-LF	2QP-VNGA160408-LF	0.031	0.087	2			○			
	4QS-VNGA 332-LF	4QS-VNGA160408-LF		0.067	4			○			
	2QP-VNGA 332-L	2QP-VNGA160408-L		0.087	2				○		
	2QP-VNGA 333-LF	2QP-VNGA160412-LF	0.047	0.118	2			○			
	4QS-VNGA 333-LF	4QS-VNGA160412-LF		0.067	4			○			
	2QP-VNGA 333-L	2QP-VNGA160412-L		0.118	2				○		
Finishing	2QP-VNGA 330.5	2QP-VNGA160402	0.008	0.138	2		○				
	4QS-VNGA 330.5	4QS-VNGA160402		0.118	4		○				
	2QP-VNGA 330.5-LC	2QP-VNGA160402-LC		0.138	2					○	
	4QS-VNGA 330.5-LC	4QS-VNGA160402-LC		0.118	4					○	
	2QP-VNGA 331	2QP-VNGA160404	0.016	0.122	2		○				
	2QP-VNGA 331-SR	2QP-VNGA160404SR		0.122	2		○				
	4QS-VNGA 331	4QS-VNGA160404		0.102	4		○				
	4QS-VNGA 331-SR	4QS-VNGA160404SR		0.102	4		○				
	4QP-VNGA 331	4QP-VNGA160404		0.122	4		○				
	2QP-VNGA 331-LC	2QP-VNGA160404-LC		0.122	2					○	
	4QS-VNGA 331-LC	4QS-VNGA160404-LC		0.102	4					○	
	2QP-VNGA 332	2QP-VNGA160408	0.031	0.087	2		○				
	2QP-VNGA 332-SR	2QP-VNGA160408SR		0.087	2		○				
	4QS-VNGA 332	4QS-VNGA160408		0.067	4		○				
	4QS-VNGA 332-SR	4QS-VNGA160408SR		0.067	4		○				
	4QP-VNGA 332	4QP-VNGA160408		0.087	4		○				
	2QP-VNGA 332-LC	2QP-VNGA160408-LC		0.087	2					○	
	4QS-VNGA 332-LC	4QS-VNGA160408-LC		0.067	4					○	
	2QP-VNGA 333	2QP-VNGA160412	0.047	0.118	2		○				
	4QS-VNGA 333	4QS-VNGA160412		0.067	4		○				
	4QP-VNGA 333	4QP-VNGA160412		0.118	4		○				
	2QP-VNGA 333-LC	2QP-VNGA160412-LC		0.118	2					○	
	4QS-VNGA 333-LC	4QS-VNGA160412-LC		0.067	4					○	
Medium cutting	2QP-VNGA 331-H	2QP-VNGA160404-H	0.016	0.122	2						○
	2QP-VNGA 331-HC	2QP-VNGA160404HC		0.122	2						○
	4QS-VNGA 331-H	4QS-VNGA160404-H		0.102	4						○
	4QS-VNGA 331-HC	4QS-VNGA160404HC		0.102	4						○
	4QP-VNGA 331-H	4QP-VNGA160404-H		0.122	4						○
	2QP-VNGA 332-H	2QP-VNGA160408-H	0.031	0.087	2						○
	2QP-VNGA 332-HC	2QP-VNGA160408HC		0.087	2						○
	4QS-VNGA 332-H	4QS-VNGA160408-H		0.067	4						○
	4QS-VNGA 332-HC	4QS-VNGA160408HC		0.067	4						○
	4QP-VNGA 332-H	4QP-VNGA160408-H		0.087	4						○
	2QP-VNGA 333-H	2QP-VNGA160412-H	0.047	0.118	2						○
	4QS-VNGA 333-H	4QS-VNGA160412-H		0.067	4						○

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

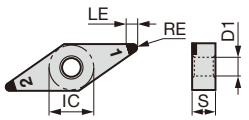
Reference pages: External toolholder → C103 - Internal toolholder → D077 -
TungCap → K014 -

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN with chipbreaker



35° Rhombic with hole



IC : 0.375"
D1 : 0.150"
S : 0.187"

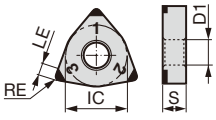
K	Cast iron	
S	Superalloy	
H	Hard material	● ●ᑕ ● ●ᑕ ●ᑕ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA40
Precision finishing	2QP-VNGM 331 HP	2QP-VNGM160404-HP	0.016	0.122	2		○					●	●			
	4QS-VNGG 331 HP	4QS-VNGG160404-HP		0.102	4		○					●	●			
	2QP-VNGM 331 HS	2QP-VNGM160404-HS		0.122	2		○					●	●			
	4QS-VNGG 331 HS	4QS-VNGG160404-HS		0.102	4		○					●	●			
	2QP-VNGM 332 HP	2QP-VNGM160408-HP	0.031	0.087	2		○					●	●	●		
	4QS-VNGG 332 HP	4QS-VNGG160408-HP		0.067	4		○					●	●			
	2QP-VNGM 332 HS	2QP-VNGM160408-HS		0.087	2		○					●	●			
	4QS-VNGG 332 HS	4QS-VNGG160408-HS		0.067	4		○					●	●			
Medium cutting	2QP-VNGM 332 HF	2QP-VNGM160408-HF	0.031	0.087	2		○								●	
	4QP-VNGG 332 HF	4QP-VNGG160408-HF		0.087	4		○									●
	2QP-VNGM 332 HM	2QP-VNGM160408-HM		0.087	2		○								●	
	4QS-VNGG 332 HM	4QS-VNGG160408-HM		0.067	4		○						●			
	4QP-VNGG 332 HM	4QP-VNGG160408-HM		0.087	4		○									●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

WN



IC : 0.500"
D1 : 0.203"
S : 0.187"

80° Trigon with hole



K	Cast iron	●ᑕ ●
S	Superalloy	●ᑕ
H	Hard material	● ●ᑕ ● ●ᑕ ✣ ● ●ᑕ ● ● ●ᑕ ✣
	Sintered metal	ᑕ✣

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXC50	BXA30	BXA40	BX310	BX330	BX360	BX380	BX480	BX930
Precision finishing	3QP-WNGA 432-LF	3QP-WNGA080408-LF	0.031	0.087	3			○				●	●											
	6QS-WNGA 432-LF	6QS-WNGA080408-LF		0.059	6			○				●	●											
	3QP-WNGA 432-L	3QP-WNGA080408-L		0.087	3				○			●	●											
	3QP-WNGA 432-FW	3QP-WNGA080408FW		0.087	3	○	○					●	●	●	●									
	6QS-WNGA 432-FW	6QS-WNGA080408FW		0.071	6	○	○					●	●											
Finishing	3QP-WNGA 431	3QP-WNGA080404	0.016	0.091	3		○					●	●											
	6QS-WNGA 431	6QS-WNGA080404		0.063	6		○					●	●											
	6QP-WNGA 431	6QP-WNGA080404		0.091	6		○									●								
	3QP-WNGA 432	3QP-WNGA080408	0.031	0.087	3		○					●	●	●	●				●	●	●	●	●	●
	6QS-WNGA 432	6QS-WNGA080408		0.059	6		○					●	●											
	6QP-WNGA 432	6QP-WNGA080408		0.087	6		○									●	●	●						
	3QP-WNGA 433	3QP-WNGA080412	0.047	0.094	3		○					●	●									●		
	6QS-WNGA 433	6QS-WNGA080412		0.067	6		○					●	●											
Medium cutting	3QP-WNGA 432-H	3QP-WNGA080408-H	0.031	0.087	3						○	●	●											
	6QS-WNGA 432-H	6QS-WNGA080408-H		0.059	6						○	●	●											

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

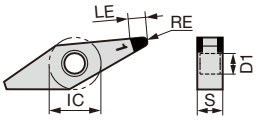
● : Line up

Reference pages: VN : External toolholder → C103 -, Internal toolholder → D077 -, TungCap → K014 -
WN: External toolholder → C121 -, Internal toolholder → D083 -, TungCap → K010

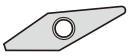
CBN Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

YN



IC : 0.375"
D1 : 0.150"
S : 0.187"



25° Rhombic with hole

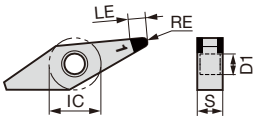
K	Cast iron	
S	Superalloy	
H	Hard material	●ⓒ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA20
Precision finishing	2QP-YNGA 331-LF	2QP-YNGA160404-LF	0.016	0.122	2			○				●
	2QP-YNGA 331-L	2QP-YNGA160404-L		0.122	2				○			●
	2QP-YNGA 332-LF	2QP-YNGA160408-LF	0.031	0.118	2			○				●
	2QP-YNGA 332-L	2QP-YNGA160408-L		0.118	2				○			●
Finishing	2QP-YNGA 330.5	2QP-YNGA160402	0.008	0.138	2		○					●
	2QP-YNGA 331	2QP-YNGA160404	0.016	0.122	2		○					●
	2QP-YNGA 331-LC	2QP-YNGA160404-LC		0.122	2					○		●
	2QP-YNGA 332	2QP-YNGA160408	0.031	0.118	2		○					●
	2QP-YNGA 332-LC	2QP-YNGA160408-LC		0.118	2					○		●

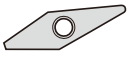
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

YN with chipbreaker



IC : 0.375"
D1 : 0.150"
S : 0.187"



25° Rhombic with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●ⓒ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA20
Precision finishing	2QP-YNGG 331 HP	2QP-YNGG160404-HP	0.016	0.122	2		○					●
	2QP-YNGG 332 HP	2QP-YNGG160408-HP	0.031	0.118	2		○					●

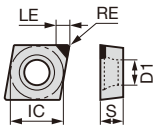
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C103 - Internal toolholder → D077 -
TungCap → K014 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC



IC : 0.141"
D1 : 0.075"
S : 0.055"



80°Rhombic with hole, Positive 7°

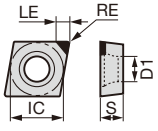
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX310	BX470
Precision finishing	**1QP-CCGW 4.51.80.5**	**1QP-CCGW03X102**	0.008	0.055	1		○					●	●
	1QP-CCGW 4.51.8**1**	1QP-CCGW03X1**04**	0.016	0.051	1		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CC



IC : 0.172"
D1 : 0.091"
S : 0.070"



80°Rhombic with hole, Positive 7°

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX310	BX470
Precision finishing	**1QP-CCGW 5.52.20.5**	**1QP-CCGW04T102**	0.008	0.075	1		○					●	●
	1QP-CCGW 5.52.2**1**	1QP-CCGW04T1**04**	0.016	0.071	1		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

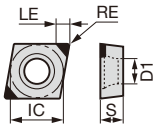
● : Line up

Reference pages: Internal toolholder → D018 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



IC : 0.250"
D1 : 0.109"
S : 0.094"



80°Rhombic with hole, Positive 7°

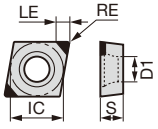
		BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX930
K	Cast iron											◐	●	
S	Superalloy											◐		
H	Hard material	●	◐	✣	●	◐	●	◐	●	●	◐			
	Sintered metal											◐	✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX930
Precision finishing	2QP-CCGW 21.50.5-LF	2QP-CCGW060202-LF	0.008	0.091	2			○				●	●											
	2QP-CCGW 21.50.5-L	2QP-CCGW060202-L		0.091	2				○			●	●											
	2QP-CCGW 21.51-LF	2QP-CCGW060204-LF	0.016	0.091	2			○				●	●											
	2QP-CCGW 21.51-L	2QP-CCGW060204-L		0.091	2				○			●	●											
	2QP-CCGW 21.52-LF	2QP-CCGW060208-LF	0.031	0.087	2			○				●	●											
	2QP-CCGW 21.52-L	2QP-CCGW060208-L		0.087	2				○			●	●											
Finishing	2QP-CCGW 21.50.5	2QP-CCGW060202	0.008	0.091	2		○					●	●		●	●	●	●						
	2QP-CCMW 21.50.5	2QP-CCMW060202		0.091	2		○												●	●	●			
	2QP-CCGW 21.50.5-LC	2QP-CCGW060202-LC		0.091	2					○		●	●											
	2QP-CCGW 21.51	2QP-CCGW060204	0.016	0.091	2		○					●	●		●	●	●	●				●	●	
	2QP-CCGW 21.51-SR	2QP-CCGW060204SR		0.091	2		○							●										
	2QP-CCMW 21.51	2QP-CCMW060204		0.091	2		○												●	●	●			●
	Q-CCMW 21.51	Q-CCMW060204		0.098	1		○													●				
	2QP-CCGW 21.51-LC	2QP-CCGW060204-LC		0.091	2					○		●	●											
	2QP-CCGW 21.52	2QP-CCGW060208	0.031	0.087	2		○					●	●											
	2QP-CCGW 21.52-SR	2QP-CCGW060208SR		0.087	2		○							●										
	2QP-CCMW 21.52	2QP-CCMW060208		0.087	2		○													●				
	2QP-CCGW 21.52-LC	2QP-CCGW060208-LC		0.087	2					○		●	●											

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CC with chipbreaker



IC : 0.250"
D1 : 0.109"
S : 0.094"



80°Rhombic with hole, Positive 7°

		BXA10	BXA20	BR35F	BXM10
K	Cast iron				
S	Superalloy				
H	Hard material	●	◐	✣	●
	Sintered metal				

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10
Precision finishing	2QP-CCGT 21.51 HP	2QP-CCGT060204-HP	0.016	0.091	2		○					●	●	●	●
	2QP-CCGT 21.51 HS	2QP-CCGT060204-HS		0.087	2		○					●	●	●	

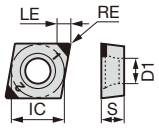
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



IC : 0.375"
D1 : 0.173"
S : 0.156"



80°Rhombic with hole, Positive 7°

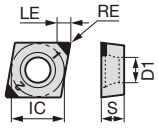
		BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX930
K	Cast iron											●ⓒ	●	
S	Superalloy											●ⓒ		
H	Hard material	●	●ⓒ	✣	●	●ⓒ	●	●ⓒ	●	●	●ⓒ			
	Sintered metal											●ⓒ	●✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping
Precision finishing	2QP-CCGW 32.50.5-LF	2QP-CCGW09T302-LF	0.008	0.091	2			○			
	2QP-CCGW 32.50.5-L	2QP-CCGW09T302-L		0.091	2				○		
	2QP-CCGW 32.51-LF	2QP-CCGW09T304-LF	0.016	0.091	2			○			
	2QP-CCGW 32.51-L	2QP-CCGW09T304-L		0.091	2				○		
	2QP-CCGW 32.51 FW	2QP-CCGW09T304FW		0.091	2	○	○				
	2QP-CCGW 32.52-LF	2QP-CCGW09T308-LF	0.031	0.087	2			○			
	2QP-CCGW 32.52-L	2QP-CCGW09T308-L		0.087	2				○		
	2QP-CCGW 32.52 FW	2QP-CCGW09T308FW		0.087	2	○	○				
Finishing	2QP-CCGW 32.50.5	2QP-CCGW09T302	0.008	0.091	2		○				
	2QP-CCGW 32.50.5-LC	2QP-CCGW09T302-LC		0.091	2					○	
	2QP-CCGW 32.51	2QP-CCGW09T304	0.016	0.091	2		○				
	2QP-CCGW 32.51-SR	2QP-CCGW09T304SR		0.091	2		○				
	2QP-CCMW 32.51	2QP-CCMW09T304		0.091	2		○				
	Q-CCMW 32.51	Q-CCMW09T304		0.098	1		○				
	2QP-CCGW 32.51-LC	2QP-CCGW09T304-LC		0.091	2					○	
	2QP-CCGW 32.52	2QP-CCGW09T308	0.031	0.087	2		○				
	2QP-CCGW 32.52-SR	2QP-CCGW09T308SR		0.087	2		○				
	2QP-CCMW 32.52	2QP-CCMW09T308		0.087	2		○				
	2QP-CCGW 32.52-LC	2QP-CCGW09T308-LC		0.087	2					○	
Medium cutting	2QP-CCGW 32.50.5-H	2QP-CCGW09T302-H	0.008	0.091	2						○
	2QP-CCGW 32.51-H	2QP-CCGW09T304-H	0.016	0.091	2						○
	2QP-CCGW 32.51-HC	2QP-CCGW09T304HC		0.091	2						○
	2QP-CCGW 32.52-H	2QP-CCGW09T308-H	0.031	0.087	2						○
	2QP-CCGW 32.52-HC	2QP-CCGW09T308HC		0.087	2						○

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CC with chipbreaker



IC : 0.375"
D1 : 0.173"
S : 0.156"



80°Rhombic with hole, Positive 7°

		BXA10	BXA20	BR35F	BXM10
K	Cast iron				
S	Superalloy				
H	Hard material	●	●ⓒ	✣	●
	Sintered metal				

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping
Precision finishing	2QP-CCGT 32.51 HP	2QP-CCGT09T304-HP	0.016	0.091	2		○				
	2QP-CCGT 32.51 HS	2QP-CCGT09T304-HS		0.087	2		○				
	2QP-CCGT 32.51 FW-HP	2QP-CCGT09T304FW-HP		0.087	2	○	○				
	2QP-CCGT 32.51 FW-HS	2QP-CCGT09T304FW-HS		0.087	2	○	○				
	2QP-CCGT 32.52 HP	2QP-CCGT09T308-HP	0.031	0.087	2		○				
	2QP-CCGT 32.52 HS	2QP-CCGT09T308-HS		0.087	2		○				
	2QP-CCGT 32.52 FW-HP	2QP-CCGT09T308FW-HP		0.087	2	○	○				
	2QP-CCGT 32.52 FW-HS	2QP-CCGT09T308FW-HS		0.087	2	○	○				

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

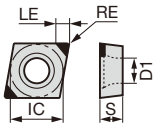
● : Line up

Reference pages: External toolholder → C034 - Internal toolholder → D018 -
J-Series toolholder → G030 - TungCap → K011 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP



IC : 0.313"
D1 : 0.134"
S : 0.094"



80° Rhombic with hole, Positive 11°

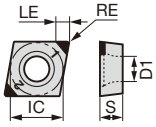
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20
Finishing	2QP-CPGW 2.51.50.5	2QP-CPGW080202	0.008	0.091	2		○					●	●			
Finishing	2QP-CPGW 2.51.51	2QP-CPGW080204	0.016	0.091	2		○					●	●			
Finishing	2QP-CPGW 2.51.52	2QP-CPGW080208	0.031	0.087	2		○					●	●			

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CP



IC : 0.375"
D1 : 0.173"
S : 0.125"



80° Rhombic with hole, Positive 11°

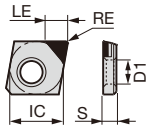
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	2QP-CPGW 320.5	2QP-CPGW090302	0.008	0.091	2		○					●	●
Finishing	2QP-CPGW 321	2QP-CPGW090304	0.016	0.091	2		○					●	●
Finishing	2QP-CPGW 322	2QP-CPGW090308	0.031	0.087	2		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CP



IC : 0.375"
D1 : 0.157"
S : 0.094"



80° Rhombic with hole, Positive 11°

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	CPGA 31.51 QBN	CPGA090204-QBN	0.016	0.157	1		○					●
Finishing	CPGA 31.52 QBN	CPGA090208-QBN	0.031	0.150	1		○					●

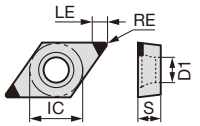
Tungaloy's standard hole specifi cation (ISO non-compliant)
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D022 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC



IC : 0.250"
D1 : 0.109"
S : 0.094"



55° Rhombic with hole, Positive 7°

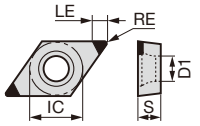
		BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX930
K	Cast iron											◐	●	
S	Superalloy											◐		
H	Hard material	●	◐	✣	●	◐	●	◐	●	●	◐			
	Sintered metal											◐	✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX930
Finishing	2QP-DCGW 21.50.5-LF	2QP-DCGW070202-LF	0.008	0.106	2			○				●	●											
	2QP-DCGW 21.50.5-L	2QP-DCGW070202-L		0.106	2				○			●	●											
	2QP-DCGW 21.51-LF	2QP-DCGW070204-LF	0.016	0.098	2			○				●	●											
	2QP-DCGW 21.51-L	2QP-DCGW070204-L		0.098	2				○			●	●											
	2QP-DCGW 21.52-LF	2QP-DCGW070208-LF	0.031	0.083	2			○				●	●											
	2QP-DCGW 21.52-L	2QP-DCGW070208-L		0.083	2				○			●	●											
Medium cutting	2QP-DCGW 21.50.5	2QP-DCGW070202	0.008	0.106	2		○					●	●		●	●	●	●						
	2QP-DCGW 21.50.5-SR	2QP-DCGW070202SR		0.106	2		○							●										
	2QP-DCMW 21.50.5	2QP-DCMW070202		0.106	2		○												●	●	●			
	2QP-DCGW 21.50.5-LC	2QP-DCGW070202-LC		0.106	2					○		●	●											
	2QP-DCGW 21.51	2QP-DCGW070204	0.016	0.098	2		○					●	●		●	●	●	●				●	●	
	2QP-DCGW 21.51-SR	2QP-DCGW070204SR		0.098	2		○							●										
	2QP-DCMW 21.51	2QP-DCMW070204		0.098	2		○												●	●	●			●
	Q-DCMW 21.51	Q-DCMW070204		0.083	1		○													●				
	2QP-DCGW 21.51-LC	2QP-DCGW070204-LC		0.098	2					○		●	●											
	2QP-DCGW 21.52	2QP-DCGW070208	0.031	0.083	2		○					●	●									●		
	2QP-DCGW 21.52-SR	2QP-DCGW070208SR		0.083	2		○							●										
	2QP-DCGW 21.52-LC	2QP-DCGW070208-LC		0.083	2					○		●	●											

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

DC with chipbreaker



IC : 0.250"
D1 : 0.109"
S : 0.094"



55° Rhombic with hole, Positive 7°

		BXA10	BXA20	BR35F	BXM10
K	Cast iron				
S	Superalloy				
H	Hard material	●	◐	✣	●
	Sintered metal				

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10
Precision finishing	2QP-DCGT 21.51 HP	2QP-DCGT070204-HP	0.016	0.098	2		○					●	●	●	●
	2QP-DCGT 21.51 HS	2QP-DCGT070204-HS		0.098	2		○					●	●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

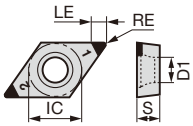
● : Line up

Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC



IC : 0.375"
D1 : 0.173"
S : 0.156"



55° Rhombic with hole, Positive 7°

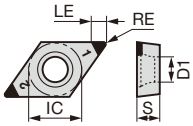
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX815	BX930
Precision finishing	2QP-DCGW 32.50.5 F	2QP-DCGW11T302F	0.008	0.106	2			○														●			
	2QP-DCGW 32.50.5-LF	2QP-DCGW11T302-LF		0.106	2			○				●	●												
	2QP-DCGW 32.50.5-L	2QP-DCGW11T302-L		0.106	2				○			●	●												
	2QP-DCGW 32.51 F	2QP-DCGW11T304F	0.016	0.098	2			○														●			
	2QP-DCGW 32.51-E	2QP-DCGW11T304-E		0.098	2		○																	●	
	2QP-DCGW 32.51-LT	2QP-DCGW11T304-LT		0.098	2						○													●	
	2QP-DCGW 32.51-LF	2QP-DCGW11T304-LF		0.098	2			○				●	●												
	2QP-DCGW 32.51-L	2QP-DCGW11T304-L		0.098	2				○			●	●												
	2QP-DCGW 32.52-LF	2QP-DCGW11T308-LF	0.031	0.083	2			○				●	●												
	2QP-DCGW 32.52-L	2QP-DCGW11T308-L		0.083	2				○			●	●												
Finishing	2QP-DCGW 32.50.2	2QP-DCGW11T301	0.004	0.109	2		○					●	●												
	2QP-DCGW 32.50.5	2QP-DCGW11T302	0.008	0.106	2		○					●	●		●	●	●	●							
	2QP-DCGW 32.50.5-SR	2QP-DCGW11T302SR		0.106	2		○							●											
	2QP-DCMW 32.50.5	2QP-DCMW11T302		0.106	2		○												●	●	●				
	2QP-DCGW 32.50.5-LC	2QP-DCGW11T302-LC		0.106	2					○		●	●												
	2QP-DCGW 32.51	2QP-DCGW11T304	0.016	0.098	2		○					●	●		●	●	●	●				●	●		
	2QP-DCGW 32.51-SR	2QP-DCGW11T304SR		0.098	2		○							●											
	2QP-DCMW 32.51	2QP-DCMW11T304		0.098	2		○												●	●	●			●	
	Q-DCMW 32.51	Q-DCMW11T304		0.083	1		○													●					
	2QP-DCGW 32.51-LC	2QP-DCGW11T304-LC		0.098	2					○		●	●												
	2QP-DCGW 32.52	2QP-DCGW11T308	0.031	0.083	2		○					●	●		●	●	●	●				●			
	2QP-DCGW 32.52-SR	2QP-DCGW11T308SR		0.083	2		○							●											
	2QP-DCMW 32.52	2QP-DCMW11T308		0.083	2		○												●	●	●				
	2QP-DCGW 32.52-LC	2QP-DCGW11T308-LC		0.083	2					○		●	●												
Medium cutting	2QP-DCGW 32.50.5-H	2QP-DCGW11T302-H	0.008	0.106	2						○		●												
	2QP-DCGW 32.51-H	2QP-DCGW11T304-H	0.016	0.098	2						○		●												
	2QP-DCGW 32.51-HC	2QP-DCGW11T304HC		0.098	2						○			●											
	2QP-DCGW 32.52-H	2QP-DCGW11T308-H	0.031	0.083	2						○		●												
	2QP-DCGW 32.52-HC	2QP-DCGW11T308HC		0.083	2						○			●											

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

DC with chipbreaker



IC : 0.375"
D1 : 0.173"
S : 0.156"



55° Rhombic with hole, Positive 7°

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10
Precision finishing	2QP-DCGT 32.51 HP	2QP-DCGT11T304-HP	0.016	0.098	2		○					●	●	●	●
	2QP-DCGT 32.51 HS	2QP-DCGT11T304-HS		0.098	2		○					●	●	●	
	2QP-DCGT 32.52 HP	2QP-DCGT11T308-HP	0.031	0.083	2		○					●	●	●	●
	2QP-DCGT 32.52 HS	2QP-DCGT11T308-HS		0.083	2		○					●	●	●	

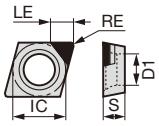
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: External toolholder → C052 - Internal toolholder → D032 -
J-Series toolholder → G037 - TungCap → K015 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

EP



IC : 0.141"
D1 : 0.075"
S : 0.055"



75° Rhombic, Positive 11° with hole

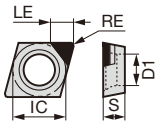
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX310	BX470
Finishing	1QP-EPGW 4.51.80.5	1QP-EPGW03X102	0.008	0.055	1		○					●	●
Finishing	1QP-EPGW 4.51.81	1QP-EPGW03X104	0.016	0.051	1		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

EP



IC : 0.156"
D1 : 0.091"
S : 0.063"



75° Rhombic, Positive 11° with hole

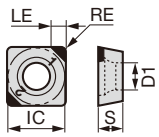
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX310	BX470
Finishing	1QP-EPGW 520.5	1QP-EPGW040102	0.008	0.067	1		○					●	●
Finishing	1QP-EPGW 521	1QP-EPGW040104	0.016	0.063	1		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SP



IC : 0.375"
D1 : 0.173"
S : 0.156"



Square Positive 11° with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX910
Finishing	2QP-SPGW 32.52	2QP-SPGW09T308	0.031	0.094	2		○					●
Finishing	2QP-SPGW 32.53	2QP-SPGW09T312	0.047	0.094	2		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

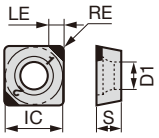
● : Line up

Reference pages: EP: Internal toolholder → D048 -
SP: Internal toolholder → D052

CBN Insert POSITIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP



IC : 0.500"
D1 : 0.217"
S : 0.187"

Square Positive 11° with hole

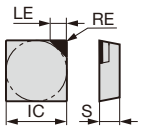
K	Cast iron	●
S	Superalloy	
H	Hard material	
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX910
Finishing	2QP-SPGW 432	2QP-SPGW120408	0.031	0.094	2		○					●
Finishing	2QP-SPGW 433	2QP-SPGW120412	0.047	0.094	2		○					●
Finishing	2QP-SPGW 434	2QP-SPGW120416	0.063	0.094	2		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SP



IC : 0.500"
S : 0.125"

Square Positive 11° without hole

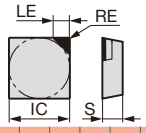
K	Cast iron	● ●
S	Superalloy	
H	Hard material	● ●ⓒ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX330	BX360	BX910	BX930
Finishing	2QP-SPMN 321	2QP-SPMN090304	0.016	0.094	2		○					●	●		●
Finishing	Q-SPGN 321	Q-SPGN090304		0.109	1		○					●			
Finishing	2QP-SPGN 322	2QP-SPGN090308	0.031	0.094	2		○							●	
Finishing	2QP-SPMN 322	2QP-SPMN090308		0.094	2		○					●	●		●
Finishing	Q-SPGN 322	Q-SPGN090308		0.109	1		○					●			
Finishing	2QP-SPGN 323	2QP-SPGN090312	0.047	0.094	2		○							●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

SP



IC : 0.375"
S : 0.125"

Square Positive 11° without hole

K	Cast iron	
S	Superalloy	
H	Hard material	●ⓒ
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	SPGN 321 QBN	SPGN090304-QBN	0.016	0.161	1		○					●
Finishing	SPGN 322 QBN	SPGN090308-QBN	0.031	0.161	1		○					●
Finishing	SPGN 323 QBN	SPGN090312-QBN	0.047	0.161	1		○					●

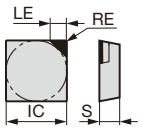
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D052 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP



IC : 0.500"
S : 0.125"

Square Positive 11° without hole

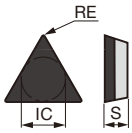
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	SPGN 422 QBN	SPGN120308-QBN	0.016	0.161	1		○					●
Finishing	SPGN 423 QBN	SPGN120312-QBN	0.031	0.161	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TB



IC : 0.156"
S : 0.063"

Triangular Positive 5° without hole

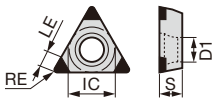
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TBGN 521 QBN	TBGN060104-15-QBN	0.016	-	3		○					●
Finishing	TBGN 522 QBN	TBGN060108-15-QBN	0.031	-	3		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TC



IC : 0.219"
D1 : 0.098"
S : 0.094"

Triangular Positive 7° with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	3QP-TCGW 730.5	3QP-TCGW090202	0.008	0.091	3		○					●	●
Finishing	3QP-TCGW 731	3QP-TCGW090204	0.016	0.087	3		○					●	●
Finishing	3QP-TCGW 732	3QP-TCGW090208	0.031	0.075	3		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: SP: Internal toolholder → D053
TC: External toolholder → C098 -, Internal toolholder → D056
J-Series toolholder → G054 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC



IC : 0.250"
D1 : 0.109"
S : 0.094"

Triangular Positive 7° with hole

K	Cast iron	
S	Superalloy	
H	Hard material	● ●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	3QP-TCGW 21.50.5	3QP-TCGW110202	0.008	0.091	3		○					●	●
	3QP-TCGW 21.51	3QP-TCGW110204	0.016	0.087	3		○					●	●
	3QP-TCGW 21.52	3QP-TCGW110208	0.031	0.075	3		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TC



IC : 0.375"
D1 : 0.173"
S : 0.156"

Triangular Positive 7° with hole

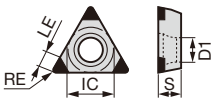
K	Cast iron	
S	Superalloy	
H	Hard material	● ●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	3QP-TCGW 32.50.5	3QP-TCGW16T302	0.008	0.091	3		○					●	●
	3QP-TCGW 32.51	3QP-TCGW16T304	0.016	0.087	3		○					●	●
	3QP-TCGW 32.52	3QP-TCGW16T308	0.031	0.075	3		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



IC : 0.187"
D1 : 0.091"
S : 0.094"

Triangular Positive 11° with hole

K	Cast iron	●
S	Superalloy	
H	Hard material	● ●◐ ● ●◐ ● ●◐ ● ● ●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
Finishing	3QP-TPGW 630.5	3QP-TPGW080202	0.008	0.091	3		○					●	●								
	3QP-TPGW 631	3QP-TPGW080204		0.087	3		○					●	●	●	●	●	●				
	3QP-TPMW 631	3QP-TPMW080204	0.016	0.087	3		○											●	●	●	●
	Q-TPMW 631	Q-TPMW080204		0.087	1		○												●		
	3QP-TPGW 632	3QP-TPGW080208	0.031	0.075	3		○					●	●								

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: TC: External toolholder → C098 -, Internal toolholder → D056
J-Series toolholder → G054 -
TP: Internal toolholder → D057 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.219"
D1 : 0.098"
S : 0.094"

		BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
K	Cast iron									●	
S	Superalloy										
H	Hard material	●	●◐	●	●◐	●	●◐	●	●	●◐	
	Sintered metal										

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
Finishing	3QP-TPGW 730.5	3QP-TPGW090202	0.008	0.091	3		○					●	●		●	●	●				
	3QP-TPMW 730.5	3QP-TPMW090202		0.091	3		○												●	●	●
	Q-TPMW 73Y	Q-TPMW090202		0.094	1		○												●		
	3QP-TPGW 731	3QP-TPGW090204	0.016	0.087	3		○					●	●	●	●	●	●				
	3QP-TPMW 731	3QP-TPMW090204		0.087	3		○											●	●	●	●
	Q-TPMW 731	Q-TPMW090204		0.091	1		○												●		
	3QP-TPGW 732	3QP-TPGW090208	0.031	0.075	3		○					●	●								

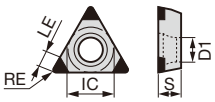
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.109"
S : 0.094"

		BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX930
K	Cast iron											●
S	Superalloy											
H	Hard material	●	●◐	●	●◐	●	●◐	●	●	●◐		
	Sintered metal										●◐	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX930
Finishing	3QP-TPGW 21.50.5	3QP-TPGW110202	0.008	0.091	3		○					●	●		●	●	●					
	3QP-TPMW 21.50.5	3QP-TPMW110202		0.091	3		○											●	●	●		●
	Q-TPMW 21.50.5	Q-TPMW110202		0.094	1		○												●			
	3QP-TPGW 21.51	3QP-TPGW110204	0.016	0.087	3		○					●	●	●	●	●	●				●	
	3QP-TPMW 21.51	3QP-TPMW110204		0.087	3		○											●	●	●		●
	Q-TPMW 21.51	Q-TPMW110204		0.087	1		○												●			
	3QP-TPGW 21.52	3QP-TPGW110208	0.031	0.075	3		○					●	●								●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D057 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.134"
S : 0.125"

		BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX910	BX930
K	Cast iron											●◐	●	●	
S	Superalloy											●◐			
H	Hard material	●	●◐	✣	●	●◐	●	●◐	●	●	●◐				
	Sintered metal											●◐	●✣		

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX910	BX930
Precision finishing	3QP-TPGW 220.5-LF	3QP-TPGW110302-LF	0.008	0.091	3			○				●	●												
	3QP-TPGW 220.5-L	3QP-TPGW110302-L		0.091	3				○			●	●												
	3QP-TPGW 221 F	3QP-TPGW110304F	0.016	0.087	3			○														●			
	3QP-TPGW 221-LF	3QP-TPGW110304-LF		0.087	3			○				●	●												
	3QP-TPGW 221-L	3QP-TPGW110304-L		0.087	3				○			●	●												
	3QP-TPGW 222 F	3QP-TPGW110308F	0.031	0.075	3			○														●			
	3QP-TPGW 222-LF	3QP-TPGW110308-LF		0.075	3			○				●	●												
	3QP-TPGW 222-L	3QP-TPGW110308-L		0.075	3				○			●	●												
Finishing	3QP-TPGW 220.5	3QP-TPGW110302	0.008	0.091	3		○					●	●			●	●	●					●		
	3QP-TPMW 220.5	3QP-TPMW110302		0.091	3		○												●	●	●				●
	3QP-TPGW 220.5-LC	3QP-TPGW110302-LC		0.091	3					○		●	●												
	3QP-TPGW 221	3QP-TPGW110304	0.016	0.087	3		○					●	●		●	●	●	●				●	●		
	3QP-TPGW 221-SR	3QP-TPGW110304SR		0.087	3		○							●											
	3QP-TPMW 221	3QP-TPMW110304		0.087	3		○												●	●	●				●
	Q-TPMW 221	Q-TPMW110304		0.087	1		○													●					
	3QP-TPGW 221-LC	3QP-TPGW110304-LC		0.087	3					○		●	●												
	3QP-TPGW 222	3QP-TPGW110308	0.031	0.075	3		○					●	●		●	●	●	●				●	●	●	
	3QP-TPGW 222-SR	3QP-TPGW110308SR		0.075	3		○							●											
	3QP-TPMW 222	3QP-TPMW110308		0.075	3		○												●	●	●				●
	Q-TPMW 222	Q-TPMW110308		0.075	1		○													●					
	3QP-TPGW 222-LC	3QP-TPGW110308-LC		0.075	3					○		●	●												
Medium cutting	3QP-TPGW 220.5-H	3QP-TPGW110302-H	0.008	0.091	3						○		●												
	3QP-TPGW 221-H	3QP-TPGW110304-H	0.016	0.087	3						○		●												
	3QP-TPGW 221-HC	3QP-TPGW110304HC		0.087	3						○			●											
	3QP-TPGW 222-H	3QP-TPGW110308-H	0.031	0.075	3						○		●												
	3QP-TPGW 222-HC	3QP-TPGW110308HC		0.075	3						○			●											

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP with chipbreaker



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.134"
S : 0.125"

		BXA10	BXA20	BR35F	BXM10
K	Cast iron				
S	Superalloy				
H	Hard material	●	●◐	✣	●
	Sintered metal				

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10
Precision finishing	3QP-TPGT 221 HP	3QP-TPGT110304-HP	0.016	0.087	3		○					●	●	●	●
	3QP-TPGT 221 HS	3QP-TPGT110304-HS		0.083	3		○					●	●	●	
	3QP-TPGT 222 HP	3QP-TPGT110308-HP	0.031	0.075	3		○					●	●	●	●
	3QP-TPGT 222 HS	3QP-TPGT110308-HS		0.071	3		○					●	●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.313"
D1 : 0.134"
S : 0.125"

		BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX480	BX930
K	Cast iron										●◐	●
S	Superalloy										●◐	
H	Hard material	●	●◐	●	●◐	●	●◐	●	●	●◐		
	Sintered metal										◐✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX480	BX930
Finishing	3QP-TPGW 2.520.5	3QP-TPGW130302	0.008	0.091	3		○					●	●		●	●	●				●	
	3QP-TPMW 2.520.5	3QP-TPMW130302		0.091	3		○											●	●	●		●
	Q-TPMW 2.520.5	Q-TPMW130302		0.094	1		○												●			
	3QP-TPGW 2.521	3QP-TPGW130304	0.016	0.087	3		○					●	●	●	●	●	●				●	
	3QP-TPMW 2.521	3QP-TPMW130304		0.087	3		○											●	●	●		●
	Q-TPMW 2.521	Q-TPMW130304		0.091	1		○												●			
	3QP-TPGW 2.522	3QP-TPGW130308	0.031	0.075	3		○					●	●									

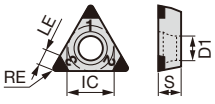
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.375"
D1 : 0.173"
S : 0.156"

		BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX480	BX930
K	Cast iron										●◐	●
S	Superalloy										●◐	
H	Hard material	●	●◐	●	●◐	●	●◐	●	●	●◐		
	Sintered metal										◐✣	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX480	BX930
Finishing	3QP-TPGW 32.50.5	3QP-TPGW16T302	0.008	0.091	3		○					●	●									
	3QP-TPGW 32.51	3QP-TPGW16T304	0.016	0.087	3		○					●	●	●	●	●	●				●	
	3QP-TPMW 32.51	3QP-TPMW16T304		0.087	3		○											●	●	●		●
	Q-TPMW 32.51	Q-TPMW16T304		0.091	1		○												●			
	3QP-TPGW 32.52	3QP-TPGW16T308	0.031	0.075	3		○					●	●	●	●	●	●					
	3QP-TPMW 32.52	3QP-TPMW16T308		0.075	3		○											●				

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D057 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.375"
D1 : 0.173"
S : 0.187"

		BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
K	Cast iron									●	
S	Superalloy										
H	Hard material	●	●ⓒ	●	●ⓒ	●	●ⓒ	●	●	●ⓒ	
	Sintered metal										

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
Finishing	3QP-TPGW 330.5	3QP-TPGW160402	0.008	0.091	3		○					●	●								
	3QP-TPGW 331	3QP-TPGW160404	0.016	0.087	3		○					●	●	●	●	●	●				
	3QP-TPMW 331	3QP-TPMW160404		0.087	3		○											●	●	●	●
	Q-TPMW 331	Q-TPMW160404		0.091	1		○												●		
	3QP-TPGW 332	3QP-TPGW160408	0.031	0.075	3		○					●	●		●	●	●				
	3QP-TPMW 332	3QP-TPMW160408		0.075	3		○											●	●	●	●
	Q-TPMW 332	Q-TPMW160408		0.079	1		○												●		
Medium cutting	3QP-TPGW 330.5-H	3QP-TPGW160402-H	0.008	0.091	3						○	●	●								
	3QP-TPGW 331-H	3QP-TPGW160404-H	0.016	0.087	3						○	●	●								
	3QP-TPGW 332-H	3QP-TPGW160408-H	0.031	0.075	3						○	●	●								

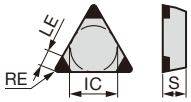
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



Triangular Positive 11° without hole



IC : 0.250"
S : 0.125"

		BX330	BX360	BX480	BX910	BX930
K	Cast iron			●ⓒ	●	●
S	Superalloy			●ⓒ		
H	Hard material	●	●ⓒ			
	Sintered metal			ⓒ✣		

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX330	BX360	BX480	BX910	BX930
Finishing	3QP-TPGN 220.5	3QP-TPGN110302	0.008	0.091	3		○							●		
	3QP-TPMN 220.5	3QP-TPMN110302		0.091	3		○					●	●			●
	3QP-TPGN 221	3QP-TPGN110304	0.016	0.087	3		○							●		
	3QP-TPMN 221	3QP-TPMN110304		0.087	3		○					●	●			●
	Q-TPGN 221	Q-TPGN110304		0.087	1		○					●				
	3QP-TPGN 222	3QP-TPGN110308	0.031	0.075	3		○							●	●	
	3QP-TPMN 222	3QP-TPMN110308		0.075	3		○					●	●			●
	Q-TPGN 222	Q-TPGN110308		0.087	1		○					●				
	3QP-TPGN 223	3QP-TPGN110312	0.047	0.094	3		○								●	

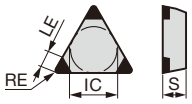
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D057 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 0.375"
S : 0.125"

Triangular Positive 11° without hole

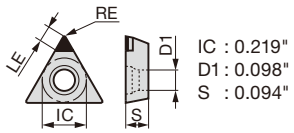
K	Cast iron	●◐ ●
S	Superalloy	●◐
H	Hard material	● ●◐
	Sintered metal	◐✣

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX330	BX360	BX480	BX930
Finishing	3QP-TPGN 321	3QP-TPGN160304	0.016	0.087	3		○							●	
Finishing	3QP-TPMN 321	3QP-TPMN160304		0.087	3		○					●	●		●
Finishing	Q-TPGN 321	Q-TPGN160304		0.091	1		○					●			
Finishing	3QP-TPGN 322	3QP-TPGN160308	0.031	0.075	3		○							●	
Finishing	3QP-TPMN 322	3QP-TPMN160308		0.075	3		○					●	●		●
Finishing	Q-TPGN 322	Q-TPGN160308		0.075	1		○					●			

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



IC : 0.219"
D1 : 0.098"
S : 0.094"

Triangular Positive 11° with hole

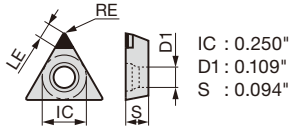
K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGW 73Y QBN	TPGW090202-QBN	0.008	0.130	1		○					●
Finishing	TPGW 731 QBN	TPGW090204-QBN	0.016	0.125	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



IC : 0.250"
D1 : 0.109"
S : 0.094"

Triangular Positive 11° with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGW 21.50.5 QBN	TPGW110202-QBN	0.008	0.154	1		○					●
Finishing	TPGW 21.51 QBN	TPGW110204-QBN	0.016	0.146	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Internal toolholder → D057 -

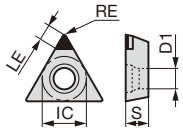
CBN Insert POSITIVE TYPE

● : Continuous cutting
ɕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.313"
D1 : 0.134"
S : 0.125"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGW 2.520.5 QBN	TPGW130302-QBN	0.008	0.154	1		○					●
Finishing	TPGW 2.521 QBN	TPGW130304-QBN	0.016	0.146	1		○					●

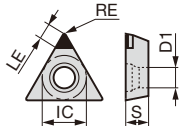
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.375"
D1 : 0.173"
S : 0.156"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGW 32.50.5 QBN	TPGW16T302-QBN	0.008	0.173	1		○					●
Finishing	TPGW 32.51 QBN	TPGW16T304-QBN	0.016	0.165	1		○					●
Finishing	TPGW 32.52 QBN	TPGW16T308-QBN	0.031	0.157	1		○					●

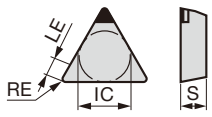
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



Triangular Positive 11° without hole



IC : 0.250"
S : 0.125"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGN 221 QBN	TPGN110304-QBN	0.016	0.146	1		○					●
Finishing	TPGN 222 QBN	TPGN110308-QBN	0.031	0.138	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

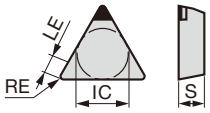
● : Line up

Reference pages: Internal toolholder → D057 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP

Triangular Positive 11° without hole



IC : 0.375"
S : 0.125"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

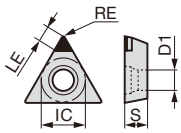
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGN 321 QBN	TPGN160304-QBN	0.016	0.165	1		○					●
Finishing	TPGN 322 QBN	TPGN160308-QBN	0.031	0.157	1		○					●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP

Triangular Positive 11° with hole



IC : 0.219"
D1 : 0.125"
S : 0.094"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

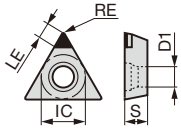
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGA 73Y QBN	TPGA090202-QBN	0.008	0.122	1		○					●
Finishing	TPGA 731 QBN	TPGA090204-QBN	0.016	0.114	1		○					●

Tungaloy's standard hole specifi cation (ISO non-compliant)
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP

Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.118"
S : 0.094"

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGA 21.50.5 QBN	TPGA110202-QBN	0.008	0.154	1		○					●
Finishing	TPGA 21.51 QBN	TPGA110204-QBN	0.016	0.146	1		○					●

Tungaloy's standard hole specifi cation (ISO non-compliant)
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

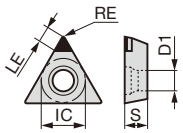
● : Line up

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 0.250"
D1 : 0.125"
S : 0.118"

Triangular Positive 11° with hole

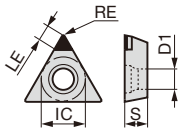
K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGA 220.5 QBN	TPGA110302-QBN	0.008	0.154	1		○					●
Finishing	TPGA 221 QBN	TPGA110304-QBN	0.016	0.146	1		○					●

Tungaloy's standard hole specifi cation (ISO non-compliant)
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

TP



IC : 0.375"
D1 : 0.157"
S : 0.125"

Triangular Positive 11° with hole

K	Cast iron	
S	Superalloy	
H	Hard material	●◐
	Sintered metal	

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BX360
Finishing	TPGA 320.5 QBN	TPGA160302-QBN	0.008	0.173	1		○					●
Finishing	TPGA 321 QBN	TPGA160304-QBN	0.016	0.165	1		○					●
Finishing	TPGA 322 QBN	TPGA160308-QBN	0.031	0.157	1		○					●

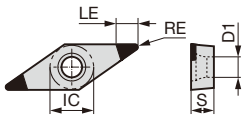
Tungaloy's standard hole specifi cation (ISO non-compliant)
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB



IC : 0.250"
D1 : 0.110"
S : 0.094"

35° Rhombic Positive 5° with hole

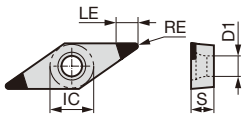
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	2QP-VBGW 21.50.5	2QP-VBGW110202	0.008	0.138	2		○					●	●
	2QP-VBGW 21.51	2QP-VBGW110204	0.016	0.122	2		○					●	●
	2QP-VBGW 21.52	2QP-VBGW110208	0.031	0.087	2		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

VB



IC : 0.250"
D1 : 0.110"
S : 0.125"

35° Rhombic Positive 5° with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930
Precision finishing	2QP-VBGW 220.5-LF	2QP-VBGW110302-LF	0.008	0.138	2			○				●	●									
	2QP-VBGW 220.5-L	2QP-VBGW110302-L		0.138	2				○			●	●									
	2QP-VBGW 221-LF	2QP-VBGW110304-LF	0.016	0.122	2			○				●	●									
	2QP-VBGW 221-L	2QP-VBGW110304-L		0.122	2				○			●	●									
	2QP-VBGW 222-LF	2QP-VBGW110308-LF	0.031	0.087	2			○				●	●									
	2QP-VBGW 222-L	2QP-VBGW110308-L		0.087	2				○			●	●									
Finishing	2QP-VBGW 220.2	2QP-VBGW110301	0.004	0.122	2		○					●	●									
	2QP-VBGW 220.5	2QP-VBGW110302	0.008	0.138	2		○					●	●									
	2QP-VBGW 220.5-LC	2QP-VBGW110302-LC		0.138	2					○		●	●									
	2QP-VBGW 221	2QP-VBGW110304	0.016	0.122	2		○					●	●		●	●	●	●				
	2QP-VBGW 221-SR	2QP-VBGW110304SR		0.122	2		○							●								
	2QP-VBMW 221	2QP-VBMW110304		0.122	2		○												●	●	●	●
	2QP-VBGW 221-LC	2QP-VBGW110304-LC		0.122	2					○		●	●									
	2QP-VBGW 222	2QP-VBGW110308	0.031	0.087	2		○					●	●		●	●	●	●				
	2QP-VBGW 222-SR	2QP-VBGW110308SR		0.087	2		○							●								
	2QP-VBMW 222	2QP-VBMW110308		0.087	2		○												●	●	●	●
	2QP-VBGW 222-LC	2QP-VBGW110308-LC		0.087	2					○		●	●									

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

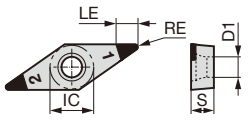
● : Line up

Reference pages: Internal toolholder → D068 - J-Series toolholder → G058 -
TungCap → K027

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB with chipbreaker



IC : 0.250"
D1 : 0.110"
S : 0.125"



35° Rhombic Positive 5° with hole

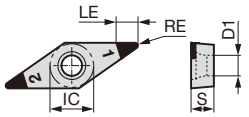
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10
Precision finishing	2QP-VBGT 331 HP	2QP-VBGT110304-HP	0.016	0.118	2		○					●	●	●
	2QP-VBGT 221 HS	2QP-VBGT110304-HS		0.118	2		○					●	●	
	2QP-VBGT 221 HS	2QP-VBGT110308-HP	0.031	0.087	2		○					●	●	●
	2QP-VBGT 222 HS	2QP-VBGT110308-HS		0.087	2		○					●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

VB



IC : 0.375"
D1 : 0.173"
S : 0.187"



35° Rhombic Positive 5° with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360
Precision finishing	2QP-VBGW 330.5-LF	2QP-VBGW160402-LF	0.008	0.138	2			○				●	●								
	2QP-VBGW 330.5-L	2QP-VBGW160402-L		0.138	2				○			●	●								
	2QP-VBGW 331-LF	2QP-VBGW160404-LF	0.016	0.122	2			○				●	●								
	2QP-VBGW 331-L	2QP-VBGW160404-L		0.122	2				○			●	●								
	2QP-VBGW 332-LF	2QP-VBGW160408-LF	0.031	0.087	2			○				●	●								
	2QP-VBGW 332-L	2QP-VBGW160408-L		0.087	2				○			●	●								
Finishing	2QP-VBGW 330.5	2QP-VBGW160402	0.008	0.138	2		○					●	●								
	2QP-VBGW 330.5-LC	2QP-VBGW160402-LC		0.138	2					○		●	●								
	2QP-VBGW 331	2QP-VBGW160404	0.016	0.122	2		○					●	●		●	●	●	●			
	2QP-VBGW 331-SR	2QP-VBGW160404SR		0.122	2		○							●							
	2QP-VBMW 331	2QP-VBMW160404		0.122	2		○												●	●	●
	2QP-VBGW 331-LC	2QP-VBGW160404-LC		0.122	2					○		●	●								
	2QP-VBGW 332	2QP-VBGW160408	0.031	0.087	2		○					●	●		●	●	●	●			
	2QP-VBGW 332-SR	2QP-VBGW160408SR		0.087	2		○							●							
	2QP-VBMW 332	2QP-VBMW160408		0.087	2		○												●	●	●
	2QP-VBGW 332-LC	2QP-VBGW160408-LC		0.087	2					○		●	●								
	2QP-VBGW 333	2QP-VBGW160412	0.047	0.118	2		○					●	●								
Medium cutting	2QP-VBGW 330.5-H	2QP-VBGW160402-H	0.008	0.138	2						○		●								
	2QP-VBGW 331-H	2QP-VBGW160404-H	0.016	0.122	2						○		●								
	2QP-VBGW 331-HC	2QP-VBGW160404HC		0.122	2						○			●							
	2QP-VBGW 332-H	2QP-VBGW160408-H	0.031	0.087	2						○		●								
	2QP-VBGW 332-HC	2QP-VBGW160408HC		0.087	2						○			●							

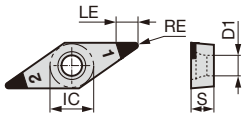
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

Reference pages: VB: Internal toolholder → D068 -, J-Series toolholder → G058 -, TungCap → K027
VC: External toolholder → C113 -, Internal toolholder → D072 -, TungCap → K015 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

VB with chipbreaker



IC : 0.375"
D1 : 0.173"
S : 0.187"

35° Rhombic Positive 5° with hole

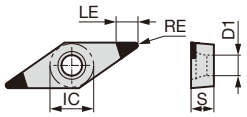
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10
Precision finishing	2QP-VBGT 331 HP	2QP-VBGT160404-HP	0.016	0.118	2		○					●	●	●
	2QP-VBGT 331 HS	2QP-VBGT160404-HS		0.118	2		○					●	●	
	2QP-VBGT 332 HP	2QP-VBGT160408-HP	0.031	0.087	2		○					●	●	●
	2QP-VBGT 332 HS	2QP-VBGT160408-HS		0.087	2		○					●	●	

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

VC



IC : 0.187"
D1 : 0.091"
S : 0.094"

35° Rhombic Positive 7° with hole

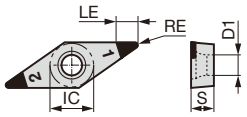
K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20
Finishing	2QP-VCGW 630.5	2QP-VCGW080202	0.008	0.138	2		○					●	●
	2QP-VCGW 631	2QP-VCGW080204	0.016	0.122	2		○					●	●
	2QP-VCGW 632	2QP-VCGW080208	0.031	0.087	2		○					●	●

*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

VC



IC : 0.375"
D1 : 0.173"
S : 0.187"

35° Rhombic Positive 7° with hole

K	Cast iron
S	Superalloy
H	Hard material
	Sintered metal

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Wiper	Standard	Improve issue* Burr	Flank wear	Crater wear	Chipping	BXA10	BXA20	BXM10	BXM20	BXA40	BX330	BX360	BX815	BX930
Precision finishing	2QP-VCGW 332-E	2QP-VCGW160408-E	0.031	0.087	2		○												●	
	2QP-VCGW 332-LT	2QP-VCGW160408-LT		0.087	2						○								●	
	2QP-VCGW 333-E	2QP-VCGW160412-E	0.047	0.118	2		○												●	
	2QP-VCGW 333-LT	2QP-VCGW160412-LT		0.118	2						○								●	
Finishing	2QP-VCGW 330.5	2QP-VCGW160402	0.008	0.138	2		○					●	●							
	2QP-VCGW 331	2QP-VCGW160404	0.016	0.122	2		○					●	●	●	●	●				
	2QP-VCMW 331	2QP-VCMW160404		0.122	2		○										●	●		●
	2QP-VCGW 332	2QP-VCGW160408	0.031	0.087	2		○					●	●							
Medium cutting	2QP-VCGW 330.5-H	2QP-VCGW160402-H	0.008	0.138	2						○	●	●							
	2QP-VCGW 331-H	2QP-VCGW160404-H	0.016	0.122	2						○	●	●							
	2QP-VCGW 332-H	2QP-VCGW160408-H	0.031	0.087	2						○	●	●							

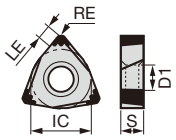
*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WX



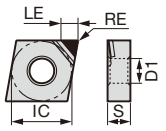
IC : 0.250"
D1 : 0.106"
S : 0.125"

80° Trigon with hole

| | | |

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



IC : 0.500"
D1 : 0.203"
S : 0.187"

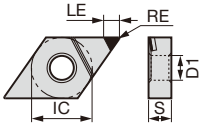
80°Rhombic with hole

N Non-ferrous ●◐ ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140
Finishing	1QP-CNMM 430.5	1QP-CNMM120402	0.008	0.109	1	○	●		
	CNMM 430.5-DIA	CNMM120402-DIA		0.138	1	○		●	
	1QP-CNMM 431	1QP-CNMM120404	0.016	0.109	1	○	●		
	CNMM 431-DIA	CNMM120404-DIA		0.138	1	○		●	
	CNGA 431 DIA	CNGA120404-DIA		0.138	1				●
	CNGA 432 DIA	CNGA120408-DIA	0.031	0.109	1				●

● : Line up

DN



IC : 0.500"
D1 : 0.203"
S : 0.187"

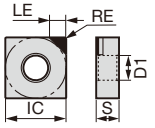
55° Rhombic with hole

N Non-ferrous ●◐ ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120	DX140	DX160
Finishing	DNMM 430.5-DIA	DNMM150402-DIA	0.008	0.130	1	○	●		
	DNMM 431-DIA	DNMM150404-DIA	0.016	0.122	1	○	●		
	DNGA 431 DIA	DNGA150404-DIA		0.122	1			●	●
	DNGA 432 DIA	DNGA150408-DIA	0.031	0.109	1			●	

● : Line up

SN



IC : 0.500"
D1 : 0.203"
S : 0.187"

Square with hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	SNGA 431 DIA	SNGA120404-DIA	0.016	0.142	1		●
	SNGA 432 DIA	SNGA120408-DIA	0.031	0.142	1		●

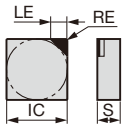
● : Line up

Reference pages: CN: External toolholder → C019 -, Internal toolholder → D027 -
J-Series toolholder → G036, TungCap → K008 -
DN: External toolholder → C036 -, Internal toolholder → D042 -
J-Series toolholder → G052, TungCap → K011 -
SN: External toolholder → C076 -, Internal toolholder → D054 -

PCD Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN



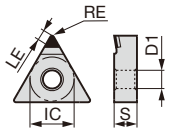
IC : 0.500"
S : 0.187"

Square without hole

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
N Non-ferrous ●◐							
Finishing	SNGN 432-DIA	SNGN120408-DIA	0.031	0.142	1		●

● : Line up

TN



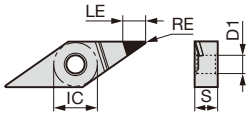
IC : 0.375"
D1 : 0.150"
S : 0.187"

Triangular with hole

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160
N Non-ferrous ●◐ ●◐ ●◐ ●◐										
Finishing	1QP-TNMM 330.5	1QP-TNMM160402	0.008	0.106	1	○	●			
	TNMM 330.5-DIA	TNMM160402-DIA		0.130	1	○		●		
	1QP-TNMM 331	1QP-TNMM160404	0.016	0.102	1	○	●			
	TNMM 331-DIA	TNMM160404-DIA		0.125	1	○		●		
	TNGA 331 DIA	TNGA160404-DIA		0.125	1				●	●
	TNGA 332 DIA	TNGA160408-DIA	0.031	0.114	1				●	●

● : Line up

VN



IC : 0.375"
D1 : 0.150"
S : 0.187"

35° Rhombic with hole

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120
N Non-ferrous ●◐							
Finishing	VNMM 330.5-DIA	VNMM160402-DIA	0.008	0.189	1	○	●
	VNMM 331-DIA	VNMM160404-DIA	0.016	0.173	1	○	●
	VNMM 332-DIA	VNMM160408-DIA	0.031	0.142	1	○	●

● : Line up

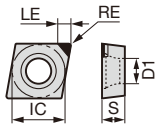
Reference pages: TN: External toolholder → C088 -, Internal toolholder → D063 -
J-Series toolholder → G056 -, TungCap → K013 -
VN: External toolholder → C103 -, Internal toolholder → D077 -, TungCap → K014 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC



80°Rhombic Positive 7° with hole



IC : 0.250"
D1 : 0.109"
S : 0.094"

N Non-ferrous ●◐ ●◐ ●◐

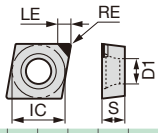
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140
Finishing	CCGW 21.5V DIA	CCGW060200-DIA	0.002	0.094	1				●
	CCMT 21.50.5 DIA	CCMT060202-DIA	0.008	0.094	1	○		●	
	CCGW 21.50.5 DIA	CCGW060202-DIA		0.094	1				●
	1QP-CCGT 21.51 NS	1QP-CCGT060204-NS	0.016	0.122	1	○	●		
	1QP-CCMT 21.51	1QP-CCMT060204		0.094	1	○	●		
	CCMT 21.51 DIA	CCMT060204-DIA		0.094	1	○		●	
	CCGW 21.51 DIA	CCGW060204-DIA		0.094	1				●

● : Line up

CC



80°Rhombic Positive 7° with hole



IC : 0.375"
D1 : 0.173"
S : 0.156"

N Non-ferrous ●◐ ●◐ ●◐ ●◐

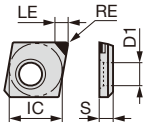
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140	DX160
Finishing	CCMT 32.50.5 DIA	CCMT09T302-DIA	0.008	0.094	1	○		●		
	CCGW 32.50.5 DIA	CCGW09T302-DIA		0.138	1				●	
	1QP-CCGT 32.51 NS	1QP-CCGT09T304-NS	0.016	0.122	1	○	●			
	1QP-CCMT 32.51	1QP-CCMT09T304		0.094	1	○	●			
	CCMT 32.51 DIA	CCMT09T304-DIA		0.094	1	○		●		
	CCGW 32.51 DIA	CCGW09T304-DIA		0.138	1				●	●
	1QP-CCGT 32.52 NS	1QP-CCGT09T308-NS	0.031	0.118	1	○	●			
	CCGW 32.52 DIA	CCGW09T308-DIA		0.134	1				●	

● : Line up

CP



80° Rhombic Positive 11° with hole



IC : 0.375"
D1 : 0.157"
S : 0.094"

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	CPGA 31.50.5 DIA	CPGA090202-DIA	0.008	0.094	1		●
	CPGA 31.51 DIA	CPGA090204-DIA	0.016	0.094	1		●

Tungaloy's standard hole specifi cation (ISO non-compliant)

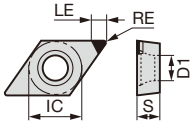
● : Line up

Reference pages: CC: External toolholder → C034 -, Internal toolholder → D018 -
J-Series toolholder → G030 -, TungCap → K011 -

PCD Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC



IC : 0.250"
D1 : 0.110"
S : 0.094"

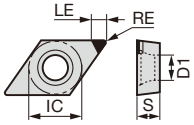
55° Rhombic Positive 7° with hole

N Non-ferrous ●◐ ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140
Finishing	DCGW 21.5V DIA	DCGW070200-DIA	0.002	0.094	1				●
	DCMT 21.50.5 DIA	DCMT070202-DIA	0.008	0.091	1	○		●	
	DCGW 21.50.5 DIA	DCGW070202-DIA		0.091	1			●	●
	1QP-DCGT 21.51 NS	1QP-DCGT070204-NS	0.016	0.118	1	○	●		
	DCMT 21.51 DIA	DCMT070204-DIA		0.083	1	○		●	
	DCGW 21.51 DIA	DCGW070204-DIA		0.083	1				●

● : Line up

DC



IC : 0.375"
D1 : 0.173"
S : 0.156"

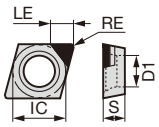
55° Rhombic Positive 7° with hole

N Non-ferrous ●◐ ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140
Finishing	DCMT 32.50.5 DIA	DCMT11T302-DIA	0.008	0.125	1	○		●	
	DCGW 32.50.5 DIA	DCGW11T302-DIA		0.125	1				●
	1QP-DCGT 32.51 NS	1QP-DCGT11T304-NS	0.016	0.118	1	○	●		
	DCMT 32.51 DIA	DCMT11T304-DIA		0.118	1	○		●	
	DCGW 32.51 DIA	DCGW11T304-DIA		0.118	1				●
	1QP-DCGT 32.52 NS	1QP-DCGT11T308-NS	0.031	0.118	1	○	●		
	DCGW 32.52 DIA	DCGW11T308-DIA		0.106	1				●

● : Line up

EP



IC : 0.156"
D1 : 0.091"
S : 0.063"

75° Rhombic Positive 11° with hole

N Non-ferrous ●◐

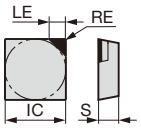
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	EPGW 520.5 DIA	EPGW040102-DIA	0.008	0.079	1		●
	EPGW 521 DIA	EPGW040104-DIA	0.016	0.075	1		●

● : Line up

Reference pages: DC: External toolholder → C052 -, Internal toolholder → D032 -
J-Series toolholder → G037 -, TungCap → K015 -
EP : Internal toolholder → D048 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP



IC : 0.375"
S : 0.125"

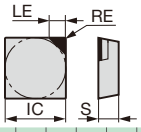
Square Positive 11° without hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	SPGN 322 DIA	SPGN090308-DIA	0.031	0.142	1		●

● : Line up

SP



IC : 0.500"
S : 0.125"

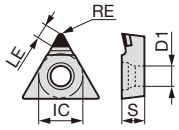
Square Positive 11° without hole

N Non-ferrous ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140	DX160
Finishing	SPGN 420 DIA	SPGN120302-DIA	0.008	0.142	1		●	
	SPGN 421 DIA	SPGN120304-DIA	0.016	0.142	1		●	
	SPGN 422 DIA	SPGN120308-DIA	0.031	0.142	1		●	●

● : Line up

TC



IC : 0.187"
D1 : 0.106"
S : 0.094"

Triangular Positive 7° with hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120
Finishing	TCMT 63Y DIA	TCMT080202-DIA	0.008	0.087	1	○	●
	TCMT 631 DIA	TCMT080204-DIA	0.016	0.079	1	○	●

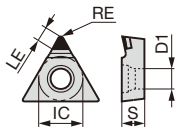
● : Line up

Reference pages: SP: Internal toolholder → D053
TC: External toolholder → C098 -, Internal toolholder → D056
J-Series toolholder → G054 -

PCD Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC



IC : 0.250"
D1 : 0.109"
S : 0.094"

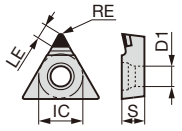
Triangular Positive 7° with hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120
Finishing	TCMT 21.50.5 DIA	TCMT110202-DIA	0.008	0.094	1	○	●
Finishing	TCMT 21.51 DIA	TCMT110204-DIA	0.016	0.087	1	○	●

● : Line up

TC



IC : 0.250"
D1 : 0.109"
S : 0.125"

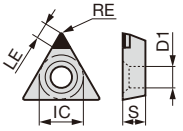
Triangular Positive 7° with hole

N Non-ferrous ●◐ ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120
Finishing	TCMT 220.5 DIA	TCMT110302-DIA	0.008	0.094	1	○		●
Finishing	1QP- TCMT 221	1QP-TCMT110304	0.016	0.087	1	○	●	
Finishing	TCMT 221 DIA	TCMT110304-DIA		0.087	1	○		●

● : Line up

TP



IC : 0.219"
D1 : 0.098"
S : 0.094"

Triangular Positive 11° with hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGA 73Y DIA	TPGA090202-DIA	0.008	0.094	1		●
Finishing	TPGA 731 DIA	TPGA090204-DIA	0.016	0.087	1		●

Tungaloy's standard hole specifi cation (ISO non-compliant)

● : Line up

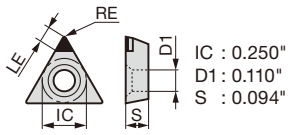
Reference pages: TC: External toolholder → C098 -, Internal toolholder → D056
J-Series toolholder → G054 -
TP: Mounting hole specification → B146, Internal toolholder → D057 -

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.110"
S : 0.094"

N Non-ferrous ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGA 21.50 DIA	TPGA110202-DIA	0.008	0.094	1		●
Finishing	TPGA 21.51 DIA	TPGA110204-DIA	0.016	0.087	1		●

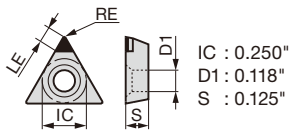
Tungaloy's standard hole specifi cation (ISO non-compliant)

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.118"
S : 0.125"

N Non-ferrous ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGA 220.5 DIA	TPGA110302-DIA	0.008	0.094	1		●
Finishing	TPGA 221 DIA	TPGA110304-DIA	0.016	0.087	1		●
Finishing	TPGA 222 DIA	TPGA110308-DIA	0.031	0.114	1		●

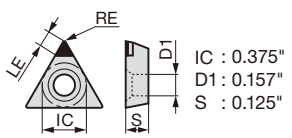
Tungaloy's standard hole specifi cation (ISO non-compliant)

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.375"
D1 : 0.157"
S : 0.125"

N Non-ferrous ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGA 320.5 DIA	TPGA160302-DIA	0.008	0.130	1		●
Finishing	TPGA 321 DIA	TPGA160304-DIA	0.016	0.125	1		●
Finishing	TPGA 322 DIA	TPGA160308-DIA	0.031	0.114	1		●

Tungaloy's standard hole specifi cation (ISO non-compliant)

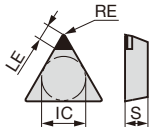
● : Line up

Reference pages: Mounting hole specification → B146
Internal toolholder → D057 -

PCD Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



IC : 0.219"
S : 0.094"

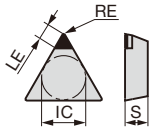
Triangular Positive 11° without hole

N Non-ferrous ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGN 731 DIA	TPGN090204-DIA	0.016	0.087	1		●

● : Line up

TP



IC : 0.250"
S : 0.125"

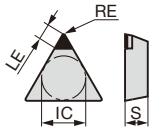
Triangular Positive 11° without hole

N Non-ferrous ●ᑕ ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120	DX140
Finishing	TPGN 221 DIA	TPGN110304-DIA	0.016	0.125	1		●	●
	TPGN 222 DIA	TPGN110308-DIA	0.031	0.114	1			●

● : Line up

TP



IC : 0.375"
S : 0.125"

Triangular Positive 11° without hole

N Non-ferrous ●ᑕ ●ᑕ

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120	DX140
Finishing	TPGN 320.5 DIA	TPGN160302-DIA	0.008	0.130	1			●
	TPGN 321 DIA	TPGN160304-DIA	0.016	0.125	1		●	●
	TPGN 322 DIA	TPGN160308-DIA	0.031	0.114	1			●

● : Line up

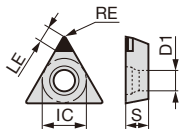
Reference pages: Internal toolholder → D058

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular Positive 11° with hole



IC : 0.187"
D1 : 0.091"
S : 0.094"

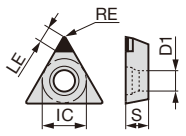
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	N Non-ferrous ●◐ DX140
Finishing	TPGW 63Y DIA	TPGW080202-DIA	0.008	0.094	1		●
Finishing	TPGW 631 DIA	TPGW080204-DIA	0.016	0.091	1		●

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.219"
D1 : 0.098"
S : 0.094"

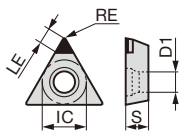
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	N Non-ferrous ●◐ DX120	●◐ DX140
Finishing	TPGW 73Y DIA	TPGW090202-DIA	0.008	0.094	1		●	●
Finishing	TPGW 731 DIA	TPGW090204-DIA	0.016	0.087	1			●

● : Line up

TP



Triangular Positive 11° with hole



IC : 0.250"
D1 : 0.109"
S : 0.094"

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	N Non-ferrous ●◐ DX120	●◐ DX140
Finishing	TPGW 21.50.5 DIA	TPGW110202-DIA	0.008	0.094	1		●	●
Finishing	TPGW 21.51 DIA	TPGW110204-DIA	0.016	0.087	1			●

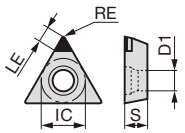
● : Line up

Reference pages: Internal toolholder → D057 -

PCD Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



IC : 0.313"
D1 : 0.134"
S : 0.125"

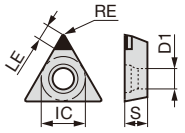
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX120	DX140
Finishing	TPGW 2.520.5 DIA	TPGW130302-DIA	0.008	0.130	1		●	●
Finishing	TPGW 2.521 DIA	TPGW130304-DIA	0.016	0.125	1			●

● : Line up

TP



IC : 0.375"
D1 : 0.173"
S : 0.156"

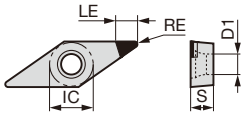
Triangular Positive 11° with hole

N Non-ferrous

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX140
Finishing	TPGW 32.50.5 DIA	TPGW16T302-DIA	0.008	0.130	1		●
Finishing	TPGW 32.51 DIA	TPGW16T304-DIA	0.016	0.125	1		●
Finishing	TPGW 32.52 DIA	TPGW16T308-DIA	0.031	0.114	1		●

● : Line up

VC



IC : 0.375"
D1 : 0.173"
S : 0.187"

35° Rhombic Positive 7° with hole

N Non-ferrous

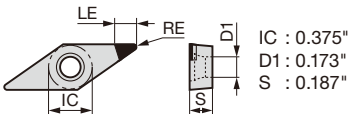
Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110	DX120	DX140
Finishing	VCMT 330.5 DIA	VCMT160402-DIA	0.008	0.189	1	○		●	
Finishing	VCGW 330.5 DIA	VCGW160402-DIA		0.189	1				●
Finishing	1QP-VCGT 331 NS	1QP-VCGT160404-NS	0.016	3	1	○	●		
Finishing	VCMT 331 DIA	VCMT160404-DIA		0.173	1	○		●	
Finishing	VCGW 331 DIA	VCGW160404-DIA		0.173	1				●
Finishing	1QP-VCGT 332 NS	1QP-VCGT160408-NS	0.031	3	1	○	●		

● : Line up

Reference pages: TP: Internal toolholder → D057 -
VC: External toolholder → C113 -, Internal toolholder → D072 -, TungCap → K015 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

VB



IC : 0.375"
D1 : 0.173"
S : 0.187"

35° Rhombic Positive 5° with hole

N Non-ferrous ●◐

Application	Designation Inch	Designation Metric	Dimension (in) RE	Dimension (in) LE	No. of corners	Chipbreaker	DX110
Finishing	1QP-VBGT 331 NS	1QP-VBGT160404-NS	0.016	3	1	○	●
Finishing	1QP-VBGT 332 NS	1QP-VBGT160408-NS	0.031	3	1	○	●

● : Line up

Reference pages: Internal toolholder → D068 - TungCap → K027

● CVD Coated Grades for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	NTK	Kennametal	Seco Tools	Walter	Iscar	TaeguTec	Ceratizit
Classifi-cation	Symbol													
P	P01	**T9205**	UE6105		GC4305	CA510	HG8010		KCP05B KCP05 KCPK05	TP0501	WPP05S	IC8150 IC9150	TT8105 TT8105B	CTCK110
	P10	**T9205** **T9215**	UE6105 UE6110 MC6015 MC6115	AC8015P AC8020P	GC4305 GC4315 GC4415	CA515	HG8010 GM8020	CP7	KCP10B KCP10	TP0501 TP1501	WPP10S WPP10G WPV10	IC8150 IC9150	TT8115 TT8115B	CTC3110 CTCK120 CTCP115-P
	P20	**T9215** **T9225**	MC6015 MC6025 MC6115 MC6125	AC8015P AC8020P AC8025P	GC4315 GC4325 GC4415 GC4425	CA515 CA525 CA025P	HG8025 GM8020 GM25	CP7	KCP25B KCP25	TP1501 TP2501	WPP20S WPP20G WPV20	IC8150 IC9150 IC8250 IC9250	TT8125 TT8125B TT5100	CTCP115 CTCP115-P CTCP125 CTCP125-P
	P30	**T9225** **T9235**	MC6025 MC6035 MC6125	AC8025P AC8035P AC6030M	GC4325 GC4335 GC4425	CA530 CA025P	HG8025 GM8035 GM25		KCP30B KCP30	TP2501 TP3501	WPP30S WPP30G	IC8350 IC9350	TT8125 TT8125B TT5100 TT8135 TT8135B	CTCP125 CTCP125-P CTCP135-P
	P40	**T9235** **T6215**	MC6035	AC8035P AC6030M	GC4335	CA530	GM8035 GX30		KCP40B KCP40	TP3501		IC8350 IC9350	TT8135 TT8135B TT7100	
M	M10	**T6215**	MC7015	AC6020M	GC2015	CA6515			KCM15B KCM15	TM1501		IC9250	TT9215	CTCM120
	M20	**T6215**	MC7015 MC7025	AC6020M	GC2015 GC2025 GC2220	CA6525	HG8025 GM25		KCM25B KCM25	TM1501 TM2501		IC9350	TT9215 TT9225	CTCM120 CTCM130
	M30	**T6215**	MC7025 US735	AC6030M	GC2025 GC2035	CA6525	GM8035 GM25 GX30		KCM35B KCM35	TM2501 TM3501		IC9350	TT9225 TT9235	CTCM130
	M40		US735		GC2035		GX30			TM4000			TT9235	
K	K01	**T505** **T5105**	MC5005 MC5105 UC5105	AC405K	GC3005 GC3205	CA4505 CA310	HX3505	CP1	KCK05B KCK05	TK0501		IC5005	TT7005	
	K10	**T505** **T515** **T5105** **T5115**	MC5015 MC5115 MH515 UC5115	AC4010K AC415K	GC3210 GC3215	CA4515 CA315	HX3515 HG8010	CP1	KCK15B KCK15	TK0501	WKK10S WKV10 WAK10	IC9150 IC5005 IC5010	TT7005 TT7015	CTC3110 CTCK110
	K20	**T515** **T5115** **T5125**	MC5015 MC5125 UC5115	AC4015K AC420K	GC3225	CA320	HX3515 GM8020	CP1	KCK20B KCK20	TK1501	WKK20S WKV20 WAK20	IC9150 IC5010	TT7015 TT7025 TT7310	CTCK120 CTCP115
	K30	**T5125**		AC8025P			HG8025				WAK30	IC4050 IC8150	TT7025	CTCP125

Note: The above table is selected from a publication. We have not obtained approval from each company.

● PVD Coated Grade for Turning

ISO Classification	ISO Symbol	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	NTK	Kennametal	Seco Tools	Walter	Iscar	TaeguTec	Ceratizit
P	P01					PR1705								
	P10	**AH8005**	VP10RT MS6015	AC1030U AC530U ACZ150	GC1105	PR1705 PR930 PR1725	IP2000	VM1 DT4 DM4	KC5010 KCU10	TS2000 CP200		IC807 IC907 IC808 IC908 IC1007	TT4410 TT7010	CTPX710 CTPX715
	P20	**AH120 AH725 SH725 AH730 J740 AH8015 AH6225**	VP15TF VP20MF VP10RT VP20RT UP20M MS6015	AC1030U AC530U	GC1125	PR1725 PR930 PR1225 PR1025	IP2000	VM1 DT4 DM4 TM4 QM3	KC5025 KCU25 KCS10 KCU10 KC5010	TS2500 CP200		IC807 IC907 IC808 IC908 IC830 IC1010	TT9030 TT4410	CTPX710 CTPX715 CTPM125
	P30	**AH120 AH725 AH7025 SH725 SH730 J740 AH8015 AH6225**	VP15TF VP20MF VP20RT UP20M MS7025	AC1030U	GC1125	PR1725 PR1225 PR1535 PR1025	IP3000	QM3 TM4	KC5025 KCU25 KCU25	CP500 CP600		IC928 IC528 IC228 IC830 IC1010 IC1030	TT9030 TT8020 TT8010 TT9080 TT7220	CTPM125
	P40	**AH120 AH725 AH6225**	MS7025			PR1535	IP3000	QM3		CP500 CP600		IC228 IC528 IC1030	TT8020 TT8010 TT4430 TT9020	CTPM125
M	M01										WSM01	IC806 IC1007		
	M10	**AH8005 AH6225**	VP10RT	AC5005S ACZ150	GC1105 GC1115	PR930 PR1725	IP100S IP050S	VM1 DT4 DM4 ZM3	KC5010 KCU10 KCS10B KCS10	TS2000 TS2500 CP200	WSM10 WSM10S WSM01	IC807 IC907 IC808 IC908 IC1010	"TT4410 TT5080"	CTPM125 CTPX710 CTPX715
	M20	**AH8015 AH120 AH7025 AH725 SH725 SH730 AH6225**	VP10RT VP15TF VP20MF VP20RT UP20M MS7025 MS9025	AC5015S	GC1115 GC1125	PR930 PR1225 PR1725 PR1025	IP100S IP050S	VM1 DT4 DM4 ST4 TM4 ZM3 QM3	KC5025 KCU25 KCS10 KCU10 KC5010	TS2500 CP200 CP500 CP600	WSM20S	IC808 IC908 IC830 IC1030	TT9030 TT8010 TT4410 TT5080 TT9080	CTPM125 CWN15
	M30	**AH120 AH725 SH725 SH730 J740 AH6235**	VP15TF VP20MF VP20RT UP20M MP7035 MS7025 MS9025	AC6040M AC1030U AC5025S AC530U	"GC1125 GC2035"	PR1225 PR1535 PR1725 PR1025	IP100S	DT4 DM4 QM3 ST4 TM4 ZM3	KC5025 KCU25	CP500 CP600	WSM30S	IC528 IC228 IC830 IC1030	TT8020 TT4430 TT8010 TT8080 TT7220	CTPM125
	M40	**AH6235**	MP7035	AC6040M	GC2035	PR1535		ST4 QM3 TM4		CP600		IC228 IC528	TT8010 TT8020	
K	K01	**AH110**												
	K10	**GH110 AH110**	VP10RT	ACZ150					KC5010 KCU10 KCS10B KCS10	TS2000 CP200		IC807 IC907	TT9030 TT7010 TT6080	CTPX715
	K20	**AH120 AH7025 AH8015 AH6225**	VP10RT VP20RT VP15TF	AC1030U					KC5025 KCU25	TS2500 CP200 TS2000		IC807 IC907 IC808 IC908 IC1007 IC1010	"TT9030 TT7010 TT6080 TT9080	CTPX715
	K30	**AH120 GH130**	VP15TF VP20RT							CP500		IC807 IC907 IC808 IC908	TT9030	CTPX715
S	S01	**AH8005**	VP05RT MP9005	AC5005S AC5015S ACZ150		PR005S	JP9105		KCS10B		WSM10S	IC804 IC806	TT3010	
	S10	**AH8005 AH8015 AH6225**	VP10RT MP9015	AC5005S AC5015S	GC1105	PR015S PR005S	JP9105 JP9115	QM3 ZM3	KC5025 KCU25 KCS10B KCS10 KC5010 KCU10	TS2000 TS2500 CP200 CP500	WSM10S WSM01 WNN10	IC806 IC1007 IC1010	TT3010 TT3020 TT5080	CTPX710 CTPX715
	S20	**AH8015 AH7025 AH6225**	MP9015 VP20RT MP9025 MS9025	AC5015S AC5025S	GC1115 GC1125	PR015S PR1535	JP9115		KC5025 KCU25 KCS10B	TS2000 TS2500 CP200 CP500 CP600	WSM20S	IC807 IC907 IC808 IC908 IC806 IC1010	TT3020 TT4430 TT9030 TT9080	CTPX710 CTPX715
	S30	**AH7025 AH6235**	VP20RT MP9025 MS9025	AC5025S	GC1125	PR1535				CP600	WSM30S	IC830 IC928	TT4430 TT8020 TT9030	

Note: The above table is selected from a publication. We have not obtained approval from each company.

● Cermet for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	NTK	Kennametal	Seco Tools	Walter	Iscar	TaeguTec	Ceratizit
Classifi-cation	Symbol													
P	P01	**NS520**	AP25N VP25N	T1000A		TN610 PV710						IC20N IC520N	PV3010	CTEP10 TCM407
	P10	**AT9530** **GT9530** **J9530**	AP25N VP25N NX2525	T1500Z T1500A	CT5015 GC1525	TN610 TN620 PV710 PV720 CCX			KT315 KTP10	TP1020	WCE10	IC20N IC30N IC520N IC530N	PV3010 CT3000	CTEP10 TCM10 TCM407
	P20	**AT9530** **GT9530** **NS9530** **J9530**	AP25N VP25N VP45N NX2525 NX3035 MP3025	T1500A T1500Z T2500A T2500Z	GC1525	TN620 PV720	CZ25			TP1020 TP1030	WCE10	IC20N IC30N IC520N IC530N	PV3010 CT3000	TCM10
	P30	**NS9530**	VP45N NX3035 MP3025	T2500Z T3000Z		PV730	CZ25					IC530N		
M	M10	**NS520**	AP25N VP25N NX2525	T1000A	GC1525	TN620 TN610 PV720 PV710			KT315 KTP10	TP1030		IC20N IC30N IC520N IC530N	PV3010 CT3000	CTEP10 TCM10 TCM407
	M20	**AT9530** **GT9530** **NS9530** **J9530**	AP25N VP25N NX2525	T1500A		TN620 PV720 PV730	CZ25					IC30N IC530N	PV3010 CT3000	
	M30	**NS9530**		T3000Z			CZ25							
K	K01	**NS520**	AP25N VP25N	T1000A		PV7005							PV3010	CTEP10 TCM10 TCM407
	K10	**AT9530** **GT9530** **NS9530** **J9530**	AP25N VP25N NX2525		CT5015	TN60 CCX	CZ25		KT315 KTP10				PV3010 CT3000	TCM10
	K20	**NS9530**	AP25N VP25N NX2525				CZ25						PV3010 CT3000	

Note: The above table is selected from a publication. We have not obtained approval from each company.

● Cemented Carbide for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	NTK	Kennametal	Seco Tools	Walter	Iscar	TaeguTec	Ceratizit
Classifi-cation	Symbol													
P	P01													
	P10	**TH10**		ST10P										S26T
	P20	**KS20**		ST20E								IC50M	P20	S26T S40T
	P30	**KS15F** **UX30**	UTi20T	A30								IC28 IC50M	P30	S40T
	P40		UTi20T									IC28		
M	M10	**TH10**		EH510					K313 KU10 K68	890		IC20		
	M20	**KS20**	UTi20T	EH520					K313 KU10 K68	HX 883		IC20		CTW7120 H210T U17T
	M30	**UX30**	UTi20T	A30								IC28		
	M40											IC28		S40T
K	K01	**TH03**	HTi05											CTWK601
	K10	**TH10**	HTi10	G10E	H13A	KW10	WH10		K313 KU10 K68	890		IC20	K10	H210T H10T U17T
	K20	**KS15F** **KS20**	UTi20T	G10E	H13A	KW10				890 HX 883		IC20	K20	CTW7120 H210T H10T U17T
	K30		UTi20T		H13A					883				TSM30
	K40													
N	N01	**KS05F**			H10	GW05						IC04		
	N10	**TH10**	HTi10	H1	H10	GW05 KW10	WH10	KM1	K313 KU10 K68	890 HX KX	WK1	IC20 IC28	K10	H210T H10T U17T
	N20	**KS15F**		H1	H13A			KM1		890 HX KX 883	WK1	IC20 IC28	K20	CTW7120 H210T H10T U17T
	N30									883				
S	S01		MT9005 RT9005		H10A	SW05						IC20		
	S10	**KS05F** **TH10**	MT9015 RT9010	EH510	H10F	SW10 KW10	WH10	KM1	K313 KU10 K68	890 883	WK1 WS10	IC20	K10	H210T H10T
	S20	**KS15F** **KS20**	MT9015 RT9010	EH520	H13A H10F	SW25		KM1		890 883	WK1 WS10	IC20 IC28	K20	CTW7120 H210T H10T
	S30									883				
H	H01											IC20		
	H10	**TH10**			H13A		WH10					IC20	K10	
	H20									890 HX 883				

Note: The above table is selected from a publication. We have not obtained approval from each company.

● CBN and PCD for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
K	K01	**BX930 BX910 BX870**	MB710 MB730 MB5015	NCB100 BN500 BNC500	CB50	KBN475 KBN60M			B52		KB1630 KB1345	IB10K		TB7015	WBH10C	WCB80	CTB S10U
	K10	**BX470 BX480**	MB730 MB5015 MB4020	BN7000 BN500	CB7525 CB50	KBN65M KBN65B		JBN795	B23 B30 B52	CBN200 CBN300 CBN400C	KB1640 KB1345	IB05S IB10S	TB730	TB730	WBK40U	WCB80 WCB50	CTB S10U
	K20	**BXC90 BX90S**	MB4020 MB4120 MBS140	BNC8115 BNS8125	CB7925	KBN900 KBN70M			B23 B30 B52	CBN300 CBN500	KB5630	IB90A IB90 IB25KD		TB7020	WBK45U	WCB80	CTB S20C
	K30	**BXC90 BX90S**	MBS140 BC5030	BNS8125		KBN900			B16	CBN500	KB9640	IB90A IB25KD	KB90A	KB90A			
S	S01	**BX815**	MB730	NCB100 BN7000				JBN795	JP2	CBN170		IB05S IB10S		KB90			CTB S10U
	S10	**BX480**	MB4020 MB4120	BN7500 BN7115	CB7050	KBN65B KBN65M			B23 B30	CBN200	KB1630	IB05S IB10S		KB90A	WBK45U	WCB80	CTB S20C
H	H01	**BXM10 BX310**	BC8105 BC8110 MBC010 MB810 MB8110	BNC2010 BNC2115 BN1000 BN2000 BNX10 BN1000	CB7105	KBN510 KBN05M KBN10M			B52 B5K	CBN010 CBN100 CBN160C CBN050C	KB1610 KB5610"	IB05H IB10HC	TB610	TB610	WBH10C	WCB30	CTB H15C CTB H15U
	H10	**BXA10 BXM10 BX330 BX530**	BC8210 MB020 MB8025 MB8110 MB825	BNC2020 BNC2115 BN2000	CB7015 CB7115 CB7025	KBN525 KBN05M KBN10M		JBN245	B36 B52 B6K	CBN150 CBN200 CBN300 CBN060K CBN160C CBN400C	KB9610 KB1610 KB5610	IB50 IB55 IB10H IB10HC IB20H IB25HA		TB2015	WBH10C WBH10P WBH10U	WCB30 WCB50	CTB H15C CTB H15U
	H20	**BXM20 BXA20 BX360**	BC8220 MBC020 MB8025 MB8120	BNC200 BNC2020 BNC2125 BNX20	CB7015 CB7125 CB50	KBN525 KBN05M KBN10M KBN25M KBN020		JBN300	B22 B36 B40 B6K	CBN200 CBN300 CBN160C CBN400C CH2540	KB5625 KB1625	IB20H IB20HC IB25HA IB25HC	TB650 TB2030	TB650	WBH25P	WCB50 WCB80	CTB H20C CTB H21U
	H30	**BR35F BXC50 BX380**	BC8130 MB8130 MB835	BNC300 BN350 BNX25		KBN30M KBN35M KBN900		JBN300	B22 B40	CH3515	KB1630 KB9640	IB25HC IB90	TB670	TB670	WBH40C		CTB H40C CTB H40U
N	N01	**DX160 DX180**	MD205	DA90	CD05	KPD230		JDA30 JDA735	PD1		KD1405	ID5					CTD PU20
	N10	**DX140**	MD205 MD220	DA150	CD10	KPD010 KPD230		JDA715	PD1	PCD05 PCD10	KD100 KD1400 KD1425	ID5	IN90D	TD810	WDN25U	WCD10	CTD PU20
	N20	**DX120**	MD220 MD230	DA2200 DA1000	CD10	KPD010		JDA715	PD2	PCD05 PCD20	KD1425		IN90D	KP300	WDN25U	WCD10	CTD PD20
	N30	**DX110**	MD2030 MD230	DA2200 DA1000		PKD001		JDA10		OVD20 PCD30 PCD30M				TD830		WCD10	

Note: The above table is selected from a publication. We have not obtained approval from each company.

● Ceramic for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Moldino	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
K	K01	**TZ120** **LX21**		NB90S	CC620	KA30 A65 KT66 PT600M			HC1 HW2		KY1310 KY1615	IN110		AW120 AB30	CW2015		CTN3105 CTS3105
	K10	**CX710** **FX105**			CC6190 CC650	A65 KT66 A66N PT600M			HC2 HC5 HC6		KY1310 KY1615	IN23 IS6	IN70N	AB30 AS10	CW2015 CW5025	WSN10	CTN3105 CTM3110 CTI3105 CTN3110 CTS3105
	K20	**FX105** **CX710**			CC6190	KS6000 KS6050			SP2 SP9 SX8 SX9		KY1320 KY3400 KY3500 KY4300	IS8	IN70N	SC10	CW5025	WSN10	CTM3110 CTN3110
S	S01	**TS200**							JX1	CS100	KY1525 KY2100	IS25		TC3020			
	S10	**TW43** **TS300** **FX510**		WX120	CC670 CC6060 CC6065	KS6030 KS6040			WA1 WA5 SX9	CW100 CS300	KY1540 KYS30 KY2100 KY4300	IW7 IS35		TC430 TC3030	CW3020	WWS20	
H	H01	**LX10** **LX11**		NB100C	CC6050 CC650	PT600M			HC2 HC5 HC6		KY4300	IN420 IN22		AB2010	CW2015		CTS3105
	H10				CC6050 CC670 CC6190	A66N PT600M			HC7 WA1		KY4400	IN23		AB2010 AB20 AB30	CW2015		CTS3105

Note: The above table is selected from a publication. We have not obtained approval from each company.

Technical Guide - Chipbreaker Comparison Chart

● Negative insert type

ISO Classification	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Moldino	Kennametal	Seco Tools	Iscar	TaeguTec	Walter	Ceratizit
P	Precision finishing	**01** **TF**	PK FH	FA	GP	PF	FE	FS, LF	FF1	SF, PP, TF	FA		
	Finishing and light cutting	**TS, TSF** **PS, ZF** **NS** **AS** **TQ**	FP FY LP SH SA SY	SU FL SE, SX	XP, PP XQ, HQ, CJ, XS	PF LC MF R/L-K XF	BE, BH AB, CT CE	FF, FN	MF2	F3P NF, SF	FG VF, EA FC MC ML, MP	NF3 NS6	CF, TF
	Finishing and light cutting (With Wiper)	**AFW, FW** **ASW, SW**	SW MW	LUW SEW GUW	WP WQ WF	WL, WF WMX WM, WR		FW MW RW	W-FF2 W-MF1 W-M3 W-M6	WF WG	WS WT	NF NM	TFQ TMQ
	Medium cutting	**TM, AM** **PM, DM** **ZM, NM** **All-round, TA**	MA MH , MP	GU GE , UX	HS , PT , GT CS , PS	PM , QM XM , XRM	AH AE , AY , B	MN	MF5 M3	M3P , M3M PP , TF , GN	PC , MT MC , MG	NMT , NM4	TMF , TMM M50
	Medium to heavy cutting	**TH** **THS**	RP, GH	MU, ME HG	PH All-round	HM, PR MR	RE	RN, RP MR	M5 MR7	NR MR	RT	MM5, NM6 NM9	TM TRM
	Heavy cutting	**TU** **TRS** **TUS**	HM, HX HL, HR HZ, HV	HG, HP HU, HW HF	PX	PR, MR HR, QR	TE, UE HX, HE H	RM RH	R RR	R3P NM	HT, HD RX, RH HY, HZ	NR6 NRF NRR	TRR, TR R28, R58 R88
M	Finishing and light cutting	**SF** **SS**	GM, LM	EX, EG SU, EF	GU MQ	MF, XF	MP BH, AB	FP, FF	FF1 MF1 MF3	TF, VL	EA, SF, SU FG	NF4 NMS	CF, F30, M34 F32, TF
	Medium cutting	**SM, SA** **S, TA** **SDM**	MM, MA MS	GU HM	MU	MM, QM XM	PV, SE DE	MP, P	MF4 M3	M3M, PP	EM, ET	NM4	TMF, M42 M30, M52
	Heavy cutting	**SH, TH** **TU**	GH, RM HL	EM, MU	MS TK	MR HM, PR	AH, AE	UP, RP	M5 MR3	MR, MH		NR4 NRT, NRS	TM, M60 TRM, TMR, TRR R80
K	Finishing	**CF**	LK, MA	UZ	C	KF, XF	Y, AH	FN, MT		GN	FG		CF
	Medium cutting	**CM** **All-round**	MK GK	GZ	ZS All-round	KM, QM XM, XMR	RE VA	RP, UN	M4 M5		MT MG	NM5	M50
	Heavy cutting	**CH** **Flat-top**	RK **Flat-top**	**Flat-top**	GC **Flat-top**	KR **Flat-top**	RE,V	MA **Flat-top**	MR9 **Flat-top**		RT	**Flat-top**	TMR , TR R28 R58 , R88
N	Cutting of non-ferrous metals	**P** **28**		AX	AH, A3	MF		MS GR		PP			F32
S	Finishing	**HRF**	FJ, LS MJ	EF EX	SQ, SX	SF	VI	FS MS	MF1			NFT NF4	
	Medium cutting	**HRM** **HMM** **SA, 28** **SDM**	MS RS, GJ	EG MU EM	SQ, SX	SMR	VI	UP RP	MF4 M1	PP	SM	NMS NM4, NRS, NR4	M34, M52

Note: Above charts are based on published data and not authorized by each manufacturer.

● Positive insert type

ISO Classifi-cation	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Moldino	NTK	Kennametal	Seco Tools	Iscar	TaeguTec	Walter	Ceratizit
P	Precision finishing	**01**	FV	FC	CF, CK		JQ		GM	FF1 F1	SF		PF2	F32
	Finishing and light cutting	**PSF, PF, SS** **PS, PSS** **TS, TSF** **TSW, SW** **W08~20**	FP, FV, SV LP SVX SW, MW	FP, LU FK, SC SU LUW, SDW	GQ GP XP PP, VF WP	R/L-K PF UF WF, WK, WM	JQ JE		11, LF VF, FP FW, MW	MF2	PF SM, 14, 17 19, XL R/L RF, LF	FA FG GF	PF5 PF4 PS5 PF, PM	SF SMF SMW, 25Q
	Medium cutting	**PM** **TM** **All-round** **RS**	MP MV No sign	SU, MU SC	All-round HQ, XQ GK	PM UM, PR UR	JE		MP MF	M3 M5	DT, HQ	MT MT	PM5	SM
	High-feed, small depth of cut cutting	**61**									No sign 14	No sign		
M	Finishing	**PSF, SS**	FM, SV	FC		R/L-K UF, MF			11, VF	FF1 MF2		FG		
	Finishing to Medium cutting	**PSS** **PS**	LM SV	SI, GU LB, SU	MQ	MM UM			LF, FP	M3			PF4	SF, SMF
	Medium cut-ting	**PM**	MM	MU	HQ	MR UR			MF, MP	M5			PM5	F23, F43 SM
K	Cutting of cast irons	**CM** **Flat-top**	MK **Flat-top**	FC, MU **Flat-top**	KF KM UM, KR	**Flat-top**			11, VF, FP MP, MF **Flat-top**	M5 **Flat-top**	19	MT **Flat-top**	PS5, PM5 **Flat-top**	SF 25P 27, 29
N	Cutting of non-ferrous metals	**AL** **P** **Ground**	AZ R/L-F R/L	AG AY AW LD, GD	AH	AL			HP, LF	AL	AS	FL	PF2 PM2	23P 25P 27, 29
S	Finishing	**PSF**	FJ	FC	MQ	MF, UF, R/L-K			HP	F1				SF
	Finishing to Medium cutting	**PSS** **PS**	LS.MS	SU, GU		MM SM			LF, FP	MF2				F23
	Medium cutting	**All-round**		SI		UM, MR, UR						FG	PF2, PF4	SM, 25P, 29
P M N S	Turning on small lathes	**JP, 01** **W08, W15, W20** **J08** **JS, JSS** **JRP, JSR, JPP** **J10, TS, JTS** **TSW** **SS**	R/L-SR R/L-SN R/L-SS FS-P, F LS-P SW, MW SRF SMG	W, SD FX, FY LU, FP, FK, SU FC, SI, SC LUW, SDW	CF, SKS R/L-F, R/L-FSF ER/L-U FR/L-U R/L-U FR/L-U, R/L-USF MF, R/F-FSF SK, GF CK, GQ	F, M UM	No sign	AMX AZ7 YL, AM3 U CL	LF		SM F2M	GF, GW SL SA SM SH	PM5	

Note: Above charts are based on published data and not authorized by each manufacturer.

MEMO

External Toolholder



External Toolholder - Content structure

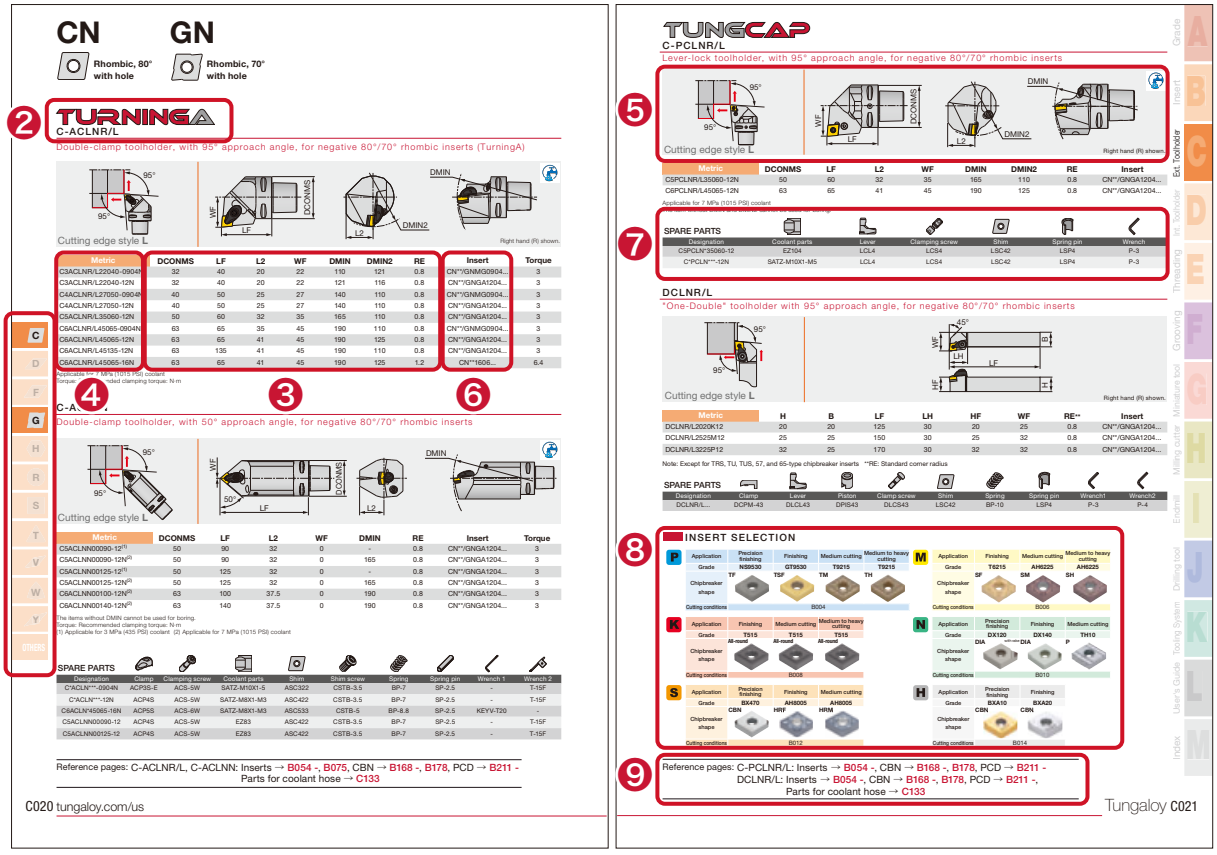
- Indexable toolholders are listed by insert shape.
- Toolholders in the catalog are our standard items.

How to use the page

Method① Select the insert shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method② Select the series name of a toolholder on **C003** and check the details on each page.

Method③ Select an item from Quick Guide on **C004 - C014**.



❶: Insert shape
❷: Series name of indexable external toolholders
❸: Dimension table
❹: Toolholder designation
e.g. right-hand, 1 inch square shank

→ **ACLN R 16 33-A**

❺: Dimension drawing (conforming to ISO13399)
❻: Applicable insert
❼: Spare parts
❽: Basic selection
❾: Reference pages

When ordering
- Please specify the designation and quantity.
  e.g. **ACLNR164-A** ... 1 (one external toolholder per package)

* Inserts are not included. Please order those separately.

Main products

		Inch	Metric
	**ADDMULTITURN** Ultimate solution for multi-directional turning C015	✓	✓
	**TURNTENFEED** Innovative tool realizing both high productivity and economy C017	✓	✓
	**ISOECOTURN** Small-sized “Eco” insert series for maximized profits C018	✓	✓
	**MINIFORCETURN** Economical double-sided inserts with excellent sharpness C057, C119 C128, C129	✓	✓
	**TURNINGA** Highly rigid clamping system with excellent repeatability C019 -	✓	✓
	**TUNGTJETURN** Toolholders for high pressure coolant supply C024 -, C036 -, C093 - C105 -, C121 -	✓	✓
	**DIMPLEFX** Ceramic insert with dimple for highly efficient cast iron machining C027, C042 -, C059 C081, C109	✓	✓
	**TURNTEC** Inserts and toolholders for roughing large depths of cut with high productivity C060, C061	✓	✓
	**Y-PRO SERIES** Inserts with 25° corner angle for profiling C103, C107, C110 C112, C130 - C132	✓	✓
	**TURNFEED** Tool series for super high-feed cutting C127	✓	✓
	**FIXRTURN** Highly productive round insert with 6 indexes C071, C074	✓	✓

External Toolholder - Quick Guide (Square shanks)

Inch

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (in) 0.750x0.750	1.000x1.000	1.250x1.250	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
ADDMULTITURN 	Front turning: 95° Back turning: 21.5°	**ATXOR/L**	6C-TOMG** 	○	○	○	✓		C102
	Front turning: 117.5° Back turning: 27.5°	**ATXOR/L**	6V-TOMG** 	○	○	○	✓		C102
	Front turning: 95° Back turning: 21.5°	**STXCR/L-CHP-MC**	3C-TCMT** 		○			✓	C100
TURNTFEED 	48.5°	**PPXOR/L**-HD**	POMG ** 		○	○	✓		C063
	22.5°	**PPXOR/L**-HF**			○	○	✓		C063
Double clamp A TURNINGA 	L 95°	**ACLNR/L**4**	CN** 43 80° GNGA 43 70°	○	○	○	✓		C019
		ACLNR/L-4-CHP-MC**		○	○			✓	C024
		ACLNR/L33**	CN** 33 80° GNMG 33 70°	○	○		✓		C019
	K 95°	**ACKNR/L**4**	CN** 43 80°		○		✓		C029
	R 75°	**ACRNR/L**4**			○		✓		C032
	L 95°	**AWLNR/L**4**	WN** 43 80°	○	○	○	✓		C121
		AWLNR/L-4-CHP-MC**		○	○			✓	C125
		AWLNR/L33**	WN** 33 80°	○	○		✓		C121
	J 93°	**ATJNR/L**3**	TN** 33 60°	○	○		✓		C088
	G 91°	**ATGNR/L**3**		○	○		✓		C091
	F 91°	**ATFNR/L**3**		○	○		✓		C094
	Q 105°	**ATQNR/L**3**		○	○		✓		C096
	J 93°	**ADJNR/L**4**	DN** 43 55° FNGA 43 45°	○	○	○	✓		C036
		ADJNR/L-4-CHP-MC**		○	○			✓	C040
		ADJNR/L33**	DN** 33 55° FNMG 33 45°	○	○		✓		C036
	P 62.5° *	**ADPNN**4**	DN** 43 55° FNGA 43 45°	○	○		✓		C049

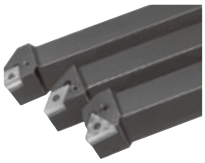
*: Tungaloy's symbol

Inch

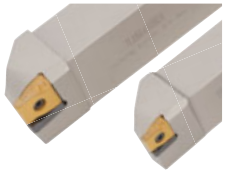
Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (in) 0.750x0.750	1.000x1.000					Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Double clamp A 	Q 107.5° 	**ADQNR/L**4**	DN** 43 55° FNGA 43 45°	○	○					✓		C045
		ADQNR/L33**	DN** 33 55° FNMG 33 45°	○	○					✓		C045
	J 93° 	**AVJNR/L**3**	VN** 33 35°	○	○					✓		C103
	V 72.5° 	**AVVNN**3**	YN** 33 25°	○	○					✓		C107
	Q 117.5° 	**AVQNR/L**3**		○	○					✓		C110
	J 93° 	**AVJNR/L**2.33**	VN** 2.33 35°	○	○					✓		C103
	V 72.5° 	**AVVNN**2.33**		○	○					✓		C107
	Q 122.5° 	**AVQNR/L**2.33**		○	○					✓		C110
	B 75° 	**ASBNR/L**4**	SN** 43 90°	○	○					✓		C085
	D 45° 	**ASDNN**4**		○	○					✓		C076
	S 45° 	**ASSNR/L**4**		○	○					✓		C078
	K 75° 	**ASKNR/L**4**		○	○					✓		C082
		**ARGNR/L**	RN**		○					✓		C065

External Toolholder - Quick Guide (Square shanks)

Inch

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (in) 0.625x0.625	0.750x0.750	1.000x1.000	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Lever lock P 	L 95° 	**PCLNR/L**4-CHP**	CN** 43 80° GNGA 43 70°		○	○		✓	C023
		PCLNR/L33**	CN** 33 80° GNMG 33 70°		○	○	✓		C022
		PCLNR/L33-CHP**			○	○		✓	C023
		PCLNR/L33-CHP-N**			○	○		✓	C025
	L 95° 	**PWLNR/L**4-CHP**	WN** 43 80°		○	○		✓	C124
		PWLNR/L33**	WN** 33 80°		○	○	✓		C123
		PWLNR/L33-CHP**			○	○		✓	C124
	G 91° 	**PTGNR/L**3-CHP**	TN** 33 60°		○	○		✓	C093
		PTGNR/L23**	TN** 23 60°		○	○	✓		C092
		PTGNR/L23-CHP**			○	○		✓	C093
	J 93° 	**PDJNR/L**4-CHP**	DN** 43 55° FNGA 43 45°		○	○		✓	C039
		PDJNR/L33**	DN** 33 55° FNMG 33 45°	○	○	○	✓		C038
		PDJNR/L33-CHP**			○	○		✓	C039
	J 93° 	**PVJNR/L**3-CHP**	VN** 33 35° YN** 33 25°		○	○		✓	C105
		PVJNR/L2.33**	VN** 2.33 35°	○			✓		C104
		PVJNR/L2.33-CHP**			○	○		✓	C105
	Q 107.5° 	**PVQNR/L**3-CHP**	VN** 33 35° YN** 33 25°		○	○		✓	C112

Inch

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (in) 0.375x0.375	0.500x0.500	0.625x0.625	0.750x0.750	1.000x1.000	1.250x1.250	1.500x1.500	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Screw-on S 	L 95°	**SCLCR/L**3**	CC** 32.5 80°			○	○	○			✓		C034
		SCLCR/L4**	CC** 43 80°				○	○			✓		C034
	L 95°	**JSWLXR/L JSWL2XR/L**	WX** 22 80°	○	○	○	○	○			✓		C128, C129
	G 91°	**STGCR/L**2**	TC** 21.5 60°	○	○						✓		C099
		STGCR/L3**	TC** 32.5 60°			○	○				✓		C099
	J 93°	**SDJCR/L**2**	DC** 21.5 55°	○	○						✓		C052
		SDJCR/L3**	DC** 32.5 55°		○	○	○	○			✓		C052
		JSDJXR/L JSDJ2XR/L	DX** 22 55°	○	○	○	○	○			✓		C057
	J 93°	**SVJCR/L**3**	VC** 33 35°			○	○	○			✓		C113
		JSVJXR/L JSVJ2XR/L	VX** 73.5 35°	○	○	○	○	○			✓		C119
	Q 117.5°	**SVQCR/L**3**	VC** 33 35°					○			✓		C116
	J 93°	**SYJBR/L**	YWMT16 25°				○	○			✓		C130
	Q 122.5°	**SYQBR/L**					○	○			✓		C131
	H 100°	**SYHBR/L**					○	○			✓		C132
	I 76.5°	**SYIBN**					○	○			✓		C131
		SRGCR/L	RCM*					○			✓		C070
		SRDCN						○			✓		C073
Double clamp for dimple ceramic insert C DIMPLEFX 	L 45°	**CCLNR/L-RD**	CNGD 80°					○			✓		C027
	S 45°	**CSSNR/L-RD**	SNGD 90°					○			✓		C081
	S 45°	**CHSNR/L-RD**	HNGD 90°					○			✓		C059
TURNTEC 	A 93°	**TLANR/L-16**	LNMX16 				○	○	○	○	✓		C060
	F 93°	**TLFNR/L-16**	LNMX16 					○	○		✓		C061
	B 75°	**TLBNR/L-24**	LNMX24 							○	✓		C061

External Toolholder - Quick Guide (Square shanks)

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (mm) 20x20	25x25	32x25	32x32	40x40	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
ADDMULTITURN 	Front turning: 95° Back turning: 21.5°	**ATXOR/L**	6C-TOMG** 	○	○		○		✓		C102
	Front turning: 117.5° Back turning: 27.5°	**ATXOR/L**	6V-TOMG** 	○	○		○		✓		C102
	Front turning: 95° Back turning: 21.5°	**STXCR/L-CHP-MC**	3C-TCMT** 		○					✓	C100
TURNTFEED 	48.5°	**PPXOR/L**-HD**	POMG** 		○		○		✓		C063
	22.5°	**PPXOR/L**-HF**			○		○		✓		C063
Double clamp A TURNINGA 	L 95°	**ACLNR/L**12**	CN**12 80°	○	○	○			✓		C019
		ACLNR/L12-CHP-MC**	GNGA12 70°	○	○					✓	C024
		ACLNR/L0904**	CN**09 80° GNMG09 70°	○	○				✓		C019
	L 95°	**AWLNR/L**08**	WN**08 80°	○	○	○			✓		C121
		AWLNR/L08-CHP-MC**		○	○					✓	C125
		AWLNR/L06**	WN**06 80°	○	○				✓		C121
	J 93°	**ATJNR/L**16**	TN**16 60°	○	○				✓		C088
	G 91°	**ATGNR/L**16**		○	○				✓		C091
	F 91°	**ATFNR/L**16**		○	○				✓		C094
	Q 105°	**ATQNR/L**16**		○	○				✓		C096
	J 93°	**ADJNR/L**15**	DN**15 55° FNGA15 45°	○	○	○			✓		C036
		ADJNR/L15-CHP-MC**		○	○					✓	C040
		ADJNR/L1104**	DN**11 55° FNMG11 45°	○	○				✓		C036
	P 62.5° *	**ADPNN**15**	DN**15 55° FNGA15 45°	○	○				✓		C049
	Q 107.5°	**ADQNR/L**15**		○	○				✓		C045
		ADQNR/L11**	DN**11 55° FNMG11 45°	○	○				✓		C045

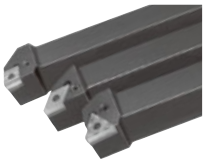
*: Tungaloy's symbol

Metric

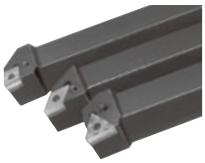
Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (mm) 20x20	25x25	32x25	32x32	40x40	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Double clamp A 	J 93°	**AVJNR/L**16**	VN**16 35°	○	○				✓		C103
	V 72.5°	**AVVNN**16**		○	○				✓		C107
	Q 117.5°	**AVQNR/L**16**	YN**16 25°	○	○				✓		C110
	J 93°	**AVJNR/L**1204**	VN**1204 35°	○	○				✓		C103
	V 72.5°	**AVVNN**1204**		○	○				✓		C107
	Q 122.5°	**AVQNR/L**1204**		○	○				✓		C110
	B 75°	**ASBNR/L12**	SN**12 90°	○	○				✓		C085
	D 45°	**ASDNN12**		○	○				✓		C076
	S 45°	**ASSNR/L12**		○	○				✓		C078
	K 75°	**ASKNR/L12**		○	○				✓		C082
		ARGNR/L	RN**		○				✓		C065
One Double D 	L 95°	**DCLNR/L12**	CN**12 80° GNGA12 70°	○	○	○			✓		C021
	L 95°	**DWLNR/L08**	WN**08 80°	○	○	○			✓		C122
	J 93°	**DDJNR/L15**	DN**15 55° FNGA15 45°	○	○	○			✓		C037
	Q 105°	**DDQNR/L15**		○	○	○			✓		C046
	G 91°	**DTGNR/L16**	TN**16 60°	○	○				✓		C092
	F 91°	**DTFNR/L16**		○	○				✓		C094
	B 75°	**DSBNR/L12**	SN**12 90°	○	○				✓		C086
	D 45°	**DSDNN12**		○	○				✓		C076
	S 45°	**DSSNR/L12**		○	○				✓		C079
	K 75°	**DSKNR/L12**		○	○				✓		C082
		DRGNR/L12	RN**		○				✓		C066

External Toolholder - Quick Guide (Square shanks)

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (mm) 16x16	20x20	25x25	32x25	32x32		Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Lever lock P 	L 95° 	**PCLNR/L**12** **PCL2NR**12**	CN**12 80°	○	○	○	○			✓		C022
		PCLNR/L12-CHP** **PCLNR/L**12-CHP-MC**	GNGA12 70°		○	○					✓	C023, C024
		PCLNR/L0904**	CN**09 80°		○	○				✓		C022
		PCLNR/L09-CHP-MC**	GNMG09 70°		○						✓	C024
		PCLNR/L09-CHP-N**			○	○					✓	C025
	B 75° 	**PCBNR/L**12**	CN**12 80°			○				✓		C031
	F 91° 	**PCFNR/L**	CN**12 80° GNGA12 70°		○	○				✓		C030
	L 95° 	**PWLNR/L**08-CHP** **PWLNR/L**08-CHP-MC**	WN**08 80°		○	○					✓	C124, C125
		PWLNR/L0604**	WN**06 80°		○	○				✓		C123
		PWLNR/L0604-CHP**			○	○					✓	C124
	L 95° 	**PTL2NR/L**16**	TN**16 60°		○					✓		C088
	J 93° 	**PTJNR/L**1104**	TN**11 60°			○				✓		C089
	G 91° 	**PTGNR/L**16**	TN**16 60°	○	○	○				✓		C092
		PTGNR/L16-CHP**			○	○					✓	C093
		PTGNR/L1104**	TN**11 60°		○	○				✓		C092
		PTGNR/L1104-CHP**			○	○					✓	C093
	F 91° 	**PTFNR/L**16**	TN**16 60°	○	○	○				✓		C095
		PTFNR/L1104**	TN**11 60°		○	○				✓		C095

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (mm) 16x16	20x20	25x25	32x25	32x32		Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Lever lock P 	J 93° 	**PDJNR/L**15**	DN**15 55° / FNGA15 45°		○	○	○			✓		C038
		PDJNR/L15-CHP**			○	○					✓	C039
		PDJNR/L1104**	DN**11 55° / FNMG11 45°	○	○	○				✓		C038
		**PDJNR/L**1104-CHP**			○	○					✓	C039
	P 62.5° * 	**PDPNN**15**	DN**15 55° / FNGA15 45°			○				✓		C050
	Q 107.5° 	**PDQNR/L15**				○				✓		C047
	J 93° 	**PVJNR/L**16-CHP**	VN**16 35° / YN**16 25°		○	○					✓	C105
		PVJNR/L1204**	VN**12 35°	○	○	○				✓		C104
		**PVJNR/L**1204-CHP**			○	○					✓	C105
	Q 107.5° 	**PVQNR/L**1204**	VN**12 35°		○	○				✓		C111
		**PVQNR/L**16-CHP**	VN**16 35° / YN**16 25°		○	○					✓	C112
	V 72.5° 	**PVVNN**1204**	VN**12 35°		○	○				✓		C108
	B 75° 	**PSBNR/L12**	SN**12 90°		○	○				✓		C086
	D 45° 	**PSDNN12**			○	○				✓		C077
	S 45° 	**PSSNR/L12**			○	○	○			✓		C080
	K 75° 	**PSKNR/L12**			○	○				✓		C083
		**PRGNR/L**	RN**		○	○				✓		C066
		PRGCR/L	RCM*12			○	○	○		✓		C069
		PRDCN12				○	○			✓		C072

*: Tungaloy's symbol

External Toolholder - Quick Guide (Square shanks)

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Sizes of square shanks (mm) 10x10	16x16	20x20	25x25	32x25	32x32	40x40	Coolant supply: External supply	Coolant supply: TUNGTJET (Through-coolant)	Page
Screw-on S 	L 95°	**SCLCR/L**	CC**12 80°			○					✓		C034
	L 95°	**JSWLXR/L JSWL2XR/L**	WX**04 80°	○	○	○	○				✓		C128, C129
	A 91°	**STACR/L**	TC**16 60°		○						✓		C098
	J 93°	**SDJCR/L11**	DC**11 55°		○	○	○				✓		C052
		JSDJXR/L JSDJ2XR/L	DX**07 55°	○	○	○	○				✓		C057
	N 62.5°	**SDNCN11**	DC**11 55°		○	○	○				✓		C054
	Q 107.5°	**SDQCR/L11**				○	○				✓		C054
	J 93°	**SVJCR/L**	VC**16 35°		○	○	○				✓		C113
		JSVJXR/L JSVJ2XR/L	VX**09 35°	○	○	○	○				✓		C119
	V 72.5°	**SVVCN**	VC**16 35°			○	○				✓		C115
	Q 117.5°	**SVQCR/L**				○	○				✓		C116
	J 93°	**SYJBR/L16**	YWMT16 25°			○	○				✓		C130
	Q 122.5°	**SYQBR/L16**				○	○				✓		C131
	H 100°	**SYHBR/L16**				○	○				✓		C132
	I 76.5°	**SYIBN16**				○	○				✓		C131
		SRACR/L	RCM*	○			○				✓		C068
		SRGCR/L		○			○				✓		C070, C071
		SRDCN				○	○				✓		C073, C074
Double clamp for dimple ceramic insert C DIMPLEFX 	L 45°	**CCLNR/L-RD**	CNGD 80°				○	○			✓		C027
	J 93°	**CDJNR/L-RD**	DNGD 55°				○	○			✓		C042
	N 63°	**CDNNN-RD**					○				✓		C044
	V72.5°	**CVVNN-RD**	VNGD 35°				○				✓		C109
	S 45°	**CSSNR/L-RD**	SNGD 90°				○				✓		C081
	S 45°	**CHSNR/L-RD**	HNGD 90°				○				✓		C059
TURNTEC 	A 93°	**TLANR/L6**	LNMX16			○	○		○	○	✓		C060
	F 93°	**TLFNR/L16**	LNMX16				○		○		✓		C061
	B 75°	**TLBNR/L24**	LNMX24							○	✓		C061

External Toolholder - Quick Guide

TUNGCAP

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Size C3	Size C4	Size C5	Size C6	Coolant supply: Through-coolant	Coolant supply: TUNGTJET (Through-coolant)	Page
ADDYTURN AXIS 	E	**C6STECN-Y-CHP**	3C-TCMT** 				○	✓		C101
	N	**C6SDNCN-Y-CHP**	2D-DCMT** 				○	✓		C056
Double clamp A	L 95°	**C*ACLNR/L12**	CN**12 80° GNGA12 70°	○	○	○	○	✓		C020
	L 95°	**C*ACLNN12**				○	○	✓		C020
	M	**C6ACMNN0904**	CN**09 80° GNMG09 70°				○	✓		C032
	L 95°	**C*ACLNR/L**0904**		○	○		○	✓		C020
Lever lock P	L 95°	**C*PCLNR/L12**	CN**12 80° GNGA12 70°			○	○	✓		C021
		C*PCLNR/L12-CHP**			○	○	○		✓	C026
	M	**C6PCMNN**12-CHP**					○		✓	C033
	L 95°	**C*PCLNR/L**0904-CHP**	CN**09 80° GNMG09 70°		○		○		✓	C026
Double clamp A	L 95°	**C*AWLNR/L08**	WN**08 80°		○		○	✓		C122
		C*AWLNR/L06	WN**06 80°		○			✓		C122
Lever lock P	L 95°	**C*PWLNR/L**08-CHP**	WN**08 80°		○		○		✓	C126
		C*PWLNR/L06-CHP**	WN**06 80°		○				✓	C126

Metric

Brand name / Clamp system	Approach angle (Cutting edge style)	Designation	Inserts	Size C3	Size C4	Size C5	Size C6	Coolant supply: Through-coolant	Coolant supply: TUNGTJET (Through-coolant)	Page
Double clamp A	J 93°	**C*ADJNR/L15**	DN**15 55°		○	○	○	✓		C036
	N 62.5°	**C*ADNNN15**				○	○	✓		C043
	Q 107.5°	**C*ADQNR/L15**	FNGA15 45°	○	○			✓		C046
	U 93°	**C*ADUNR/L**			○			✓		C051
	J 93°	**C*ADJNR/L1104**	DN**11 55° FNMG11 45°	○	○		○	✓		C036
Lever lock P	J 93°	**C*PDJNR/L15**	DN**15 55°			○	○	✓		C040
		C*PDJNR/L15-CHP**	FNGA15 45°		○	○	○		✓	C041
		C*PDJNR/L1104-CHP**	DN**11 55°		○		○		✓	C041
	M	**C6PDMNL1104-CHP**	FNMG11 45°				○		✓	C048
Screw-on S	J 93°	**C*SDJCR/L-CHP**	DC**11 55°	○					✓	C053
Double clamp A	J 93°	**C4ATJNR/L**	TN**16 60°		○			✓		C089
Lever lock P	J 93°	**C4PTJNR/L**			○			✓		C090
Double clamp A	J 93°	**C*AVJNR/L12**	VN**12 35°		○		○	✓		C104
	Q 117.5°	**C*AVQNR/L16**	VN**16 35° YN**16 25°		○			✓		C110
Lever lock P	J 93°	**C*PVJNR/L**-CHP**	VN**16 35° YN**16 25°		○		○		✓	C106
		C*PVJNR/L1204-CHP**	VN**12 35°		○		○		✓	C106
Screw-on S	J 93°	**C*SVJCR/L**	VC**16 35°			○	○	✓		C114
	V 72.5°	**C*SVVCN**				○	○	✓		C114

ADDMULTI TURN



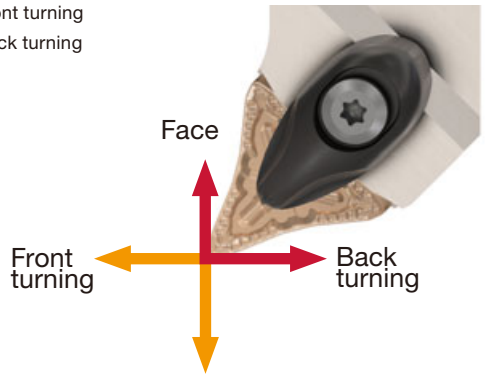
Ultra high productivity of Front Turning, Back Turning, Profiling, and Face Turning with **ONE SINGLE TOOL**

Double-sided 6-corner insert with 80° or 35° corner angle for versatile applications

- Back (pull) turning: High feed designed cutting edge improves productivity about 200% higher than existing ISO tools with no need for special programming.
- Front (push) turning: Same machining process is available using the same cutting edge angle as standard ISO tools.

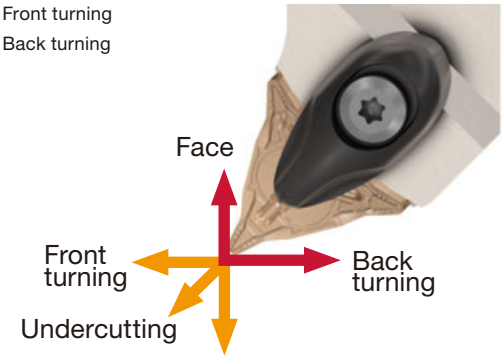
6C-TOMG

Front turning
Back turning



6V-TOMG

Front turning
Back turning

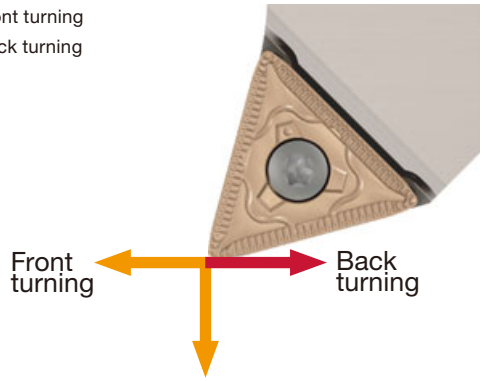


Single-sided 3-corner insert for super high productivity

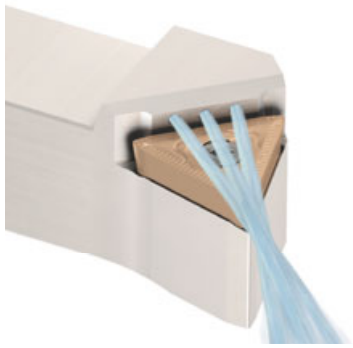
- Back (pull) turning: High feed designed cutting edge improves productivity 300 - 400% higher than standard ISO tools.
- Front (push) turning: Applicable to great D.O.C.

3C-TCMT

Front turning
Back turning



Internal coolant toolholder prevents chip jamming and maximizes performance during back turning operations



Reference pages: C100, C102

ADDY AXIS TURN

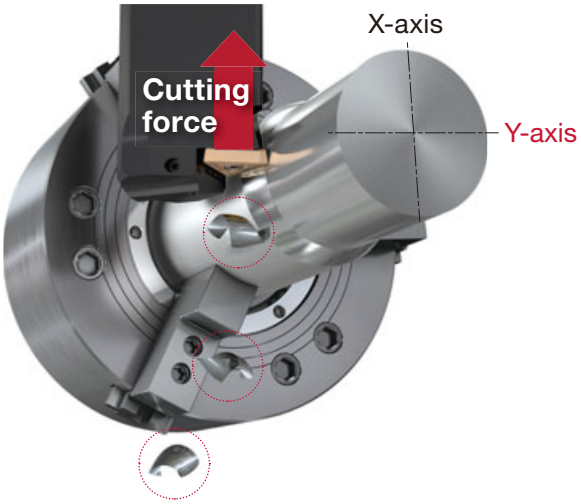


LEADING IN THE NEW DIRECTION

Y-axis turning tool with PSC connection for multitasking machines

■ Y-axis machining benefits

- The cutting force vector is directed in the longitudinal axis of the tool, resulting in higher stability and minimized vibration
- No chip entanglements, chips are directed down and away from the workpiece and toolholder



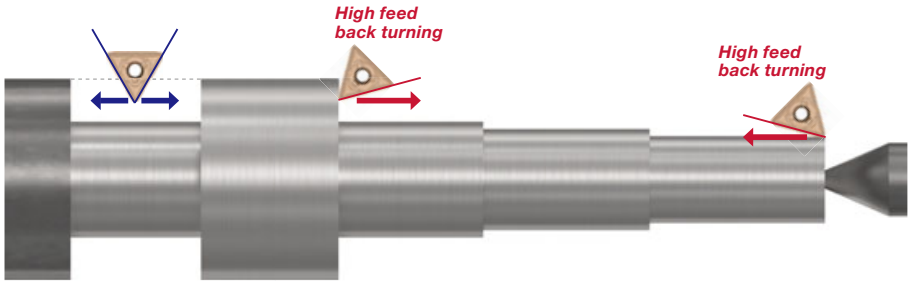
■ Tooling image of Y-axis orientation and applying high feed back turning

Medium cutting



3C-TCMT

Insert: 3C-TCMT29X608-TM
(Single-sided, 3 corners)



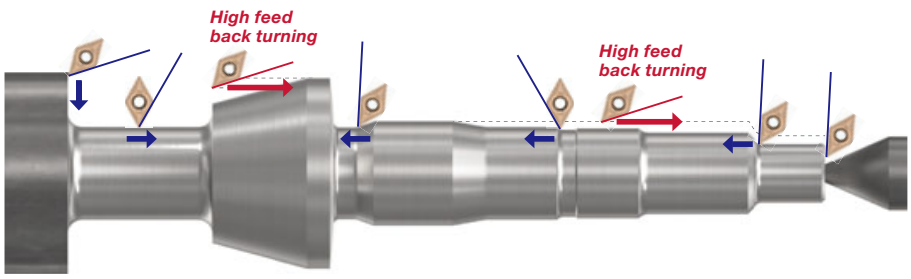
- Thanks to its high-feed geometry, **AddY-axisTurn** insert provides high productivity
- Y-axis tool orientation allows both sides of the cutting edge to be used, providing stable and long tool life

Finishing - Profiling



2D-DCMT

Insert: 2D-DCMT13T404-ZF
(Single-sided, 2 corners)

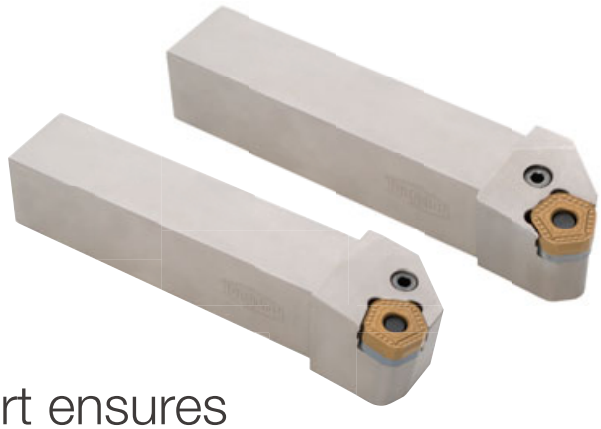


- **AddY-axisTurn** allows a precision workpiece completion with a single tool setup
- No interference with the tailstock
- Eliminates chip entanglement, promoting fully automated manufacturing

Reference pages: C056, C101

TURN TEN FEED



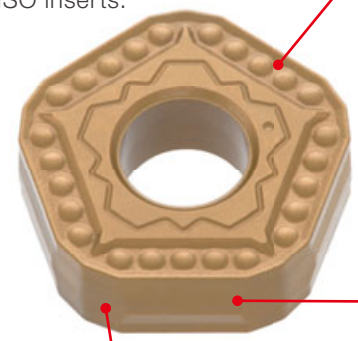


Economical, 10-cornered insert ensures **high machining efficiency**

- Available in 2 types of holders: HD type for large depths of cut and HF type for high feed turning
- Maximum 0.276" depth of cut, or maximum 0.079" feed per rev is attainable!

Economical 10-cornered, double-sided, M-class insert

Achieves outstanding cost efficiency over standard ISO inserts.

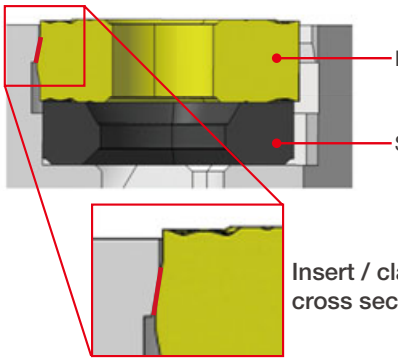


New – MNW style chipbreaker

Features protrusions on the rake face to facilitate smooth chip control, while achieving high crater wear resistance.

Dovetail clamping

Ensures secure insert retention while promoting smooth chip flow thanks to the integration of lever lock and dovetail clamping methods.



Insert / clamp contact cross section

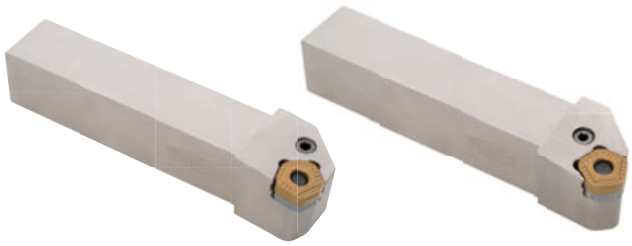
Flat Wiper

Built in the cutting edge to achieve superior machining surface at higher feed rates!

Holder selections

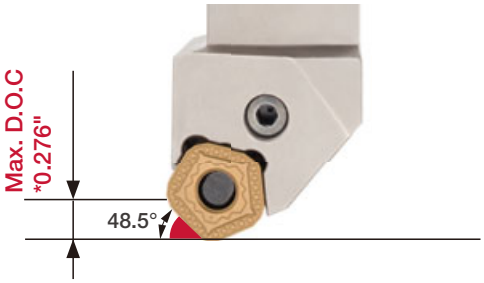
Available in 2 types:
- HD holder for large depths of cut
- HF holder for high feed turning

Inserts are interchangeable between these two holders.

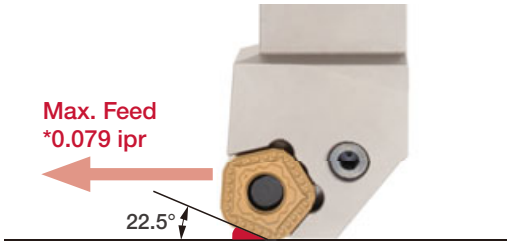


Features of Holders

HD holder
For High Depth of Cut



HF holder
For High Feed



*Insert: POMG 643 MNW

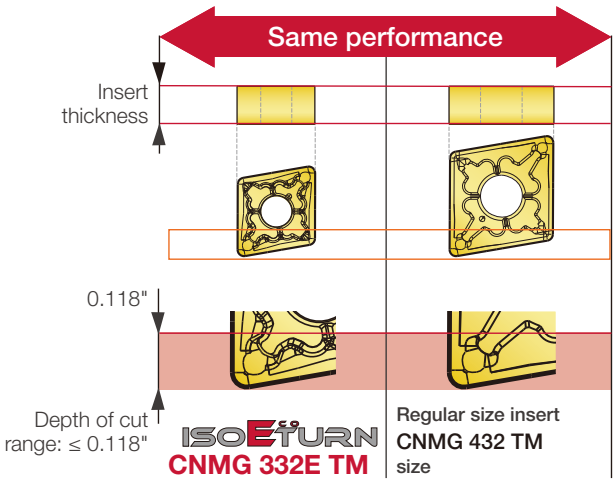
Reference pages: C063

ISO-EcoTurn Small size inserts, for an economical advantage



Uncompromising insert performance

Comparison of ISO-EcoTurn and regular size inserts

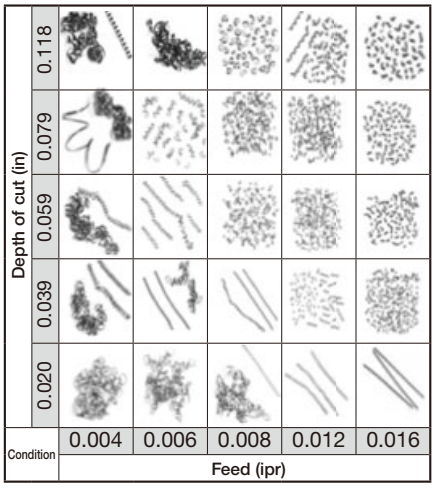


ISO-EcoTurn inserts feature the identical thickness and chipbreaker geometry as Tungaloy's regular size inserts.
These properties provide cutting performance equal to that of the regular size inserts, including chip control at a depth of cut up to 0.118".

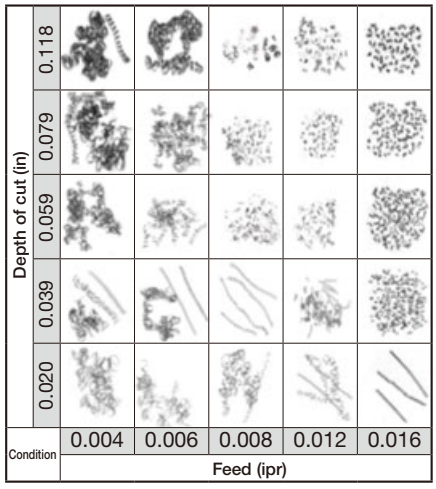
Chip control

ISO-EcoTurn inserts incorporate an identical chipbreaker geometry as regular size inserts providing the same chip removal at a depth of cut up to 0.118".

ISO-EcoTurn
CNMG 332E TM



Regular size
CNMG 432 TM



Workpiece : 1045
Cutting speed : *Vc* = 660 sfm
Coolant : Wet

Reference pages: C019 -, C036 -, C089 -, C103 -, C121 -

CN GN

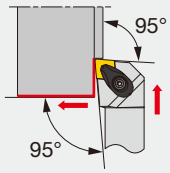
Rhombic, 80° with hole

Rhombic, 70° with hole

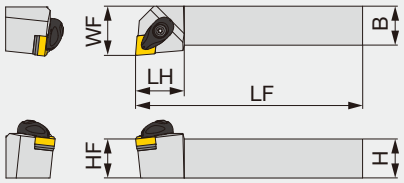
TURNING A

ACLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACLNR/L1233-A	0.750	0.750	4.500	0.900	0.750	1.000	0.031	CN**/GNMG 33...	2.2
ACLNR/L124-A	0.750	0.750	4.500	1.000	0.750	1.000	0.031	CN**/GNGA 43...	2.2
ACLNR/L1633-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	CN**/GNMG 33...	2.2
ACLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	CN**/GNGA 43...	2.2
ACLNR/L204-A	1.250	1.250	7.000	1.500	1.250	1.500	0.031	CN**/GNGA 43...	2.2
ACLNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.500	0.047	CN** 54...	4.7
ACLNR/L206-A	1.250	1.250	7.000	1.500	1.250	1.500	0.047	CN** 64...	4.7
ACLNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.750	0.047	CN** 54...	4.7
ACLNR/L246-A	1.500	1.500	8.000	1.500	1.500	1.750	0.047	CN** 64...	4.7

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020K0904-A	20	20	125	25	20	25	0.8	CN**/GNMG0904...	3
ACLNR/L2020H12-A	20	20	100	26	20	25	0.8	CN**/GNGA1204...	3
ACLNR/L2020K12-A	20	20	125	26	20	25	0.8	CN**/GNGA1204...	3
ACLNR/L2525M0904-A	25	25	150	25	25	32	0.8	CN**/GNMG0904...	3
ACLNR/L2525K12-A	25	25	125	30	25	32	0.8	CN**/GNGA1204...	3
ACLNR/L2525M12-A	25	25	150	30	25	32	0.8	CN**/GNGA1204...	3
ACLNR/L2525M16-A	25	25	150	31	25	32	1.2	CN**1606...	6.4
ACLNR/L3225P12-A	32	25	170	30	32	32	0.8	CN**/GNGA1204...	3
ACLNR/L3225P16-A	32	25	170	31	32	32	1.2	CN**1606...	6.4
ACLNR/L3232P16-A	32	32	170	31	32	40	1.2	CN**1606...	6.4
ACLNR/L3232P19-A	32	32	170	40	32	40	1.2	CN**1906...	6.4
ACLNR/L4040S19-A	40	40	250	40	40	50	1.2	CN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench1	Wrench2
ACLNR/L**33-A, ACLNR/L**0904-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F	-
ACLNR/L**4-A, ACLNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F	-
ACLNR/L**5-A, ACLNR/L**16-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASC533	CSTB-5	-	KEYV-T20
ACLNR/L**6-A, ACLNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASC634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: ACLNR/L: Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -

CN



Rhombic, 80° with hole

GN

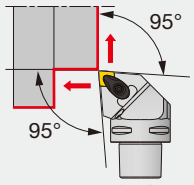


Rhombic, 70° with hole

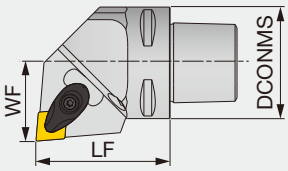
TURNINGA

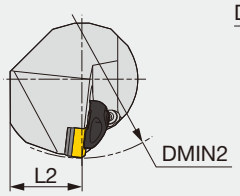
C-ACLNR/L

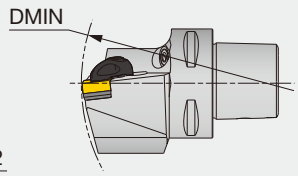
Double-clamp toolholder, with 95° approach angle, for negative 80°/70° rhombic inserts (TurningA)



Cutting edge style **L**







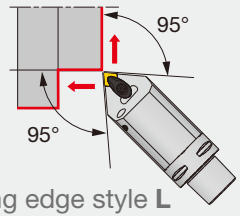
Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert	Torque
C3ACLNR/L22040-0904N	32	40	20	22	110	121	0.8	CN**/GNMG0904...	3
C3ACLNR/L22040-12N	32	40	20	22	121	116	0.8	CN**/GNGA1204...	3
C4ACLNR/L27050-0904N	40	50	25	27	140	110	0.8	CN**/GNMG0904...	3
C4ACLNR/L27050-12N	40	50	25	27	140	110	0.8	CN**/GNGA1204...	3
C5ACLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**/GNGA1204...	3
C6ACLNR/L45065-0904N	63	65	35	45	190	110	0.8	CN**/GNMG0904...	3
C6ACLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**/GNGA1204...	3
C6ACLNR/L45135-12N	63	135	41	45	190	110	0.8	CN**/GNGA1204...	3
C6ACLNR/L45065-16N	63	65	41	45	190	125	1.2	CN**1606...	6.4

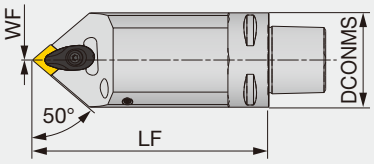
Applicable for 7 MPa (1015 PSI) coolant
Torque: Recommended clamping torque: N·m

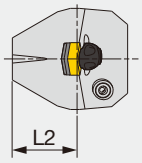
C-ACLNN

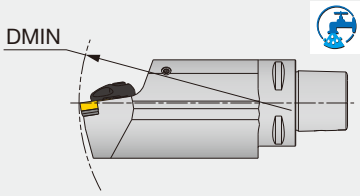
Double-clamp toolholder, with 50° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**







Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert	Torque
C5ACLNN00090-12(1)	50	90	32	0	-	0.8	CN**/GNGA1204...	3
C5ACLNN00090-12N(2)	50	90	32	0	165	0.8	CN**/GNGA1204...	3
C5ACLNN00125-12(1)	50	125	32	0	-	0.8	CN**/GNGA1204...	3
C5ACLNN00125-12N(2)	50	125	32	0	165	0.8	CN**/GNGA1204...	3
C6ACLNN00100-12N(2)	63	100	37.5	0	190	0.8	CN**/GNGA1204...	3
C6ACLNN00140-12N(2)	63	140	37.5	0	190	0.8	CN**/GNGA1204...	3

The items without DMIN cannot be used for boring.
Torque: Recommended clamping torque: N·m
(1) Applicable for 3 MPa (435 PSI) coolant (2) Applicable for 7 MPa (1015 PSI) coolant

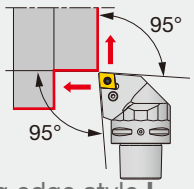
SPARE PARTS

Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C*ACLN***-0904N	ACP3S-E	ACS-5W	SATZ-M10X1-5	ASC322	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C*ACLN***-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C6ACLN*45065-16N	ACP5S	ACS-6W	SATZ-M8X1-M3	ASC533	CSTB-5	BP-8.8	SP-2.5	KEYV-T20	-
C5ACLNN00090-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C5ACLNN00125-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F

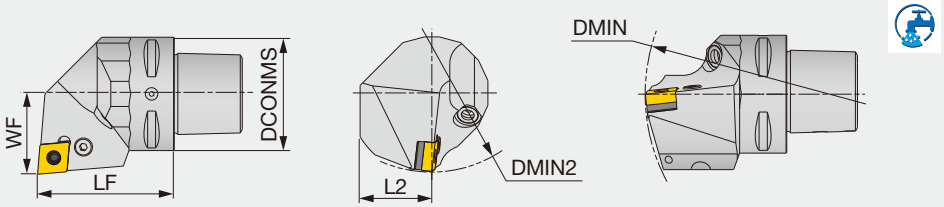
Reference pages: C-ACLNR/L, C-ACLNN: Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -
Parts for coolant hose → C133

C-PCLNR/L

Lever-lock toolholder, with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PCLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**/GNGA1204...
C6PCLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**/GNGA1204...

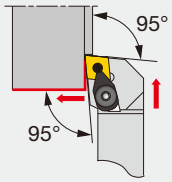
Applicable for 7 MPa (1015 PSI) coolant
The item without DMIN and DMIN2 cannot be used for boring.

SPARE PARTS

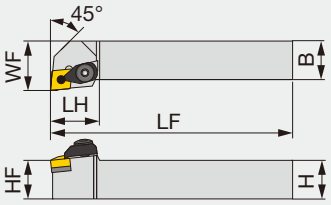
Designation	Coolant parts	Lever	Clamping screw	Shim	Spring pin	Wrench
C5PCLN*35060-12	EZ104	LCL4	LCS4	LSC42	LSP4	P-3
C*PCLN***-12N	SATZ-M10X1-M5	LCL4	LCS4	LSC42	LSP4	P-3

DCLNR/L

"One-Double" toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DCLNR/L2020K12	20	20	125	30	20	25	0.8	CN**/GNGA1204...
DCLNR/L2525M12	25	25	150	30	25	32	0.8	CN**/GNGA1204...
DCLNR/L3225P12	32	25	170	30	32	32	0.8	CN**/GNGA1204...

Note: Except for TRS, TU, TUS, 57, and 65-type chipbreaker inserts **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DCLNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSC42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: C-PCLNR/L: Inserts → B054 -, CBN → B168 -, B178, PCD → B211 -
DCLNR/L: Inserts → B054 -, CBN → B168 -, B178, PCD → B211 -,
Parts for coolant hose → C133

CN



Rhombic, 80° with hole

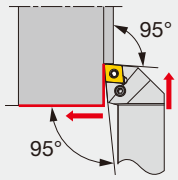
GN



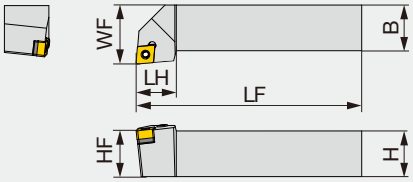
Rhombic, 70° with hole

PCLNR/L

Lever-lock toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L1233	0.750	0.750	4.500	0.813	0.750	1.000	0.031	CN**/GNMG 33...	1.5
PCLNR/L1633	1.000	1.000	6.000	0.813	1.000	1.250	0.031	CN**/GNMG 33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L1616H09	16	16	100	20	16	20	0.8	CN**0903...	2
PCLNR/L1616	16	16	100	26	16	20	0.8	CN**/GNGA1204...	3
PCLNR/L1616H12E	16	16	100	26	16	20	0.8	CN**/GNGA1204...	3
PCLNR/L2020K09	20	20	125	20	20	25	0.8	CN**0903...	2
PCLNR/L2020K0904	20	20	125	20	20	25	0.8	CN**/GNMG0904...	2
PCLNR/L2020	20	20	125	28	20	25	0.8	CN**/GNGA1204...	3
PCLNR/L2020K12E	20	20	125	28	20	25	0.8	CN**/GNGA1204...	3
PCLNR/L2525M09	25	25	150	20	25	32	0.8	CN**0903...	2
PCLNR/L2525M0904	25	25	150	25	25	32	0.8	CN**/GNMG0904...	2
PCLNR/L2525M4	25	25	150	28	25	32	0.8	CN**/GNGA1204...	3
PCLNR/L2525M12E	25	25	150	28	25	32	0.8	CN**/GNGA1204...	3
PCLNR/L2525M16E	25	25	150	31	25	25	1.2	CN**1606...	3
PCLNR/L3225P4	32	25	170	28	32	32	0.8	CN**/GNGA1204...	3
PCLNR/L3232	32	32	170	40	32	40	1.2	CN**1906...	5
PCLNR/L3225P12E	32	25	170	28	32	32	0.8	CN**/GNGA1204...	3
PCLNR/L3225P16E	32	25	150	31	32	32	1.2	CN**1606...	3
PCLNR3232P16E	32	32	170	31	32	40	1.2	CN**1606...	3
PCLNR/L3232P19E	32	32	170	40	32	40	1.2	CN**1906...	5

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

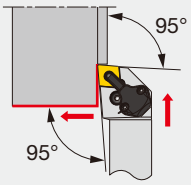
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**33	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L**09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L1616	LSC42	LCS4CA	P-3	LSP4	LCL4
PCLNR/L1616H12E	ELSC42	LCS4CA	P-3	LSP4S	LCL43S
PCLNR/L**0904	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L2020	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L2020K12E, **2525M12E, **3225P12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L2525M4, **3225P4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L**16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3232	LSC63	LCS6	P-4	LSP6	LCL6
PCLNR/L3232P19E	ELSC63	LCS6	P-4	LSP6	LCL6

Reference pages: PCLNR/L: Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -

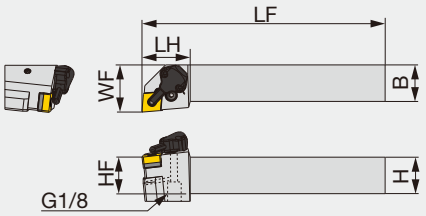
PCLNR/L-CHP

Tube connection

Lever lock toolholders – 95° approach angle.
For negative 80°/70° rhombic insert. High-pressure coolant capability.



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L1233-CHP	0.750	0.750	4.500	1.300	0.750	1.250	0.031	CN**/GNMG 33...	1.48
PCLNR/L124-CHP	0.750	0.750	4.500	1.300	0.750	1.250	0.031	CN**/GNGA 43...	2.21
PCLNR/L1633-CHP	1.000	1.000	6.000	1.300	1.000	1.250	0.031	CN**/GNMG 33...	1.48
PCLNR/L164-CHP	1.000	1.000	6.000	1.300	1.000	1.250	0.031	CN**/GNGA 43...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904-CHP	20	20	125	33	20	32	0.8	CN**/GNMG0904...	2
PCLNR/L2020K12-CHP	20	20	125	33	20	32	0.8	CN**/GNGA1204...	3
PCLNR/L2525M0904-CHP	25	25	150	33	25	32	0.8	CN**/GNMG0904...	2
PCLNR/L2525M12-CHP	25	25	150	33	25	32	0.8	CN**/GNGA1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PCLNR/L**33-CHP, PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L**4-CHP, PCLNR/L**12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PCLNR/L**33-CHP, PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PCLNR/L**4-CHP, PCLNR/L**12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PCLNR/L-CHP: Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -
Parts for coolant hose → C133

CN



Rhombic, 80° with hole

GN

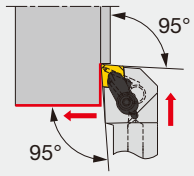


Rhombic, 70° with hole

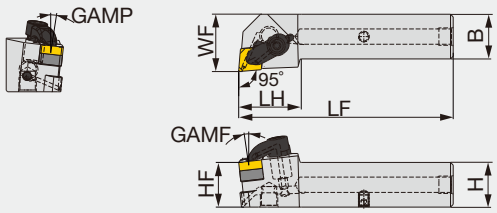
ACLNR/L-CHP-MC

Direct connection | Tube connection

Double clamping tool holders-95°approach angle
For negative 80°/70° rhombic insert. High-pressure coolant capability with tube and direct connections



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque
ACLNR/L12-4-CHP-MC	0.750	0.750	4.500	1.378	0.750	1.000	6°	6°	CN**/GNGA 43...	2.95
ACLNR/L16-4-CHP-MC	1.000	1.000	6.000	1.378	1.000	1.250	6°	6°	CN**/GNGA 43...	2.95

Metric	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque*
ACLNR/L2020X-12-CHP-MC	20	20	105	35	20	25	6°	6°	CN**/GNGA1204...	4
ACLNR/L2525X-12-CHP-MC	25	25	120	35	25	32	6°	6°	CN**/GNGA1204...	4

Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 14 MPa (2031 PSI) pressure coolant

SPARE PARTS

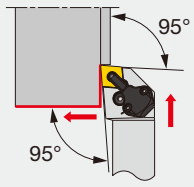


Designation	Clamp set	Shim	Shim screw	screw for tube connection	Coolant plug	O-ring	Wrench
ACLNL...	LCGL-4JCSET	RCT443	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20
ACLNR...	LCGR-4JCSET	RCT443	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20

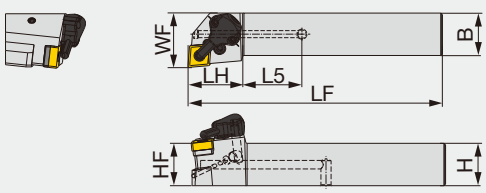
PCLNR/L2020X-CHP-MC

Direct connection

Lever lock toolholders – 95° approach angle.
For negative 80°/70° rhombic insert. High-pressure coolant capability with bottom direct connection



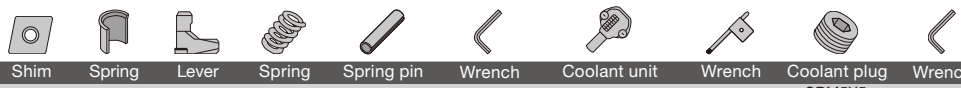
Cutting edge style **L**



Metric	H	B	LF	LH	HF	L5	WF	Insert	Torque
PCLNR/L2020X09-CHP-MC	20	20	97	27	20	29	25	CN**/GNMG0904...	2
PCLNR/L2020X12-CHP-MC	20	20	97	27	25	29	25	CN**/GNGA1204...	3

Torque: Recommended clamping torque: N·m

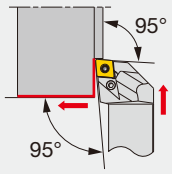
SPARE PARTS



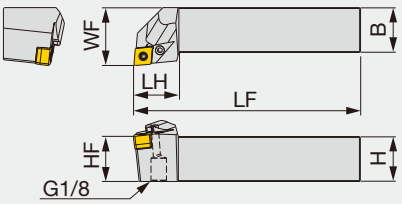
Designation	Shim	Spring	Lever	Spring	Spring pin	Wrench	Coolant unit	Wrench	Coolant plug	Wrench
PCLNR/L2020X09-CHP-MC	TCN323	SP3	LR3	SR117-2014	PN3-4	HW2.5	CU-CW-CHP	T-8/5	SRM5X5 DIN913TL360	-
PCLNR/L2020X12-CHP-MC	TCN443	SP4	LR4DH	SR117-2010	PN3-4L	HW2.5	CU-CW-CHP	T-8/5	SRM5X5 DIN913TL360	HW3.0

Reference pages: ACLNR/L-CHP-MC, PCLNR/L2020X-CHP-MC:
Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -, Parts for coolant hose → C133

Lever-lock toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Air hole	Insert	Torque
PCLNR/L1233-CHP-N	0.750	0.750	4.000	1.300	0.750	1.250	0.031	With	CN**/GNMG 33...	1.48
PCLNR/L1633-CHP-N	1.000	1.000	5.000	1.300	1.000	1.250	0.031	With	CN**/GNMG 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Air hole	Insert	Torque*
PCLNR/L2020H0904-CHP-N	20	20	100	25	20	25	0.8	With	CN**/GNMG0904...	2
PCLNR/L2525K0904-CHP-N	25	25	125	25	25	32	0.8	With	CN**/GNMG0904...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: The holder measurements are true with this insert radius
Applicable for 14 MPa (2031 PSI) pressure coolant

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**33-CHP-N, PCLNR/L**0904-CHP-N	LSC317	LCS3	P-2.5	LSP3	LCL33

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PCLNR/L-CHP-N: Inserts → B054 -, B075
Parts for coolant hose → C133

CN



Rhombic, 80° with hole

GN

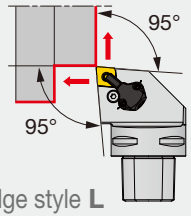


Rhombic, 70° with hole

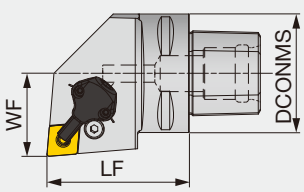
TUNGCAP

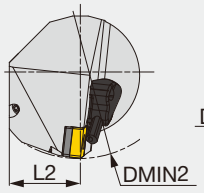
C-PCLNR/L-CHP

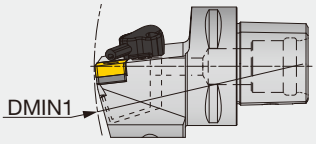
Lever lock toolholders with TungCap connection – 95° approach angle.
For negative 80°/70° rhombic insert. High-pressure coolant capability.



Cutting edge style **L**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN1	DMIN2	RE**	Insert	Torque
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**/GNMG0904...	2
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**/GNGA1204...	3
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN**/GNGA1204...	3
C6PCLNR/L45065-0904-CHP	63	65	41	45	195	125	0.8	CN**/GNMG0904...	2
C6PCLNR/L45065-12-CHP	63	65	41	45	195	125	0.8	CN**/GNGA1204...	3

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33
C*PCLNR/L**-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N
C*PCLNR/L**-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

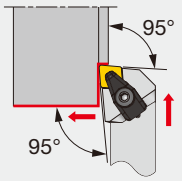
Reference pages: C-PCLNR/L-CHP: Inserts → B054 -, B075, CBN → B168 -, B178, PCD → B211 -
Parts for coolant hose → C133

CN

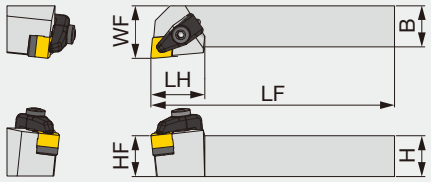
Rhombic, 80°
without hole

DIMPLEFX
CCLNR/L-RD

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic ceramic inserts with dimple



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CCLNR/L16M45-RD	1.000	1.000	6.000	1.300	1.000	1.250	0.047	CNGD 45...	3.0

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CCLNR/L2525M1207-RD	25	25	150	33	25	32	1.2	CNGD1207...	4
CCLNR3225P1207-RD	32	25	170	33	32	32	1.2	CNGD1207...	4

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CCLNR/L**-RD	CCP4-A	CCS4-A	CC44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

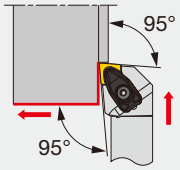
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C136

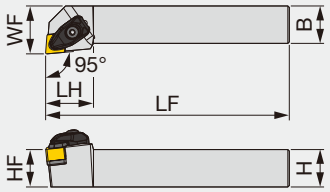
Reference pages: CCLNR/L-RD: Inserts → B065,
Standard cutting conditions → C136

TCLNR/L-F

Toolholder with carbide clamping plate, with 95° approach angle, for negative 80° rhombic ceramic inserts without hole



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
TCLNR/L 16-43D-F	1.000	1.000	6.000	1.260	1.000	1.250	0.031	CNGN 432...
TCLNR/L 16-45D-F	1.000	1.000	6.000	1.260	1.000	1.250	0.031	CNGN 432...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
TCLNR/L2525M1204-F	25	25	150	32	25	32	0.8	CNGN1204...
TCLNR/L2525M1207-F	25	25	150	32	25	32	0.8	CNGN1207...

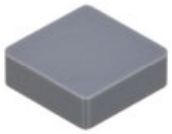
**RE: Standard corner radius

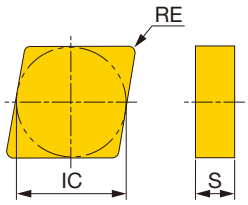
SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TCLNR/L **-43D-F TCLNR/L2525M1204-F	DCLS-4F	DLS-4A	TSC-44	BH-40050-A	DSP-4A	T-15F	P-3
TCLNR/L **-45D-F TCLNR/L2525M1207-F	DCLS-4F	DLS-4A	TSC-42	BH-40050-A	DSP-4A	T-15F	P-3

INSERT

CNGN-E/T1





		Ceramic	
		TS200	TS300
P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	★
H	Hard materials		

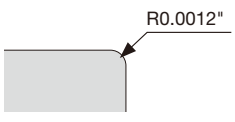
★ : First choice

Designation		Edge prep.*	Ceramic		RE (in)	IC (in)	S (in)
Inch	Metric		TS200	TS300			
CNGN 432-E	CNGN120408-E	E		●	0.031	0.500	0.187
CNGN 433-E	CNGN120412-E	E		●	0.047	0.500	0.187
CNGN 433-T1	CNGN120412-T1	T1	●		0.047	0.500	0.187
CNGN 452-E	CNGN120708-E	E		●	0.031	0.500	0.313
CNGN 453-E	CNGN120712-E	E	●	●	0.047	0.500	0.313
CNGN 454-T1	CNGN120716-T1	T1	●		0.063	0.500	0.313

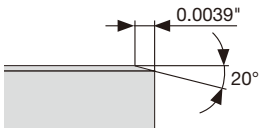
* Types of cutting edge preparations

● : Line up

E: Low cutting force



T1: Strong cutting edge



Reference pages: TCLNR/L-F: Standard cutting conditions → C136

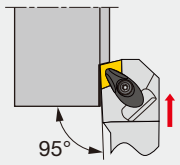
CN

Rhombic, 80°
with hole

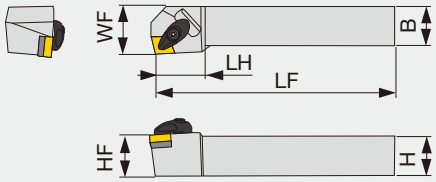
TURNING A

ACKNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **K**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACKNR/L164-A	1.000	1.000	6.000	1.375	1.000	1.312	0.032	CN** 43...	2.2

Torque: Recommended clamping torque: lb·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1
ACKNR/L164-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: ACKNR/L: Inserts → B054 -, CBN → B168 -, PCD → B211

CN



Rhombic, 80° with hole

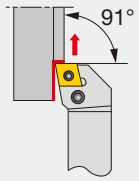
GN



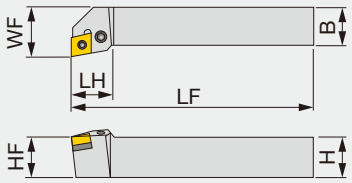
Rhombic, 70° with hole

PCFNR/L

Lever-lock type toolholder for facing with 91° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PCFNR/L2020	20	20	125	28	20	25	0.8	CN**/GNGA1204...
PCFNR/L2525	25	25	150	28	25	32	0.8	CN**/GNGA1204...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCFNR/L...	LSC42 D30	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

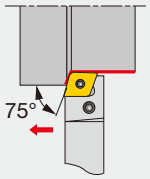
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

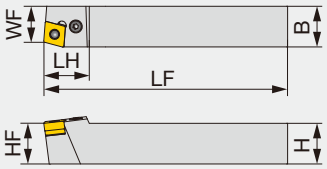
Reference pages: PCFNR/L: Inserts → B054 -, CBN → B168 -, B178, PCD → B211

PCBNR/L

Lever-lock toolholder with 75° approach angle, for negative 80° rhombic inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PCBNR/L2525	25	25	150	28	25	22	0.8	CN**1204...

Note: 100° corner is used.
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCBNR/L2525	LSC42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P
Cutting conditions	B010

S

Application	Finishing	Medium cutting
Grade	AH8005	AH8005
Chipbreaker Shape	HRF	HRM
Cutting conditions	B012	

Reference pages: PCBNR/L: Inserts → B054 -, CBN → B168 -, PCD → B211

CN



Rhombic, 80° with hole

GN

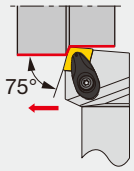


Rhombic, 70° with hole

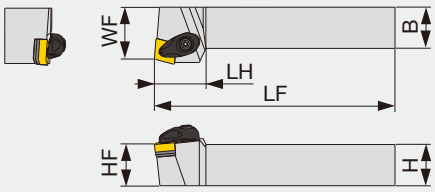
TURNING A

ACRNR/L

Double-clamp toolholder with 75° approach angle, for negative 80° rhombic inserts



Cutting edge style **R**



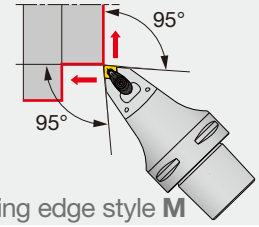
Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACRNR/L164-A	1.000	1.000	6.000	1.25	1.000	1.25	0.032	CN** 43...	2.2

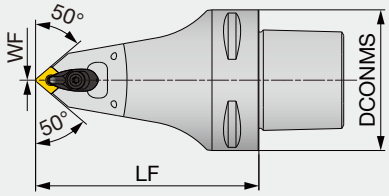
Torque: Recommended clamping torque: lb·ft
**RE: Standard corner radius

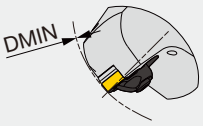
C-ACMNN

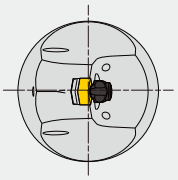
Double-clamp toolholder, with 50° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **M**







Metric	DCONMS	LF	WF	DMIN	RE**	Insert
C6ACMNN00100-0904N	63	100	0	110	0.8	CN**/GNMG0904...
C6ACMNN00140-0904N	63	140	0	110	0.8	CN**/GNMG0904...

**RE: The holder measurements are true with this insert radius
Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS









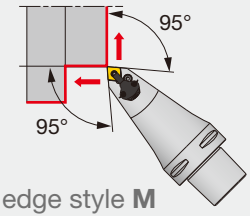
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
ACRNR/L164-A	ACP4S	ACS-5W	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACMNN001**-0904N	ACP3S-E	ACS-5W	ASC322	CSTB-3.5	BP-7	SP-2.5	T-15F

Reference pages: ACRNR/L: Inserts → B054 -, CBN → B168 -, PCD → B211
C-ACMNN: Inserts→ B054, B075
Parts for coolant hose → C133

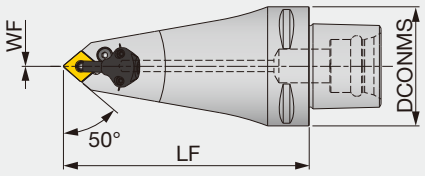
TUNGCAP
C-PCMNN-CHP

Direct connection

Lever lock toolholder with TungCap connection.
For negative 80°/70° rhombic insert. High-pressure coolant capability.



Cutting edge style **M**



Metric	DCONMS	LF	WF	RE**	Insert	Torque
C6PCMNN00130-12-CHP	63	130	0	0.8	CN**/GNGA1204...	3

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

For external turning only.

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PCMNN00130-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: C-PCMNN-CHP: Inserts→ B054, CBN → B168 -, B178, PCD → B211
Parts for coolant hose → C133

CC

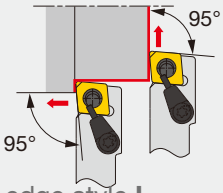


Rhombic, 80°
with hole
Positive 7°

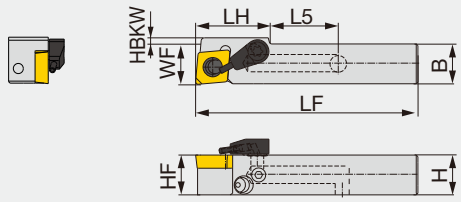
PCLCR/L1616X09S-CHP-MC

Direct connection

Lever lock toolholders – 95° approach angle.
For positive 80° rhombic insert. High-pressure coolant capability with bottom direct connection



Cutting edge style **L**



Metric	H	B	LF	LH	L5	HF	WF	HBKW	Insert
PCLCR/L1616X09S-CHP-MC	16	16	71	23	17	16	16.2	-	CC**09T3...

Applicable for 14 MPa (2031 PSI) pressure coolant

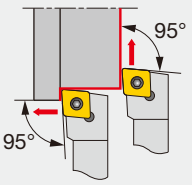
SPARE PARTS



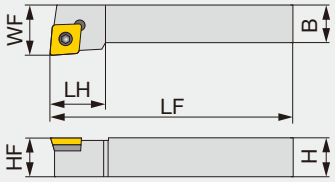
Designation	Lever	Pin	Clamping screw	Wrench	Coolant plug	Coolant unit
PCLCR/L1616X09S-CHP-MC	SLLV-3	SLPI-3	SR10400150	HW2.5/5	SR5/16UNFTL360	S-CU-CHP

SCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SCLCR/L103	0.625	0.625	4.000	0.625	0.625	0.750	0.031	CC** 32.5...
SCLCR/L123	0.750	0.750	4.500	0.625	0.750	0.750	0.031	CC** 32.5...
SCLCR/L124B	0.750	0.750	4.500	0.625	0.750	0.750	0.031	CC** 43...
SCLCR/L163	1.000	1.000	6.000	0.625	1.000	0.750	0.031	CC** 32.5...
SCLCR/L164D	1.000	1.000	6.000	0.750	1.000	0.750	0.031	CC** 43...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...
SCLCR/L2020K12	20	20	125	20	20	25	0.8	CC**1204...

**RE: Standard corner radius

SPARE PARTS

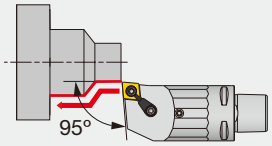


Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SCLCR/L**3, SCLCR/L1616H09	CSTB-3.5L	DTS5-3.5	SSC32	P-3.5	T-15F
SCLCR/L124B, 164D	CSPB-5	DTS6-4	SSC4T3	P-4	T20F
SCLCR/L2020K12	CSTB-4F	DTS6-4	SSC4T3	P-4	T-15F

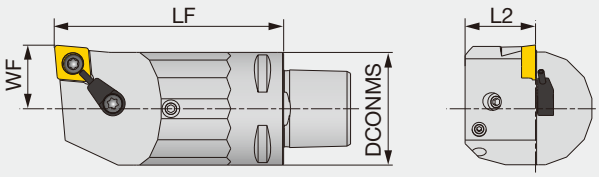
Reference pages: PCLCR/L1616X09S-CHP-MC: Inserts → B112 -, CBN → B189 -, PCD → B213
Parts for coolant hose → C133
SCLCR/L: Inserts → B112 -, CBN → B189 -, PCD → B213

TUNGCAP
C-SCLCL-CHP

Screw-on toolholder, with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SCLCL18040-09-CHP	32	40	20	18	0.8	CC**09T3...
C3SCLCL18065-09-CHP	32	65	20	18	0.8	CC**09T3...

Applicable for 14 MPa (2031 PSI) coolant
Cannot be used for boring

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
C3SCLCL...	CSTB-4S	S-CU-CHP	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Chipbreaker shape	01	PSS	PS	PM
Cutting conditions	B016			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH6225	AH6225	AH6225
Chipbreaker shape	W**	PSS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

Reference pages: C-SCLCL-CHP: Inserts → B112 -, CBN → B189 -, PCD → B213
Parts for coolant hose → C133

DN

Rhombic, 55° with hole

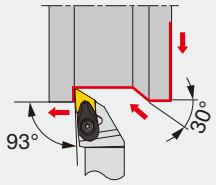
FN

Rhombic, 45° with hole

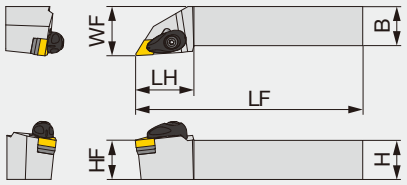
TURNINGA

ADJNR/L

Double-clamp toolholder with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

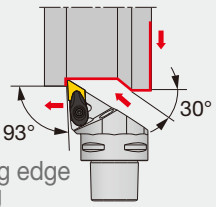
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADJNR/L1233-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	DN**/FNMG 33...	2.2
ADJNR/L124-A	0.750	0.750	4.500	1.500	0.750	1.000	0.031	DN**/FNGA 43...	2.2
ADJNR/L1633-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	DN**/FNMG 33...	2.2
ADJNR/L164-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	DN**/FNGA 43...	2.2
ADJNR/L204-A	1.250	1.250	7.000	1.500	1.250	1.500	0.031	DN**/FNGA 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**/FNMG1104...	3
ADJNR/L2020K15-A	20	20	125	36	20	25	0.8	DN**/FNGA1504...	3
ADJNR/L2020K1506-A	20	20	125	36	20	25	0.8	DN**/FNGA1506...	3
ADJNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**/FNMG1104...	3
ADJNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**/FNGA1504...	3
ADJNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**/FNGA1506...	3
ADJNR/L3225P15-A	32	25	170	36	32	32	0.8	DN**/FNGA1504...	3

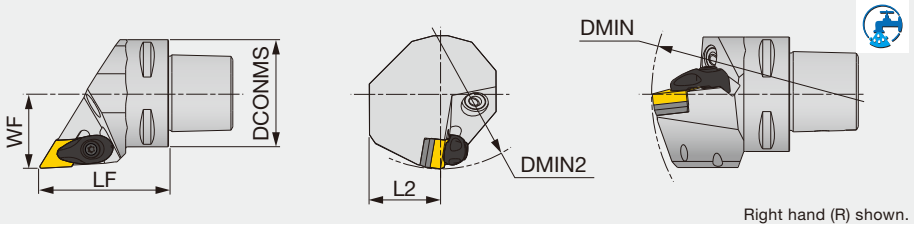
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

C-ADJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADJNR/L22050-1104N	32	50	20	22	121	85	0.8	DN**/FNMG1104...
C4ADJNR/L27050-1104N	40	50	25	27	145	110	0.8	DN**/FNMG1104...
C4ADJNR/L27050-15N	40	50	25	27	145	110	0.8	DN**/FNGA1504...
C5ADJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**/FNGA1504...
C6ADJNR/L45065-1104N	63	65	35	45	190	110	0.8	DN**/FNMG1104...
C6ADJNR/L45065-15N	63	65	41	45	190	110	0.8	DN**/FNGA1504...
C6ADJNR/L45135-15N	63	135	41	45	190	110	0.8	DN**/FNGA1504...

Applicable for 7 MPa (1015 PSI) coolant

Option: ASD423 (Shim for DN**1506**)

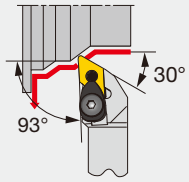
SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
ADJNR/L**33-A, ADJNR/L**1104-A, C*ADJNR/L**-1104N	ACP3S-E	ACS-5W	-	ASD322	CSTB-3.5	BP-7	SP-2.5	T-15F
ADJNR/L**4-A, ADJNR/L**15-A	ACP4S	ACS-5W	-	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
ADJNR/L**1506-A	ACP4S	ACS-5W	-	ASD423	CSTB-3.5	BP-7	SP-2.5	T-15F
C*ADJNR/L**-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

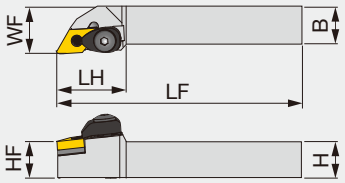
Reference pages: ADJNR/L, C-ADJNR/L: Inserts → B066 -, B075 -, CBN → B172 -, B176 -,PCD → B211

DDJNR/L

One-Double toolholder with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DDJNR/L2020K15	20	20	125	38	20	25	0.8	DN**/FNGA1504...
DDJNR/L2020K1506	20	20	125	38	20	25	0.8	DN**/FNGA1506...
DDJNR/L2525M15	25	25	150	38	25	32	0.8	DN**/FNGA1504...
DDJNR/L2525M1506	25	25	150	38	25	32	0.8	DN**/FNGA1506...
DDJNR/L3225P15	32	25	170	38	32	32	0.8	DN**/FNGA1504...
DDJNR/L3225P1506	32	25	170	38	32	32	0.8	DN**/FNGA1506...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DDJNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDJNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pagesDDJNR/L: Inserts → B066 -, CBN → B172 -, B176 -,PCD → B211

DN

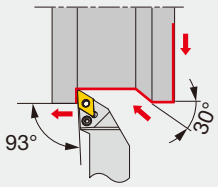
Rhombic, 55° with hole

FN

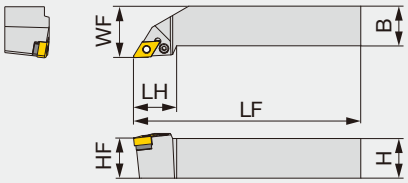
Rhombic, 45° with hole

PDJNR/L

Lever-lock toolholder with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L1033	0.625	0.625	4.000	1.125	0.625	0.875	0.031	DN**/FNMG 33...	1.5
PDJNR/L1233	0.750	0.750	4.500	1.125	0.750	1.000	0.031	DN**/FNMG 33...	1.5
PDJNR/L1633	1.000	1.000	6.000	1.125	1.000	1.250	0.031	DN**/FNMG 33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	0.8	DN**/FNMG1104...	2
PDJNR/L1616H11	16	16	100	27	16	20	0.8	DN**/FNMG1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	0.8	DN**/FNMG1104...	2
PDJNR/L2020K11	20	20	125	27	20	25	0.8	DN**/FNMG1104...	2
PDJNR/L2020	20	20	125	34	20	25	0.8	DN**/FNGA1504...	3
PDJNR2020K15E	20	20	125	36	20	25	0.8	DN**/FNGA1506...	3
PDJNR/L2520	25	20	150	34	25	25	0.8	DN**/FNGA1504...	3
PDJNR/L2525M1104	25	25	150	27	25	32	0.8	DN**/FNMG1104...	2
PDJNR/L2525M11	25	25	150	27	25	32	0.8	DN**/FNMG1104...	2
PDJNR/L2525	25	25	150	34	25	32	0.8	DN**/FNGA1504...	3
PDJNR/L2525M15E	25	25	150	36	25	32	0.8	DN**/FNGA1506...	3
PDJNR/L3225	32	25	170	32	32	32	0.8	DN**/FNGA1504...	3
PDJNR3225P15E	32	25	170	36	32	34	0.8	DN**/FNGA1506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

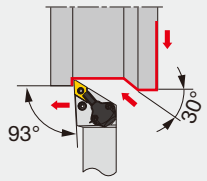
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L**33, PDJNR/L**11/1104	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L2020	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR2020K15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L2520	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L3225	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR3225P15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

Reference pages: PDJNR/L: Inserts → B066 -, B075 -, CBN → B172 -, B176 -,PCD → B211

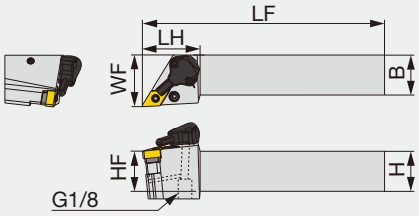
PDJNR/L-CHP

Tube connection

Lever lock toolholders – 93° approach angle.
For negative 55°/45° rhombic insert. High-pressure coolant capability.



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L1233-CHP	0.750	0.750	4.500	1.420	0.750	1.250	0.031	DN**/FNMG 33...	1.48
PDJNR/L124-CHP	0.750	0.750	4.500	1.420	0.750	1.250	0.031	DN**/FNGA 43...	2.21
PDJNR/L1633-CHP	1.000	1.000	6.000	1.420	1.000	1.250	0.031	DN**/FNMG 33...	1.48
PDJNR/L164-CHP	1.000	1.000	6.000	1.420	1.000	1.250	0.031	DN**/FNGA 43...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K1104-CHP	20	20	125	36	20	32	0.8	DN**/FNMG1104...	2
PDJNR/L2020K15-CHP	20	20	125	36	20	32	0.8	DN**/FNGA1504...	3
PDJNR/L2525M1104-CHP	25	25	150	36	25	32	0.8	DN**/FNMG1104...	2
PDJNR/L2525M15-CHP	25	25	150	36	25	32	0.8	DN**/FNGA1504...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
20Mpa (2901 PSI)

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PDJNR/L**33-CHP, PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L**4-CHP, PDJNR/L**15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PDJNR/L**33-CHP, PDJNR/L**1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PDJNR/L**4-CHP, PDJNR/L**15-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PDJNR/L-CHP: Inserts → B066 -, B075 -, CBN → B172 -, B176 -,PCD → B211
Parts for coolant hose→ C133

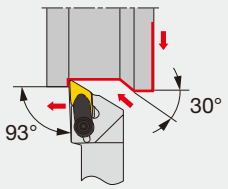
DN FN

Rhombic, 55° with hole — **Rhombic, 45° with hole**

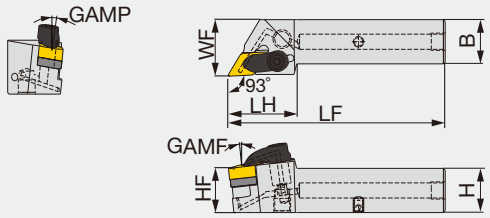
ADJNR/L-CHP-MC

Direct connection | Tube connection

Double clamping tool holders-93°approach angle
For negative 55°/45°rhombic insert. High-pressure coolant capability with tube and direct connections



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque
ADJNR/L12-4-CHP-MC	0.750	0.750	4.331	1.575	0.750	1.000	6°	6°	DN**/FNGA 44(43)...	2.95
ADJNR/L16-4-CHP-MC	1.000	1.000	4.921	1.575	1.000	1.250	6°	6°	DN**/FNGA 44(43)...	2.95

Metric	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque*
ADJNR/L2020X-15-CHP-MC	20	20	110	40	20	25	6°	6°	DN**/FNGA1506(04)...	4
ADJNR/L2525X-15-CHP-MC	25	25	125	40	25	32	6°	6°	DN**/FNGA1506(04)...	4

Torque: Recommended clamping torque: lbs·ft (*N·m)
Use RDT443 shim when using DN**/FNGA43..., DN**/FNGA1504... inserts
Applicable for 14 MPa (2031 PSI) pressure coolant

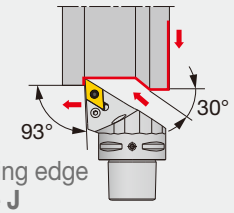
SPARE PARTS

Designation	Clamp set	Shim 1	Shim 2 (Optional)	Shim screw	Screw for tube connection	Coolant plug	O-ring	Wrench
ADJNL...	LCGL-4JCSET	RDT433	(RDT443)	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20
ADJNR...	LCGR-4JCSET	RDT433	(RDT443)	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20

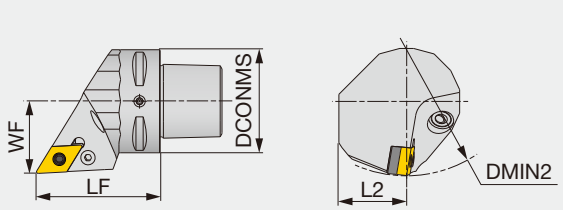
TUNGCAP

C-PDJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PDJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**/FNGA1504(06)...
C6PDJNR/L45065-15N	63	65	41	45	195	95	0.8	DN**/FNGA1504(06)...

Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

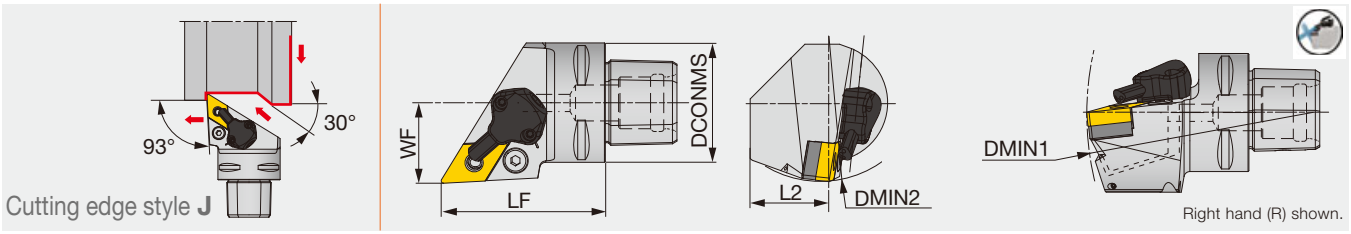
Designation	Coolant parts	Shim	Lever	Clamping screw	Spring pin	Wrench
C5PDJN*35060-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4	P-3
C6PDJN*45065-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4S	P-3

Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

Reference pages: ADJNR/L-CHP-MC: Inserts → B066 -, CBN → B172 -, B176 -,PCD → B211
C-PDJNR/L: Inserts → B066 -, CBN → B172 -, B176 -,PCD → B211
Parts for coolant hose→ C133

TUNGCAP
C-PDJNR/L-CHP

Lever lock toolholders with TungCap connection – 93° approach angle.
For negative 55°/45° rhombic insert. High-pressure coolant capability.



Metric	DCONMS	LF	L2	WF	DMIN1	DMIN2	RE**	Insert	Torque
C4PDJNR/L27055-1104-CHP	40	55	27	27	145	110	0.8	DN**/FNMG1104...	2
C4PDJNR/L27055-15-CHP	40	55	27	27	145	110	0.8	DN**/FNGA1504(06)...	3
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**/FNGA1504(06)...	3
C6PDJNR/L45065-1104-CHP	63	65	35	45	195	95	0.8	DN**/FNMG1104...	2
C6PDJNR/L45065-15-CHP	63	65	35	45	195	95	0.8	DN**/FNGA1504(06)...	3

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L
C*PDJNR/L**-15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

Option: LSD42A (Shim for DN**1506...), LSP4S (Spring pin for DN**1506...)

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PDJNR/L**1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N
C*PDJNR/L**-15-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

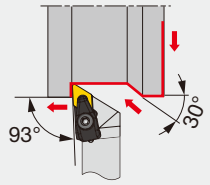
Reference pages: C-PDJNR/L-CHP: Inserts → B066 -, B075 -, CBN → B172 -, B176 -, PCD → B211
Parts for coolant hose→ C133

DN

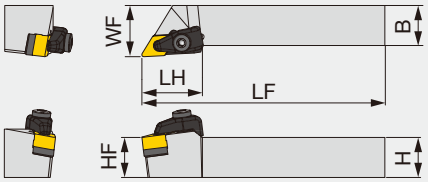
Rhombic, 55° without hole

DIMPLEFX
CDJNR/L-RD

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic ceramic inserts with dimple



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CDJNR/L2525M1507-RD	25	25	150	38	25	32	1.2	DNGD1507...	4
CDJNR3225P1507-RD	32	25	170	38	32	32	1.2	DNGD1507...	4

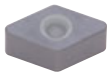
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CDJNR/L**-RD	CCP4-A	CCS4-A	CD44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	
Cutting conditions	C136

Reference pages: CDJNR/L-RD: Inserts → B074
Standard cutting conditions → C136

DN FN

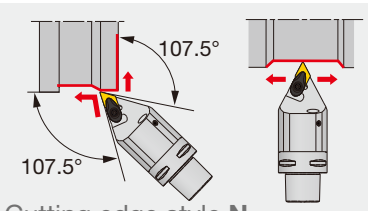
Rhombic, 55° with hole

Rhombic, 45° with hole

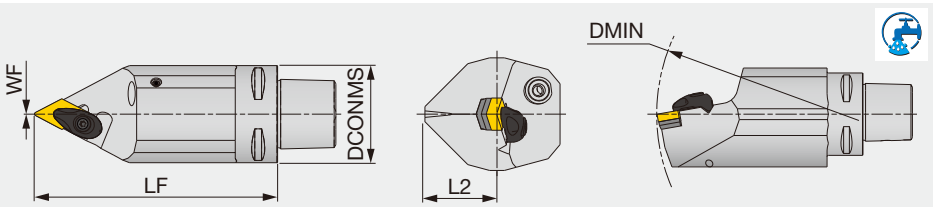
TURNING

C-ADNNN

Double-clamp toolholder, with 62.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **N**



Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ADNNN00090-15(1)	50	90	32	0	-	0.8	DN**/FNGA1504(06)...
C5ADNNN00090-15N(2)	50	90	32	0	165	0.8	DN**/FNGA1504(06)...
C5ADNNN00125-15(1)	50	125	32	0	-	0.8	DN**/FNGA1504(06)...
C5ADNNN00125-15N(2)	50	125	32	0	165	0.8	DN**/FNGA1504(06)...
C6ADNNN00100-15N(2)	63	100	37.5	0	190	0.8	DN**/FNGA1504(06)...
C6ADNNN00140-15N(2)	63	140	37.5	0	190	0.8	DN**/FNGA1504(06)...

The items without DMIN cannot be used for boring
(1) Applicable for 3 MPa (435 PSI) coolant (2) Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ADNNN00090-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00090-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

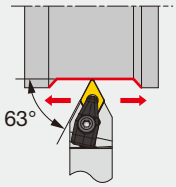
Reference pages: C-ADNNN: Inserts→ B066 -, CBN → B172 -, B176 -, PCD → B211
Parts for coolant hose → C133

DN

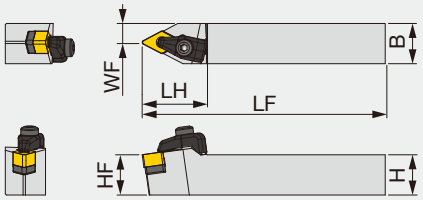
Rhombic, 55° without hole

DIMPLEFX
CDNNN-RD

Double-clamp toolholder with 63° approach angle, for negative 55° rhombic ceramic inserts with dimple



Cutting edge style **N**



Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CDNNN2525M1507-RD	25	25	150	40	25	12.5	1.2	DNGD1507...	4

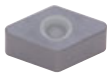
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CDNNN2525M1507-RD	CCP4-A	CCS4-A	CD44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	
Cutting conditions	C136

Reference pages: CDNNN-RD: Inserts→ B074
Standard cutting conditions → C136

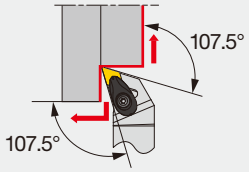
DN FN

Rhombic, 55° with hole | **Rhombic, 45° with hole**

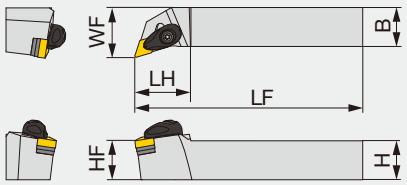
TURNING A

ADQNR/L

Double-clamp toolholder with 107.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADQNR/L1233-A	0.750	0.750	4.500	1.150	0.750	1.000	0.031	DN**/FNMG 33...	2.2
ADQNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	DN**/FNGA 43...	2.2
ADQNR/L1633-A	1.000	1.000	6.000	1.150	1.000	1.250	0.031	DN**/FNMG 33...	2.2
ADQNR/L164-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	DN**/FNGA 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**/FNMG1104...	3
ADQNR/L2020K15-A	20	20	125	32	20	25	0.8	DN**/FNGA1504...	3
ADQNR/L2020K1506-A	20	20	125	32	20	25	0.8	DN**/FNGA1506...	3
ADQNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**/FNMG1104...	3
ADQNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**/FNGA1504...	3
ADQNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**/FNGA1506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**33-A, ADQNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F
ADQNR/L124, 164-A, ADQNR/L**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADQNR/L**1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: ADQNR/L: Inserts → B066 -, B075, CBN → B172 -, B176 -, PCD → B211

DN FN

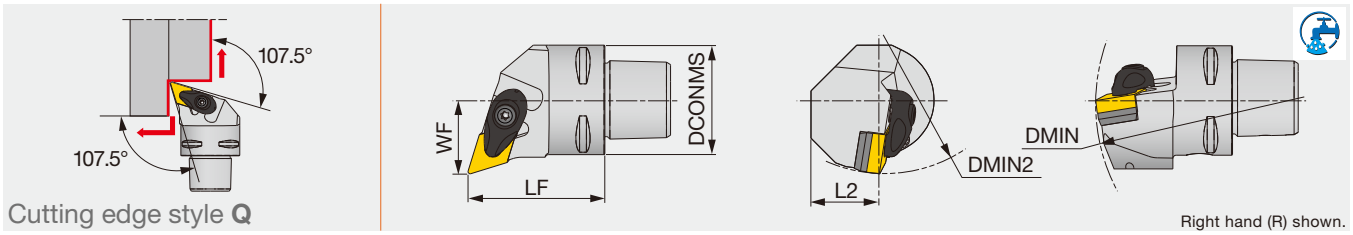
Rhombic, 55° with hole

Rhombic, 45° with hole

TURNING

C-ADQNR/L

Double-clamp toolholder, with 107.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **Q**

Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADQNR/L22040-15N	32	40	20	22	121	85	0.8	DN**/FNGA1504...
C4ADQNR/L27050-15N	40	50	25	27	145	110	0.8	DN**/FNGA1504...

Applicable for 7 MPa (1015 PSI) a coolant

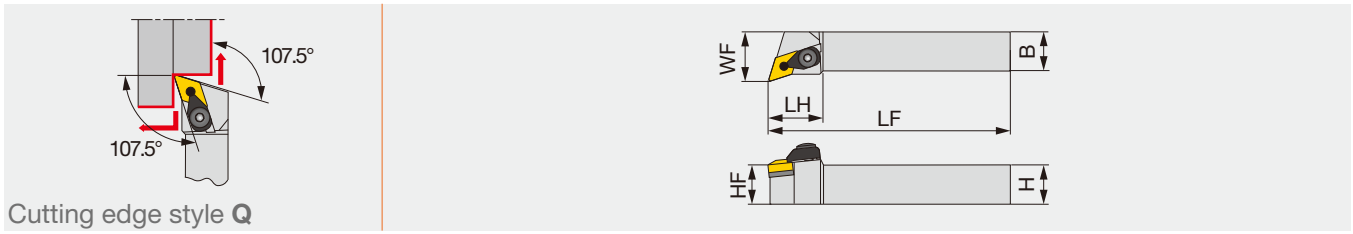
Option: ASD423 (Shim for DN**1506**)

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
C*ADQNR/L**-15N	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F

DDQNR/L

"One-Double" toolholder with 107.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **Q**

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DDQNR/L2020K15	20	20	125	35	20	25	0.8	DN**/FNGA1504...
DDQNR/L2020K1506	20	20	125	35	20	25	0.8	DN**/FNGA1506...
DDQNR/L2525M15	25	25	150	35	25	32	0.8	DN**/FNGA1504...
DDQNR/L2525M1506	25	25	150	35	25	32	0.8	DN**/FNGA1506...
DDQNR/L3225P15	32	25	170	35	32	32	0.8	DN**/FNGA1504...
DDQNR/L3225P1506	32	25	170	35	32	32	0.8	DN**/FNGA1506...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

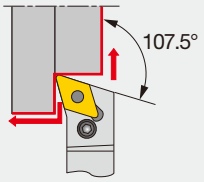
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DDQNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDQNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

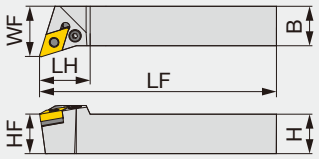
Reference pages: C-ADQNR/L, DDQNR/L: Inserts → B066 -, CBN → B172 -, B176 -, PCD → B211

PDQNR/L

Lever-lock toolholder with 107.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PDQNR/L2525	25	25	150	32	25	32	0.8	DN**/FNGA1504...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDQNR/L...	LSD42 D30	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PDQNR/L: Inserts → B066 -, CBN → B172 -, B176 -, PCD → B211

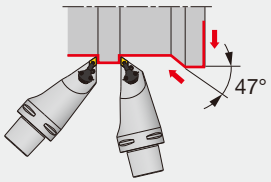
DN FN

Rhombic, 55° with hole — **Rhombic, 45° with hole**

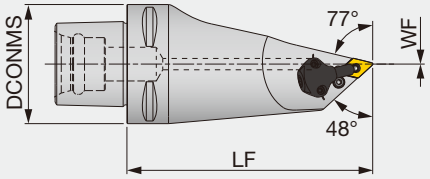
TUNGCAP
C-PDMNL-CHP

Direct connection

Lever lock toolholder with TungCap connection.
For negative 55°/45° rhombic insert. High-pressure coolant capability.



Cutting edge style **M**



Left hand (L) shown.

Metric	DCONMS	LF	WF	RE **	Insert	Torque
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**/FNMG1104...	2

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

For external turning only.

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PDMNL00130-1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

SPARE PARTS

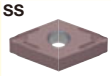
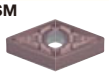
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

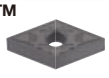
P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B004	

M

Application	Finishing	Medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	SS 	SM 
Cutting conditions	B006	

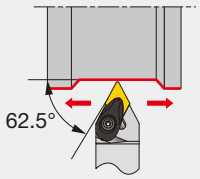
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM 
Cutting conditions	B008

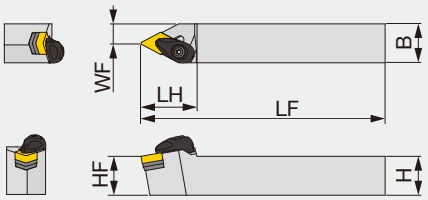
Reference pages: C-PDMNL-CHP: Inserts→ B066 -, B075, CBN → B172
Parts for coolant hose → C133

ADPNN

Double-clamp toolholder with 62.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **P**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADPNN124-A	0.750	0.750	4.500	1.500	0.750	0.375	0.031	DN**/FNGA 43...	2.2
ADPNN164-A	1.000	1.000	6.000	1.500	1.000	0.500	0.031	DN**/FNGA 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADPNN2020K15-A	20	20	125	36	20	7.5	0.8	DN**/FNGA1504...	3
ADPNN2525M15-A	25	25	150	36	25	12.5	0.8	DN**/FNGA1504...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADPNN...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: ADPNN: Inserts → B066 -, CBN → B172 -, B176, PCD → B211

DN

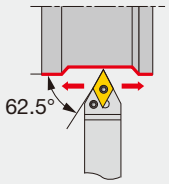
Rhombic, 55° with hole

FN

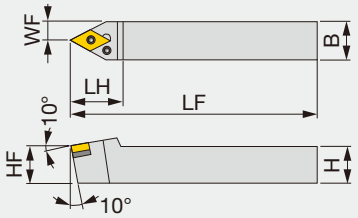
Rhombic, 45° with hole

PDPNN

Lever-lock toolholder with 62.5° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **P**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
PDPNN2525	25	25	150	36	25	12.5	0.8	DN**/FNGA1504...
PDPNN2525M15E	25	25	150	36	25	12.5	0.8	DN**/FNGA1506...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDPNN2525	LSD42	LCS4	P-3	LSP4	LCL4
PDPNN2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

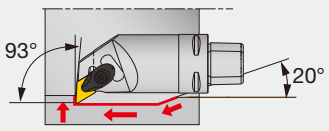
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

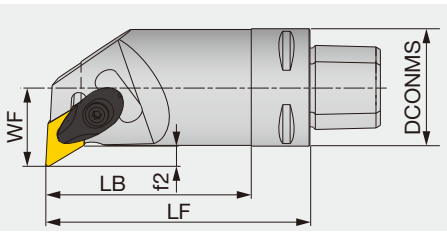
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

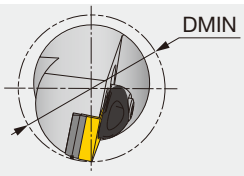
Reference pages: PDPNN: Inserts → B066 -, CBN → B172 -, B176, PCD → B211

Double-clamp internal toolholder, for negative 55°/45° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4ADUNR20070-15	38	40	70	50	20	5	0.8	DN**/FNGA1504...
C4ADUNR27090-15	50	40	90	-	27	7	0.8	DN**/FNGA1504...

Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADUNR/L...	ACP4S	ACS-5W	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA (with rake)	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: C-ADUNR/L: Inserts→ B066 -, CBN → B172 -, B176, PCD → B211
Parts for coolant hose → C133

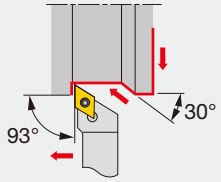
DC



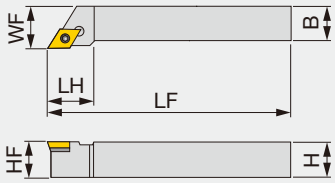
Rhombic, 55°
with hole
Positive 7°

SDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SDJCR/L062	0.375	0.375	2.500	0.625	0.375	0.500	0.016	DC** 21.5...
SDJCR/L082	0.500	0.500	3.500	0.625	0.500	0.625	0.016	DC** 21.5...
SDJCR/L083	0.500	0.500	3.500	-	0.500	0.625	0.016	DC** 32.5...
SDJCR/L103	0.625	0.625	4.000	-	0.625	0.750	0.031	DC** 32.5...
SDJCR/L123	0.750	0.750	4.500	-	0.750	1.000	0.031	DC** 32.5...
SDJCR/L163	1.000	1.000	6.000	-	1.000	1.250	0.031	DC** 32.5...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDJCR1616H11	16	16	100	20	16	20	0.8	DC**11T3...
SDJCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDJCR/L2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDJCR/L**2	CSTB-2.5	-	-	-	T-8F
SDJCR/L**3, SDJCR/L**11	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH6225	AH6225	AH6225
Chipbreaker shape	W**	PSS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

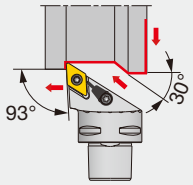
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

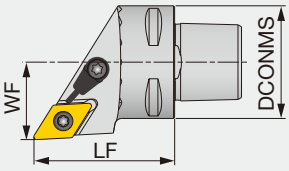
Reference pages: SDJCR/L: Inserts → B121 -, CBN → B194, PCD → B214

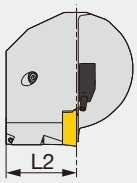
TUNGCAP
C-SDJCR/L-CHP

Screw-on toolholder, with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SDJCR/L22040-11-CHP	32	40	20	22	0.8	DC**11T3...

Applicable for 14 MPa (2031 PSI) coolant
Cannot be used for boring

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
C3SDJCR/L22040-11-CHP	CSTB-4S	S-CU-CHP	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH6225	AH6225	AH6225
Chipbreaker shape	W**	PSS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

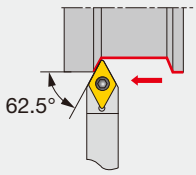
Reference pages: C-SDJCR/L-CHP: Inserts → B121 -, CBN → B194, PCD → B214
Parts for coolant hose → C133

DC

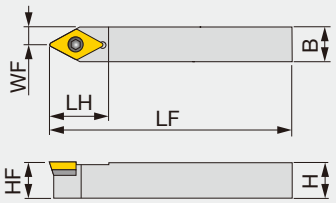
Rhombic, 55°
with hole
Positive 7°

SDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **N**

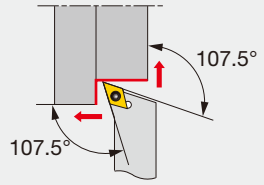


Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDNCN1616H11	16	16	100	21	16	8	0.8	DC**11T3...
SDNCN2020K11	20	20	125	21	20	10	0.8	DC**11T3...
SDNCN2525M11	25	25	150	21	25	12.5	0.8	DC**11T3...

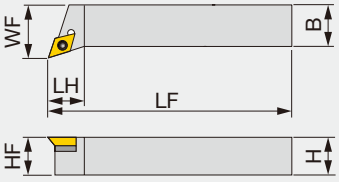
**RE: Standard corner radius

SDQCR/L

Screw-on toolholder with 107.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDQCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDQCR2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE : Standard corner radius

SPARE PARTS

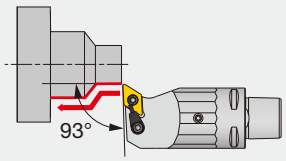
Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDNCN..., SDQCR/L...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

C D F G H R S T V W Y OTHERS

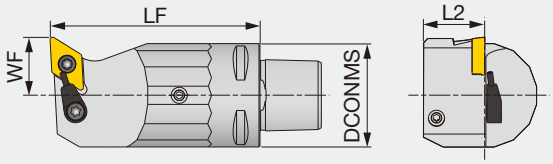
Reference pages: SDNCN, SDQCR/L: Inserts → B121 -, CBN → B194, PCD → B214

TUNGCAP
C-SDUCL-CHP

Screw-on toolholder, with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SDUCL18040-11-CHP	32	40	19	18	0.8	DC**11T3...
C3SDUCL18065-11-CHP	32	65	19	18	0.8	DC**11T3...

Applicable for 14 MPa (2031 PSI) coolant
Cannot be used for boring

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
C3SDUCL...	CSTB-4S	S-CU-CHP	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH6225	AH6225	AH6225
Chipbreaker shape	W**	PSS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

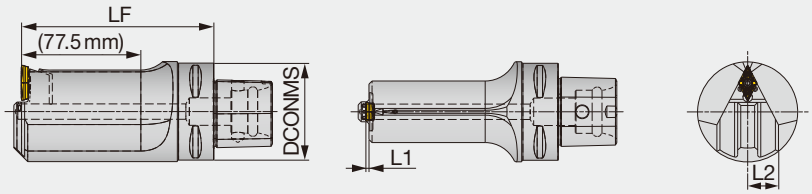
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

Reference pages: C-SDUCL-CHP: Inserts→ B121 -, CBN → B194, PCD → B214
Parts for coolant hose → C133

C6SDNCN-Y-CHP

Screw-on Y-axis turning toolholder with TungCap connection, for positive 55° rhombic inserts



Cutting edge style **N**

Metric	SS	DCONMS	LF	L1	L2	RE	Insert	Torque
C6SDNCN00125-13-Y-CHP	C6	63	125	2	20	0.4	2D-DCMT13T4...	3.5

Torque: Recommended clamping torque: N·m

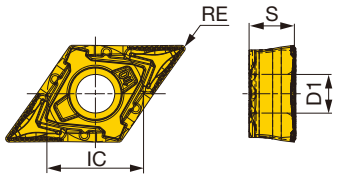
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit
C6SDNCN00125-13-Y-CHP	CSTB-4M	H-TB2W	BT15M

INSERT

2D-DCMT**-ZF





P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated T9215	IC (in)	S (in)	D1 (in)
2D-DCMT13T404-ZF	0.016	●	0.433	0.203	0.173

Please note that 2D-DCMT... insert is not recommended for pull face-turning method (pulling the insert away from the part center).

● : Line up

C D F G H R S T V W Y OTHERS

Reference pages: Standard cutting conditions → C134

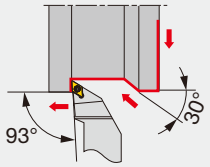
DX

Rhombic, 55° with hole

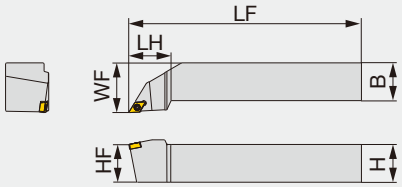
MINIFORCE TURN

JSDJXR/L

Screw-on toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **J**



Right hand (R) shown.

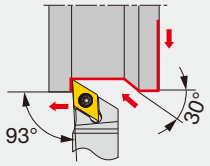
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJXR/L122	0.750	0.750	4.500	1.125	0.750	1.000	0.008	DX*U 22**L/R...	0.66
JSDJXR/L162	1.000	1.000	6.000	1.125	1.000	1.250	0.008	DX*U 22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJXR/L2020K07	20	20	125	27	20	25	0.4	DX*U0703**L/R...	0.9
JSDJXR/L2525M07	25	25	150	27	25	32	0.4	DX*U0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

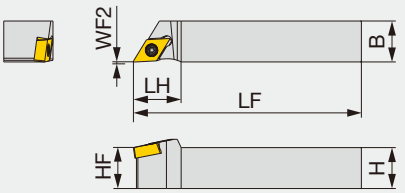
JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF2	RE**	Insert	Torque
JSDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DX*U 22**L/R...	0.66
JSDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DX*U 22**L/R...	0.66
JSDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DX*U 22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DX*U0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
JSDJXR/L..., JSDJ2XR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C136	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C136	

Small CNC lathes

P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C136	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C136	

Reference pages:
JSDJXR/L, JSDJ2XR/L:
Inserts → B126 -,
Standard cutting conditions → C136

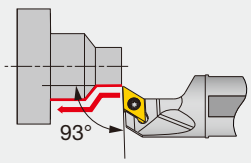
DX

Rhombic, 55° with hole

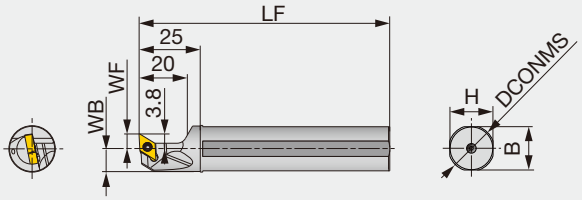
MINIFORCE TURN

JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque
JS14H-SDUXL07	14	6	100	13	13	6.75	0.2	DX*U0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	15	7.687	0.2	DX*U0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	15	7.75	0.2	DX*U0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	18	9.275	0.2	DX*U0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	18	9.275	0.2	DX*U0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	19	9.75	0.2	DX*U0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	19	9.75	0.2	DX*U0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	21	10.75	0.2	DX*U0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	24	12.25	0.2	DX*U0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	24	12.45	0.2	DX*U0703**L...	0.9

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C136	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C136	

Small CNC lathes

P

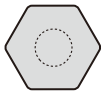
Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	C136	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	C136	

Reference pages: JS-SDUXL: Inserts → B126 -
Standard cutting conditions → C136

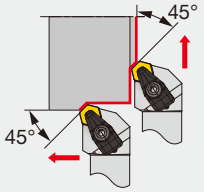
HN



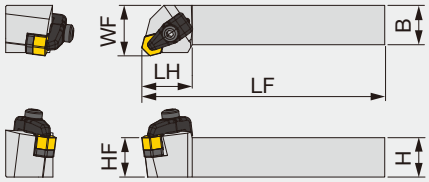
Hexagonal, 120° without hole

DIMPLEFX
CHSNR/L-RD

Double-clamp toolholder with 45° approach angle, for negative 120° hexagonal ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CHSNR16M45-RD	1.000	1.000	6.000	1.260	1.000	1.250	0.047	HNGD 45...	3.0

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CHSNR2525M0507-RD	25	25	150	32	25	32	1.2	HNGD0507...	4

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

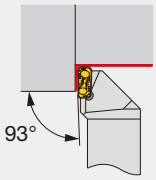
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CHSNR...	CCP4-A	CCS4-A	CH44-A	BH-40050-A	BP-5-A	P-3	P-4

INSERT SELECTION

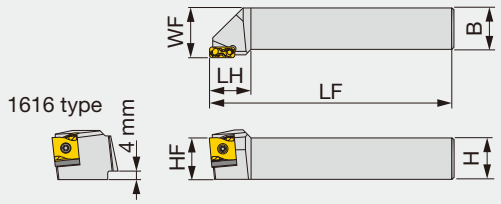
Application	Finishing to medium cutting
Grade	FX105
Chipbreaker Shape	- 
Cutting conditions	C136

Reference pages: CHSNR/L-RD: Inserts → B111
Standard cutting conditions → C136

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
TLANR/L10-12	0.625	0.625	4.000	0.790	0.625	0.750	LNMX1204**R/L...
TLANR/L12-12	0.750	0.750	4.500	0.790	0.750	1.000	LNMX1204**R/L...
TLANR/L12-16	0.750	0.750	4.500	1.000	0.750	1.000	LNMX1606**R/L...
TLANR/L16-12	1.000	1.000	6.000	0.790	1.000	1.250	LNMX1204**R/L...
TLANR/L16-16	1.000	1.000	6.000	1.000	1.000	1.180	LNMX1606**R/L...
TLANR/L20-16	1.250	1.250	6.000	1.380	1.250	1.460	LNMX1606**R/L...
TLANR/L20-24	1.250	1.250	6.000	1.380	1.250	1.500	LNMX2410**R/L...
TLANR/L24-16	1.500	1.500	7.000	1.380	1.500	1.700	LNMX1606**R/L...
TLANR/L24-24	1.500	1.500	7.000	1.380	1.500	1.700	LNMX2410**R/L...
TLANR/L32-24	2.000	2.000	8.000	1.380	2.000	2.275	LNMX2410**R/L...

Metric	H	B	LF	LH	HF	WF	Insert
TLANR/L1616H12	16	16	100	20	16	20	LNMX1204**R/L...
TLANR/L1616M12S	16	16	150	20	16	20	LNMX1204**R/L...
TLANR/L2020K12	20	20	125	20	20	25	LNMX1204**R/L...
TLANR/L2020K16	20	20	125	25	20	25	LNMX1606**R/L...
TLANR/L2525M12	25	25	150	20	25	30	LNMX1204**R/L...
TLANR/L2525M16	25	25	150	25	25	30	LNMX1606**R/L...
TLANR/L3232P16	32	32	170	35	32	37	LNMX1606**R/L...
TLANR/L3232P24	32	32	170	35	32	38	LNMX2410**R/L...
TLANR/L4040R16	40	40	200	35	40	47	LNMX1606**R/L...
TLANR/L4040R24	40	40	200	40	40	47	LNMX2410**R/L...
TLANR/L5050S24	50	50	250	40	50	57	LNMX2410**R/L...

SPARE PARTS

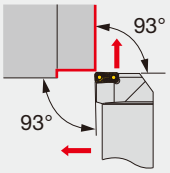
Designation	Clamping screw	Shim screw	Shim	Spring	Wrench 1	Wrench 2
TLANR**12, 12S	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL**12, 12S	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR**16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL**16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR**24	CSTB-5L163-S	-	TSL24R	PSP-16	KEYV-T20	-
TLANL**24	CSTB-5L163-S	-	TSL24L	PSP-16	KEYV-T20	-

C D F G H R S T V W Y OTHERS

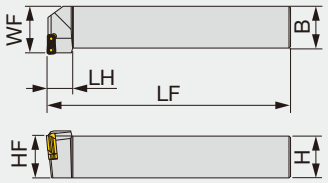
Reference pages: TLANR/L: Inserts → C062, Standard cutting conditions → C137

TLFNR/L

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
TLFNR/L16-16	1.000	1.000	6.000	0.750	1.000	1.181	LNMX1606**L/R...
TLFNR/L20-16	1.250	1.300	6.693	0.750	1.250	1.457	LNMX1606**L/R...

Metric	H	B	LF	LH	HF	WF	Insert
TLFNR/L2525M16	25	25	150	20	25	30	LNMX1606**L/R...
TLFNR/L3232P16	32	32	170	20	32	37	LNMX1606**L/R...

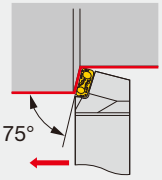
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

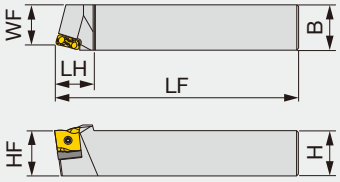
Designation	Clamping screw	Shim	Spring pin	Wrench
TLFNR...	CSTB-4L115-S	TSL16L	PSP-16	KEYV-T15
TLFNL...	CSTB-4L115-S	TSL16R	PSP-16	KEYV-T15

TLBNR/L

Screw-on toolholder for roughing with 75° approach angle, for negative tangential inserts



Cutting edge style **B**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
TLBNR/L24-24	1.500	1.500	7.874	1.378	1.500	1.378	LNMX2410**R/L...

Metric	H	B	LF	LH	HF	WF	Insert
TLBNR/L4040R24	40	40	200	35	40	35	LNMX2410**R/L...

SPARE PARTS

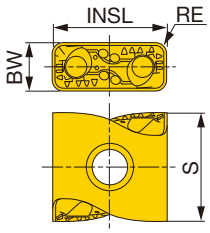
Designation	Clamping screw	Shim	Spring pin	Wrench
TLBNR...	CSTB-5L163-S	TSL24R	PSP-16	KEYV-T20
TLBNL...	CSTB-5L163-S	TSL24L	PSP-16	KEYV-T20

Reference pages: TLFNR/L, TLBNR/L:
Inserts → C062, Standard cutting conditions → C137

INSERT

LNMX12/16/24





P	Steel	★	★	★			
M	Stainless	☆		☆			
K	Cast iron	☆	☆	☆			
N	Non-ferrous						
S	Superalloys						
H	Hard materials						

★ : First choice
☆ : Second choice

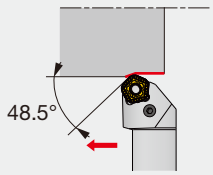
Designation	HAND	RE (in)	Coated										BW (in)	INSL (in)	S (in)
			T9115	T9125	AH725										
LNMX120408R-TDR	R	0.031	●	●									0.189	0.472	0.457
LNMX120408L-TDR	L	0.031	●	●									0.189	0.472	0.457
LNMX120412R-TDR	R	0.047	●	●									0.189	0.472	0.457
LNMX120412L-TDR	L	0.047	●	●									0.189	0.472	0.457
LNMX160608R-TDR	R	0.031	●	●									0.252	0.638	0.531
LNMX160608L-TDR	L	0.031	●	●									0.252	0.638	0.531
LNMX160612R-TDR	R	0.047	●	●									0.252	0.638	0.531
LNMX160612L-TDR	L	0.047	●	●									0.252	0.638	0.531
LNMX160616R-TDR	R	0.063	●	●									0.252	0.638	0.531
LNMX160616L-TDR	L	0.063	●	●									0.252	0.638	0.531
LNMX241016R-TDR	R	0.063	●	●									0.370	0.945	0.807
LNMX241016L-TDR	L	0.063	●	●									0.370	0.945	0.807
LNMX241024R-TDR	R	0.094	●	●									0.370	0.945	0.807
LNMX241024L-TDR	L	0.094	●	●									0.370	0.945	0.807
LNMX160608R-MDR	R	0.031	●		●								0.252	0.638	0.531
LNMX160608L-MDR	L	0.031	●		●								0.252	0.638	0.531
LNMX160612R-MDR	R	0.047	●		●								0.252	0.638	0.531
LNMX160612L-MDR	L	0.047	●		●								0.252	0.638	0.531
LNMX160608R-TWR	R	0.031	●										0.252	0.638	0.531
LNMX160608L-TWR	L	0.031	●	●									0.252	0.638	0.531
LNMX160612R-TWR	R	0.047	●	●									0.252	0.638	0.531
LNMX160612L-TWR	L	0.047	●	●									0.252	0.638	0.531

● : Line up

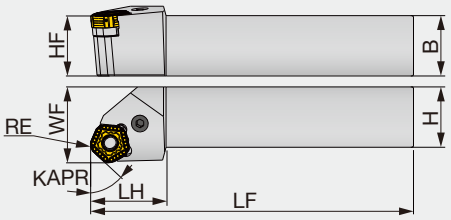
Reference pages: Standard cutting conditions → C137

PPXOR/L-HD

Lever-lock toolholder with 48.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



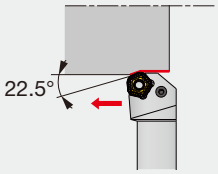
Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HD	1.000	1.000	6.000	1.380	1.000	1.260	48.5°	0.047	POMG 543...
PPXOR/L206-HD	1.250	1.250	7.000	1.500	1.250	1.510	48.5°	0.047	POMG 643...

Metric	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5°	1.2	POMG110612...
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5°	1.2	POMG130612...

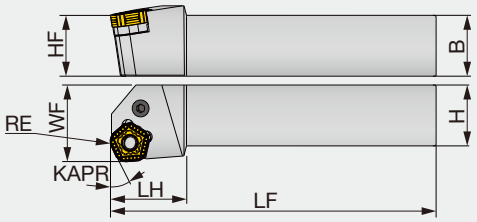
Note: Since the corner angle of TurnTenFeed insert is 108°, the workpiece corner may require additional post-process to remove stock to achieve a right angle.

PPXOR/L-HF

Lever-lock toolholder with 22.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HF	1.000	1.000	6.000	1.380	1.000	1.260	22.5°	0.047	POMG 543...
PPXOR/L206-HF	1.250	1.250	7.000	1.500	1.250	1.510	22.5°	0.047	POMG 643...

Metric	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HF	25	25	150	35	25	32	22.5°	1.2	POMG110612...
PPXOR/L3232P13-HF	32	32	170	40	32	40	22.5°	1.2	POMG130612...

Note: Since the corner angle of TurnTenFeed insert is 108°, the workpiece corner may require additional post-process to remove stock to achieve a right angle.

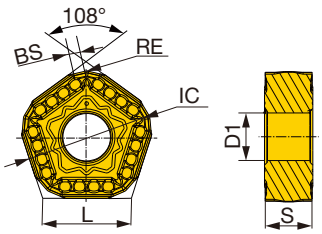
SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench
PPXOR/L165-H*, PPXOR/L2525M11-H*	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L206-H*, PPXOR/L3232P13-H*	LSPO63	LSP6	LCL6	LCS6	P-4

Reference pages: PPXOR/L-HD, PPXOR/L-HF:
Inserts → C064, Standard cutting conditions → C135

INSERT

POMG-MNW



P	Steel	★	★				
M	Stainless	☆		☆			
K	Cast iron	☆	☆				
N	Non-ferrous						
S	Superalloys			★			
H	Hard materials						

★ : First choice
☆ : Second choice

Designation		RE	Coated				IC	L	BS	S	D1
Inch	Metric	(in)	T9215	T9225	AH8015		(in)	(in)	(in)	(in)	(in)
POMG 543 MNW	POMG110612-MNW	0.047	●	●	●		0.625	0.454	0.059	0.250	0.250
POMG 643 MNW	POMG130612-MNW	0.047	●	●	●		0.750	0.545	0.079	0.250	0.312

● : Line up

Reference pages: Standard cutting conditions → C135

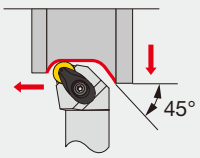
RN

Round, with hole

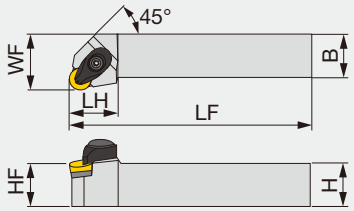
TURNING A

ARGNR/L

Double-clamp toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ARGNR/L164-A	1.000	1.000	6.000	1.125	1.000	1.250	0.250	RN** 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ARGNR/L2525M12-A	25	25	150	28	25	32	6.35	RN**120400	3

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ARGNR/L...	ACP4S	ACS-5W	BP-7	SP-2.5	ASR420	CSTB-3.5	T-15F

INSERT SELECTION

P

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B004

M

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B006

K

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B008

N

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B010

S

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B012

H

Applicadtion	Finishing to medium cutting
Grade	LX11
Chipbreaker Shape	- 
Cutting conditions	B014

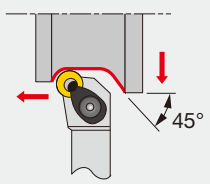
Reference pages: ARGNR/L: Inserts → B076

RN

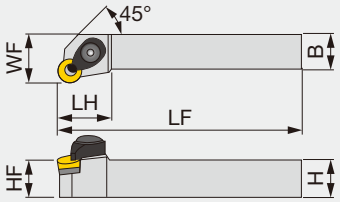
Round, with hole

DRGNR/L

"One-Double" toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DRGNR/L2525M12	25	25	150	28	25	32	6.35	RN**120400

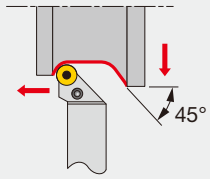
**RE: Standard corner radius

SPARE PARTS

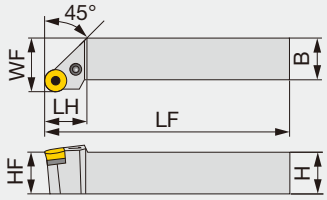
Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DRGNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSR42	BP-10	LSP4	P-3	P-4

PRGNR/L

Lever-lock toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PRGNR/L2020	20	20	125	19	20	25	4.76	RNMG090300-61
PRGNR/L2525M4	25	25	150	25	25	32	6.35	RN**120400

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGNR/L2020	LSR32	LCS3	P-2.5	LSP3	LCL3
PRGNR/L2525M4	LSR42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B004

M

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B006

K

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B008

N

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B010

S

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B012

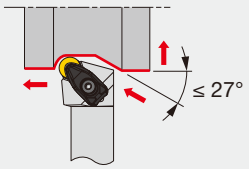
H

Applicadtion	Finishing to medium cutting
Grade	LX11
Chipbreaker Shape	- 
Cutting conditions	B014

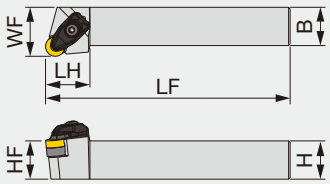
Reference pages: DRGNR/L, PRGNR/L: Inserts → B076

TRGNR/L-F

Toolholder with carbide clamping plate, with 90° approach angle, for negative round ceramic inserts without hole



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
TRGNR/L 16-45D-F	1.000	1.000	6.000	1.142	1.000	1.250	0.250	RNGN 45...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
TRGNR/L2525M1207-F	25	25	150	29	25	32	6.35	RNGN1207...

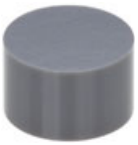
**RE: Standard corner radius

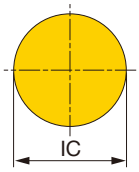
SPARE PARTS

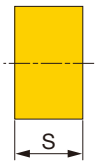
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TRGNR/L...	DCLS-4F	DLS-4A	S-43	BH-M5X0.8X0.8	DSP-4A	T-15F	P-3

INSERT

RNGN-E/T1







		TS200	TS300				RE (in)	IC (in)	S (in)
P	Steel								
M	Stainless								
K	Cast iron								
N	Non-ferrous								
S	Superalloys	★	★						
H	Hard materials								

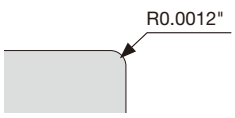
★ : First choice

Designation Inch	Designation Metric	Edge prep.*	TS200	TS300	RE (in)	IC (in)	S (in)
RNGN 45-E	RNGN120700-E	E	●	●	-	0.500	0.313
RNGN 45-T1	RNGN120700-T1	T1	●	●	-	0.500	0.313

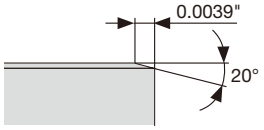
* Types of cutting edge preparations

● : Line up

E: Low cutting force



T1: Strong cutting edge



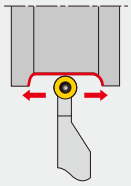
Reference pages: TRGNR/L-F: Standard cutting conditions → C136

RC

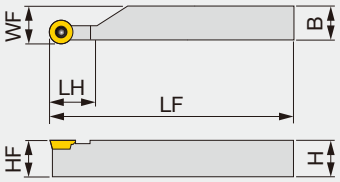
Round,
with hole
Positive 7°

SRACR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **A**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
SRACR1010H05	10	10	100	10	10	10.3	RCMT0502...
SRACR/L1212H05	12	12	100	10	12	12.3	RCMT0502...
SRACR/L1212H06	12	12	100	12	12	12.4	RC*T0602...
SRACR1616H05	16	16	100	10	16	16.3	RCMT0502...
SRACR/L1616H06	16	16	100	12	16	16.4	RC*T0602...
SRACR/L1616H08	16	16	100	16	16	16.5	RC*T0803...
SRACR/L2020K05	20	20	125	10	20	20.3	RCMT0502...
SRACR/L2020K06	20	20	125	12	20	20.4	RC*T0602...
SRACR/L2020K08	20	20	125	16	20	20.5	RC*T0803...
SRACR/L2525M05	25	25	150	10	25	25.3	RCMT0502...
SRACR/L2525M06	25	25	150	12	25	25.4	RC*T0602...
SRACR/L2525M08	25	25	150	16	25	25.5	RC*T0803...

SPARE PARTS

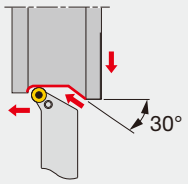



Designation	Clamping screw	Wrench
SRACR/L1*1*H05	CSTB-2.2R	T-7F
SRACR/L1212H06	CSTB-2.5	T-8F
SRACR1616H05	CSTB-2.2R	T-7F
SRACR/L1616H06	CSTB-2.5	T-8F
SRACR/L1616H08	CSTB-3	T-9F
SRACR/L2020K05	CSTB-2.2R	T-7F
SRACR/L2020K06	CSTB-2.5	T-8F
SRACR/L2020K08	CSTB-3	T-9F
SRACR/L2525M05	CSTB-2.2R	T-7F
SRACR/L2525M06	CSTB-2.5	T-8F
SRACR/L2525M08	CSTB-3	T-9F

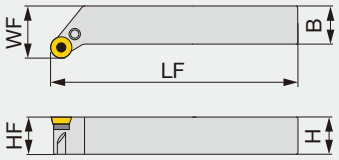
Reference pages: SRACR/L: Inserts → B130 -

PRGCR/L

Lever-lock toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	HF	WF	Insert
PRGCR/L2020K10	20	20	125	20	25	RCMM1003...
PRGCR/L2525M12	25	25	150	25	32	RCM*1204...
PRGCR/L3225P16	32	25	170	32	32	RCM*1606...
PRGCR/L3232P20	32	32	170	32	40	RCM*2006...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGCR/L2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRGCR/L2525M12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRGCR/L3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRGCR/L3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker shape	RS 	61 
Cutting conditions	B016	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B018

K

Application	Heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker shape	AL 
Cutting conditions	B022

S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker shape	RS 	61 
Cutting conditions	B024	

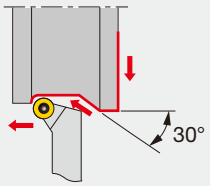
Reference pages: PRGCR/L: Inserts → B130 -

RC

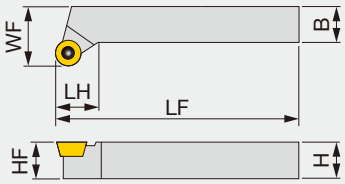
**Round,
with hole
Positive 7°**

SRGCR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
SRGCR1212H05	12	12	100	9.5	12	16	RCMT0502...
SRGCR/L1212H06	12	12	100	10	12	16	RC*T0602...
SRGCR/L1616H05	16	16	100	9.5	16	20	RCMT0502...
SRGCR/L1616H06	16	16	100	10	16	20	RC*T0602...
SRGCR/L1616H08	16	16	100	11	16	20	RC*T0803...
SRGCR/L2020K05	20	20	125	11.2	20	25	RCMT0502...
SRGCR/L2020K06	20	20	125	12	20	25	RC*T0602...
SRGCR/L2020K08	20	20	125	12.7	20	25	RC*T0803...
SRGCR/L2020K10	20	20	125	14	25	25	RC*T1003...
SRGCR/L2525M05	25	25	150	14.7	25	32	RCMT0502...
SRGCR/L2525M06	25	25	150	15	25	32	RC*T0602...
SRGCR/L2525M08	25	25	150	16.2	25	32	RC*T0803...
SRGCR/L2525M10	25	25	150	17.5	25	32	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRGCR1212H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1212H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1616H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2020K06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2020K08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRGCR/L2525M05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2525M06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2525M08	CSTB-3	-	-	-	T-9F
SRGCR/L2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker shape	RS 	61 
Cutting conditions	B016	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B018

K

Application	Heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker shape	AL 
Cutting conditions	B022

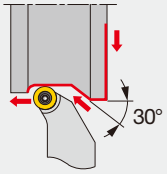
S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker shape	RS 	61 
Cutting conditions	B024	

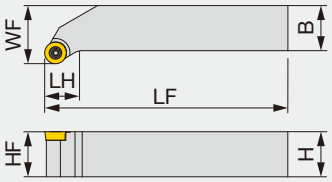
Reference pages: SRGCR/L: Inserts → B130 -

SRGCR/L-6F

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert	Torque
SRGCR/L164-6F	1.000	1.000	6.000	0.690	1.000	1.250	RCMT1204M0-6RS/-6RM	2.21

Metric	H	B	LF	LH	HF	WF	Insert	Torque*
SRGCR/L2525M12-6F	25	25	150	18.6	25	32	RCMT1204M0-6RS/-6RM	3

Torque: Recommended clamping torque: lb·ft (*N·m)

SPARE PARTS

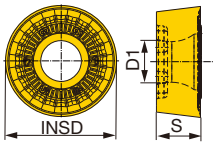
Designation	Clamping screw	Lubricant	Wrench
SRGCR/L...	CSTB-4	M-1000	T-15F

INSERT

RCMT

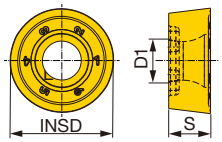


6RS





6RM



P	Steel	★	★					★			
M	Stainless	☆									
K	Cast iron	☆	☆					☆			
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	Coated						Cermet							INSD (in)	S (in)	D1 (in)
	T9215	T9225					NS9530									
RCMT1204M0-6RS	●	●					●							0.472	0.187	0.203
RCMT1204M0-6RM	●	●					●							0.472	0.187	0.203

● : Line up

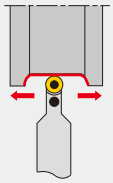
Reference pages: SRGCR/L-6F: Standard cutting conditions → C138

RC

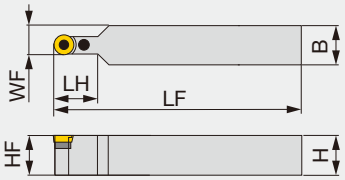
Round,
with hole
Positive 7°

PRDCN

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	Insert
PRDCN2020K10	20	20	125	22.5	20	15	RCMM1003...
PRDCN2525M12	25	25	150	24	25	18.5	RCM*1204...
PRDCN3225P12	32	25	170	24	32	18.5	RCM*1204...
PRDCN3225P16	32	25	170	28	32	20.5	RCM*1606...
PRDCN3232P20	32	32	170	32	32	26	RCM*2006...
PRDCN4040R25	40	40	200	42	40	32.5	RCM*2507...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRDCN2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRDCN**25*12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRDCN3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRDCN3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C
PRDCN4040R25	LSR84C	LCS8C	P-4	LSP6	LCL8C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B016	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B018

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B022

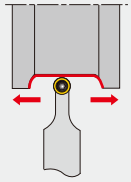
S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B024	

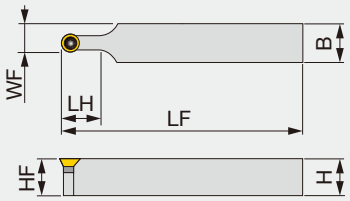
Reference pages: PRDCN: Inserts → B130

SRDCN

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	Insert
SRDCN2020K06	20	20	125	12	20	13	RC*T0602...
SRDCN2020K08	20	20	125	16	20	14	RC*T0803...
SRDCN2020K10	20	20	125	20.3	25	15	RC*T1003...
SRDCN2525M06	25	25	150	12	25	15.5	RC*T0602...
SRDCN2525M08	25	25	150	16	25	16.5	RC*T0803...
SRDCN2525M10	25	25	150	20.3	25	17.5	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRDCN2020K06	CSTB-2.5	-	-	-	T-8F
SRDCN2020K08	CSTB-3	-	-	-	T-9F
SRDCN2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRDCN2525M06	CSTB-2.5	-	-	-	T-8F
SRDCN2525M08	CSTB-3	-	-	-	T-9F
SRDCN2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B016	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B018

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B022

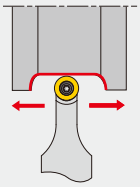
S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B024	

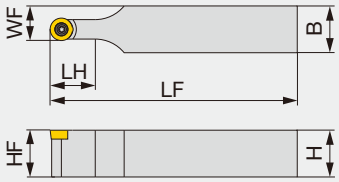
Reference pages: SRDCN: Inserts → B130

SRDCN-6F

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Inch	H	B	LF	LH	HF	WF	Insert	Torque
SRDCN164-6F	1.000	1.000	6.000	0.950	1.000	0.740	RCMT1204M0-6RS/-6RM	2.21

Metric	H	B	LF	LH	HF	WF	Insert	Torque*
SRDCN2525M12-6F	25	25	150	24.1	25	18.5	RCMT1204M0-6RS/-6RM	3

Torque: Recommended clamping torque: lb·ft (*N·m)

SPARE PARTS

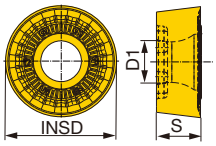
Designation	Clamping screw	Lubricant	Wrench
SRDCN...	CSTB-4	M-1000	T-15F

INSERT

RCMT

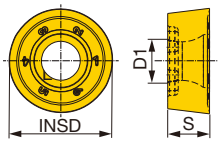


6RS





6RM



		Coated			Cermet					
	Designation	T9215	T9225		NS9530			INSD (in)	S (in)	D1 (in)
P	Steel	★	★		★					
M	Stainless	☆								
K	Cast iron	☆	☆		☆					
N	Non-ferrous									
S	Superalloys									
H	Hard materials									
	RCMT1204M0-6RS	●	●		●			0.472	0.187	0.203
	RCMT1204M0-6RM	●	●		●			0.472	0.187	0.203

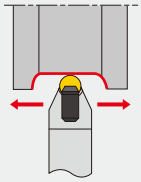
★ : First choice
☆ : Second choice
● : Line up

C D F G H R S T V W Y OTHERS

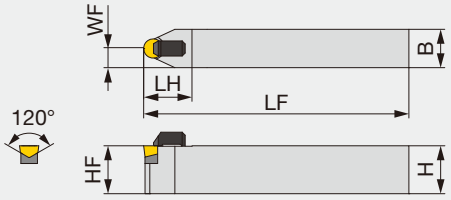
Reference pages: SRDCN-6F: Standard cutting conditions → C138

TRDCN

Toolholder with carbide clamping plate, with 45° approach angle, for positive round ceramic inserts with V-bottom shape



Cutting edge style **D**



Inch	H	B	LF	LH	HF	WF	RE**	Insert
CRDCN 85-3L-120	1.250	1.000	6.800	1.181	1.250	0.500	0.187	RCGX 350...
CRDCN 85-4L-120	1.250	1.000	6.800	1.260	1.250	0.500	0.250	RCGX 450...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
TRDCN3225P09-120	32	25	170	30	32	12.5	4.76	RCGX090700...
TRDCN3225P12-120	32	25	170	32	32	12.5	6.35	RCGX120700...

**RE: Standard corner radius

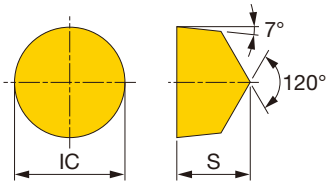
SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Wrench 1	Wrench 2
TRDCN3225P09-120	BCL6-20A	BH-M6X1X25	CBRS-09	BH-M2.5X0.45X10	P-4	P-1.5
TRDCN3225P12-120	BCL6	BH-M6X1X25	CBRS-12	BH-M2.5X0.45X10	P-4	P-1.5

INSERT

RCGX-E/T1





P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	★
H	Hard materials		

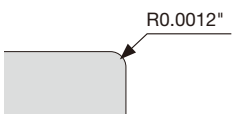
★ : First choice

Designation Inch	Designation Metric	Edge prep.*	Ceramic TS200	Ceramic TS300	RE (in)	IC (in)	S (in)
RCGX 350-E	RCGX090700-E	E	●	●	-	0.375	0.313
RCGX 350-T1	RCGX090700-T1	T1	●	●	-	0.375	0.313
RCGX 450-E	RCGX120700-E	E	●	●	-	0.500	0.313
RCGX 450-T1	RCGX120700-T1	T1	●	●	-	0.500	0.313

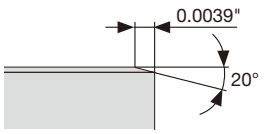
* Types of cutting edge preparations

● : Line up

E: Low cutting force



T1: Strong cutting edge



Reference pages: TRDCN: Standard cutting conditions → C136

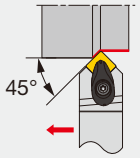
SN

Square with hole

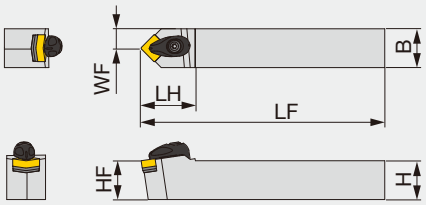
TURNING A

ASDNN

Double-clamp toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASDNN124-A	0.750	0.750	4.500	1.380	0.750	0.375	0.031	SN** 43...	2.2
ASDNN164-A	1.000	1.000	6.000	1.380	1.000	0.500	0.031	SN** 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASDNN2020K12-A	20	20	125	35	20	10	0.8	SN**1204...	3
ASDNN2525M12-A	25	25	150	35	25	12.5	0.8	SN**1204...	3

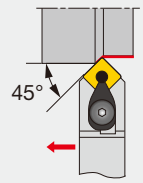
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

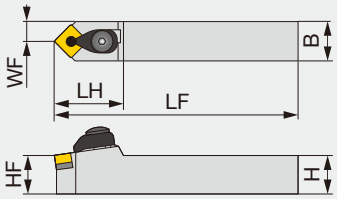
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASDNN...	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

DSDNN

One-Double toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSDNN2020K12	20	20	125	36	20	10	0.8	SN**1204...
DSDNN2525M12	25	25	150	36	25	12.5	0.8	SN**1204...

Note: Except for TRS, TU, TUS, 57, and 65-type chipbreaker inserts **RE: Standard corner radius

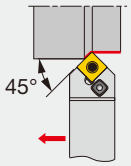
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSDNN...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

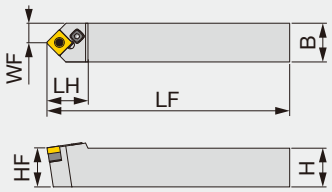
Reference pages: ASDNN, DSDNN: Inserts → B077 -, CBN → B180, PCD → B211

PSDNN

Lever-lock toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSDNN1616	16	16	100	22	16	8	0.8	SN**0903...
PSDNN2020	20	20	125	30	20	10.3	0.8	SN**1204...
PSDNN2525	25	25	150	30	25	12.8	0.8	SN**1204...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSDNN1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSDNN2020	LSS42	LCS4	P-3	LSP4	LCL4
PSDNN2525	LSS42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

Reference pages: PSDNN: Inserts → B077 -, CBN → B180, PCD → B211

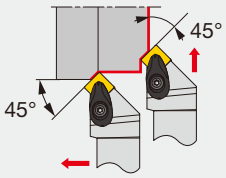
SN

Square with hole

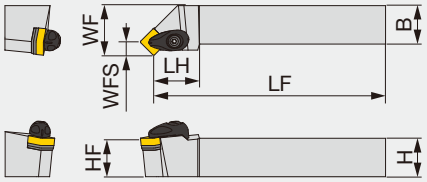
TURNING A

ASSNR/L

Double-clamp toolholder with 45° approach angle (S-style), for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	WFS	RE**	Insert	Torque
ASSNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.327	0.031	SN** 43...	2.2
ASSNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.327	0.031	SN** 43...	2.2
ASSNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.500	0.406	0.031	SN** 54...	4.7
ASSNR/L206-A	1.250	1.250	7.000	1.500	1.250	1.500	0.492	0.031	SN** 64...	4.7
ASSNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.750	0.406	0.031	SN** 54...	4.7
ASSNR/L246-A	1.500	1.500	8.000	1.500	1.500	1.750	0.492	0.031	SN** 64...	4.7

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert	Torque*
ASSNR/L2020K12-A	20	20	125	30	20	25	8.3	0.8	SN**1204...	3
ASSNR/L2525M12-A	25	25	150	30	25	32	8.3	0.8	SN**1204...	3
ASSNR/L2525M15-A	25	25	150	25	25	32	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P15-A	32	32	170	25	32	40	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P19-A	32	32	170	27.5	32	40	12.5	1.2	SN**1906...	6.4
ASSNR/L4040S19-A	40	40	250	27.5	40	50	12.5	1.2	SN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

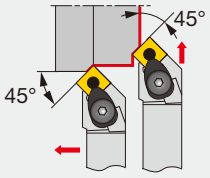
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASSNR/L**4-A, ASSNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASSNR/L**5-A, ASSNR/L**15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASSNR/L**6-A, ASSNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

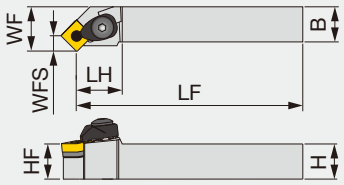
Reference pages: ASSNR/L: Inserts → B077 -, CBN → B180, PCD → B211

DSSNR/L

"One-Double" toolholder with 45° approach angle, for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert
DSSNR/L2020K12	20	20	125	34.3	20	25	8.3	0.8	SN**1204...
DSSNR/L2525M12	25	25	150	34.3	25	32	8.3	0.8	SN**1204...

Note: Except for TRS, TU, TUS, 57, and 65-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSSNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

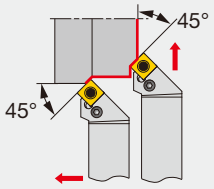
Reference pages: DSSNR/L: Inserts → B077 -, CBN → B180, PCD → B211

SN

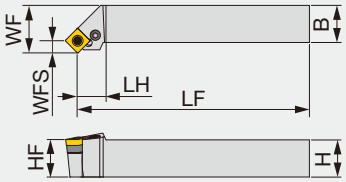
Square with hole

PSSNR/L

Lever-lock toolholder with 45° approach angle, for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert
PSSNR/L1616	16	16	94	16	16	20	6.1	0.8	SN**0903...
PSSNR/L2020	20	20	116	21	20	25	8.3	0.8	SN**1204...
PSSNR/L2525	25	25	141	21	25	32	8.3	0.8	SN**1204...
PSSNR3225	32	25	161	21	32	32	8.3	0.8	SN**1204...
PSSNR/L3232	32	32	157.5	27.5	32	40	12.5	1.2	SN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSSNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSSNR/L2020	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L**25	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

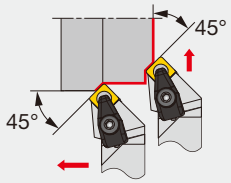
Reference pages: PSSNR/L: Inserts → B077 -, CBN → B180, PCD → B211

SN

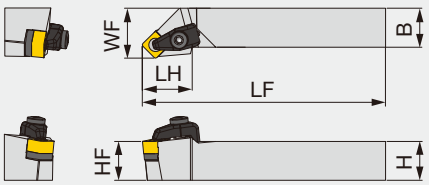
Square
without hole

DIMPLEFX
CSSNR/L-RD

Double-clamp toolholder with 45° approach angle, for negative square ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CSSNR/L16M45-RD	1.000	1.000	6.000	1.260	1.000	1.250	0.047	SNGD 45...	3.0

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CSSNR/L2525M1207-RD	25	25	150	32	25	32	1.2	SNGD1207...	4

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CSSNR/L...	CCP4-A	CCS4-A	CS44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker Shape	- 
Cutting conditions	C136

Reference pages: CSSNR/L-RD: Insert → B085
Standard cutting conditions → C136

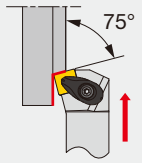
SN

Square with hole

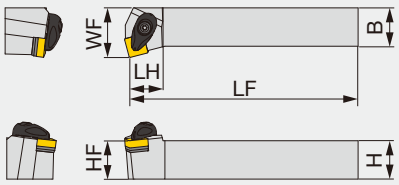
TURNING

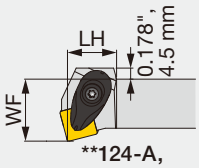
ASKNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASKNR/L124-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	SN** 43...	2.21
ASKNR/L164-A	1.000	1.000	6.000	1.000	1.000	1.260	0.031	SN** 43...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASKNR/L2020K12-A	20	20	125	20	20	25	0.8	SN**1204...	3
ASKNR/L2525M12-A	25	25	150	22	25	32	0.8	SN**1204...	3

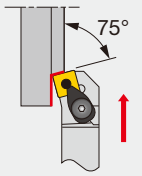
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

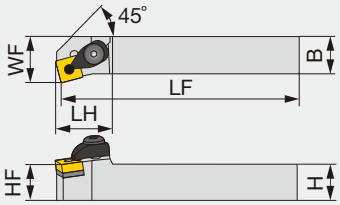
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASKNR/L...	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

DSKNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSKNR/L2020K12	20	20	125	31	20	25	0.8	SN**1204...
DSKNR/L2525M12	25	25	150	31	25	32	0.8	SN**1204...

Note: Except for TRS, TU, TUS, 57, and 65-type chipbreaker inserts
**RE : Standard corner radius

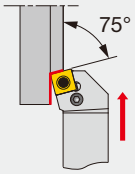
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSKNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

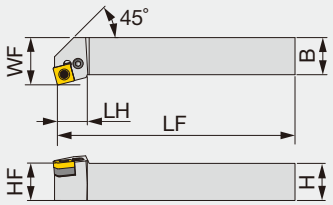
Reference pages: ASKNR/L, DSKNR/L: Inserts → B077 -, CBN → B180, PCD → B211

PSKNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSKNR/L1616	16	16	100	17	16	25	0.8	SN**0903...
PSKNR/L2020	20	20	125	22	20	25	0.8	SN**1204...
PSKNR/L2525	25	25	150	22	25	32	0.8	SN**1204...
PSKNR3232	32	32	170	40	32	40	1.2	SN**1906...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSKNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSKNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSKNR3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

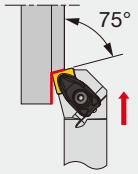
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

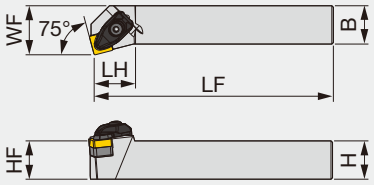
Reference pages: PSKNR/L: Inserts → B077 -, CBN → B180, PCD → B211

TSKNR/L-F

Toolholder with carbide clamping plate, with 75° approach angle, for negative square ceramic inserts without hole



Cutting edge style **K**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
TSKNR/L 16-45D-F	1.000	1.000	6.000	1.063	1.000	1.250	0.032	SNGN 453...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
TSKNR/L2525M1207-F	25	25	150	27	25	32	0.8	SNGN1207...

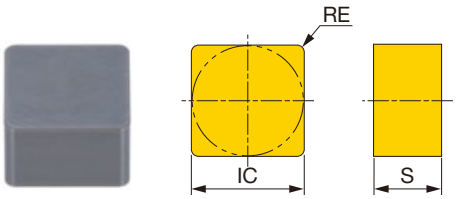
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TSKNR/L2525M1207-F	DCLS-4F	DLS-4A	TSS-42	BH-40050-A	DSP-4A	T-15F	P-3

INSERT

SNGN-T1



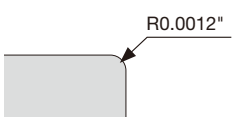
				★ : First choice
P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous			
S	Superalloys	★	★	
H	Hard materials			

Designation		Edge prep.*	Ceramic		RE (in)	IC (in)	S (in)
Inch	Metric		TS200	TS300			
SNGN 453-T1	SNGN120712-T1	T1		●	0.047	0.500	0.313

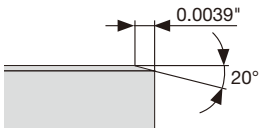
* Types of cutting edge preparations

● : Line up

E: Low cutting force



T1: Strong cutting edge



Reference pages: TSKNR/L-F: Standard cutting conditions → C136

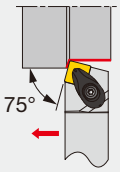
SN

Square
with hole

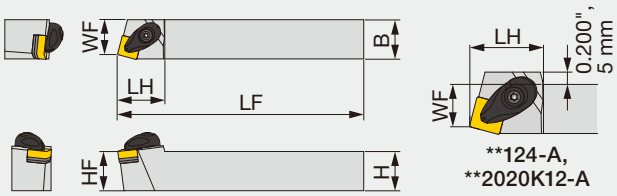
TURNING A

ASBNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASBNR/L124-A	0.750	0.750	4.500	1.180	0.750	0.625	0.031	SN** 43...	2.2
ASBNR/L164-A	1.000	1.000	6.000	1.180	1.000	0.875	0.031	SN** 43...	2.2
ASBNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.100	0.031	SN** 54...	4.7
ASBNR/L206-A	1.250	1.250	7.000	1.625	1.250	1.100	0.031	SN** 64...	4.7
ASBNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.350	0.031	SN** 54...	4.7
ASBNR/L246-A	1.500	1.500	8.000	1.625	1.500	1.350	0.031	SN** 64...	4.7

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASBNR/L2020K12-A	20	20	125	30	20	17	0.8	SN**1204...	3
ASBNR/L2525M12-A	25	25	150	30	25	22	0.8	SN**1204...	3
ASBNR/L2525M15-A	25	25	150	42.5	25	22	1.2	SN**1506...	6.4
ASBNR/L3232P15-A	32	32	170	42.5	32	27	1.2	SN**1506...	6.4
ASBNR/L3232P19-A	32	32	170	47.5	32	27	1.2	SN**1906...	6.4
ASBNR/L4040S19-A	40	40	250	47.5	40	35	1.2	SN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASBNR/L**4-A, ASBNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASBNR/L**5-A, ASBNR/L**15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASBNR/L**6-A, ASBNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

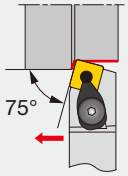
Reference pages: ASBNR/L: Inserts → B077 -, CBN → B180, PCD → B211

SN

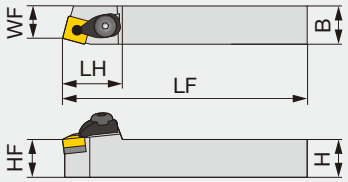
Square with hole

DSBNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSBNR/L2020K12	20	20	125	35	20	17	0.8	SN**1204...
DSBNR/L2525M12	25	25	150	35	25	22	0.8	SN**1204...

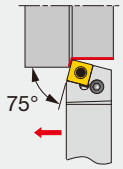
Note: Except for TRS, TU, TUS, 57, and 65-type chipbreaker inserts **RE: Standard corner radius

SPARE PARTS

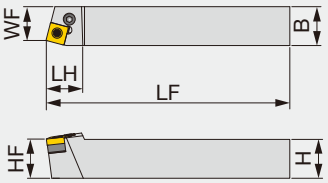
Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSBNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

PSBNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSBNR/L1616	16	16	100	22	16	13	0.8	SN**0903...
PSBNR/L2020	20	20	125	28	20	17	0.8	SN**1204...
PSBNR/L2525	25	25	150	24	25	22	0.8	SN**1204...
PSBNR/L3232	32	32	170	40	32	27	1.2	SN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSBNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSBNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSBNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	DIA	P
Cutting conditions	B010	

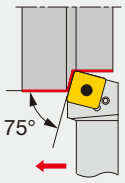
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

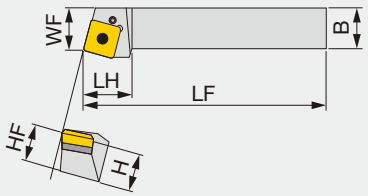
Reference pages: DSBNR/L, PSBNR/L: Inserts → B077 -, CBN → B180 -, PCD → B211

HSRNR/L

Retract-pin toolholder with 75° approach angle, for negative square inserts



Cutting edge style **R**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
HSRNR/L4040R	40	40	200	50	40	43	1.6	SNMM3109...
HSRNR/L5050S	50	50	250	60	50	53	1.6	SNMM3109...

**RE: Standard corner radius

SPARE PARTS

Designation	Pin	Clamping screw	Shim	Wrench
HSRNR/L...	SW99	LS-8	NAS-04	P-4

INSERT SELECTION

P

Application	Heavy cutting
Grade	T9225
Chipbreaker Shape	65 
Cutting conditions	B004

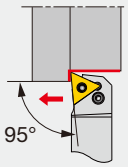
Reference pages: HSRNR/L: Inserts → B083

TN

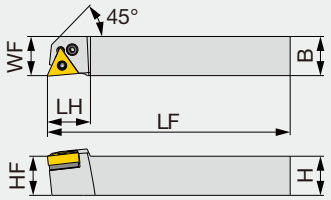
Triangular with hole

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

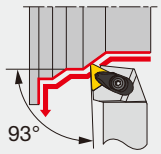
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTL2NR/L...	LST317 D30	LCS3	P-2.5	LSP3	LCL3

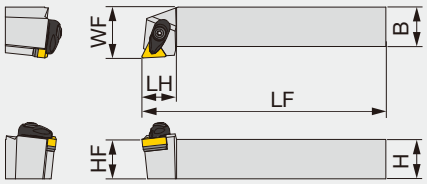
TURNINGA

ATJNR/L

Double-clamp toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATJNR/L123-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	TN** 33...	2.2
ATJNR/L163-A	1.000	1.000	6.000	0.875	1.000	1.250	0.031	TN** 33...	2.2
Metric	**H**	**B**	**LF**	**LH**	**HF**	**WF**	**RE****	**Insert**	**Torque***
ATJNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATJNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

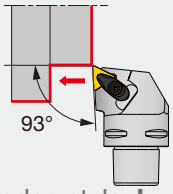
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATJNR/L...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

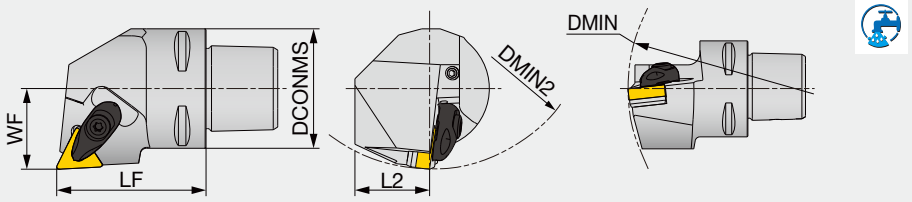
Reference pages: PTL2NR/L, ATJNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

C-ATJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4ATJNR/L27050-16N	40	50	25	27	140	110	0.8	TN**1604...

Applicable for 7 MPa (1015 PSI) coolant

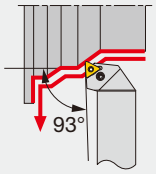
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
C4ATJNR/L**-16N	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

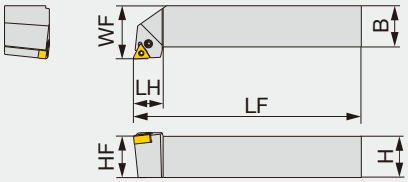
ISO Eco TURN

PTJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTJNR/L2525M1104	25	25	150	18	25	32	0.8	TN**1104...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTJNR/L2525M1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: C-ATJNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212
PTJNR/L-Eco: Inserts → B087 -

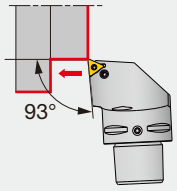
TN

Triangular with hole

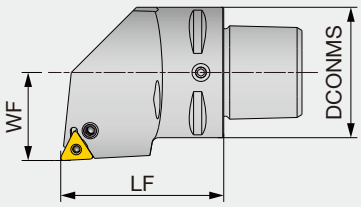
TUNGCAP

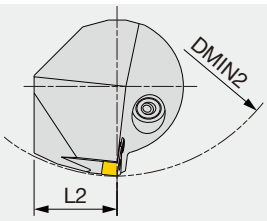
C-PTJNR/L

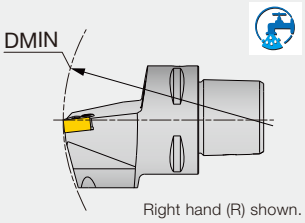
Lever-lock external turning toolholder (P type)



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104...

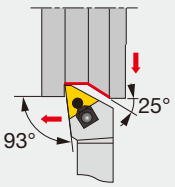
**RE: The holder measurements are true with this insert radius
Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

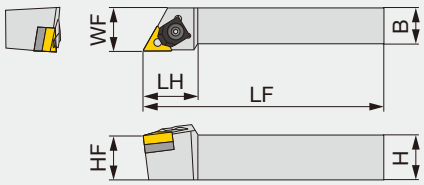
Designation	Clamping screw	Wrench	Lever	Coolant parts
C4PTJNR/L27050-1104N	LCS23A	P-2.5	LCL23	SATZ-M8X1-M3

WTJNR/L

Wedge-on toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
WTJNR2020	20	20	125	31	20	25	0.8	TN**1604...
WTJNR/L2525M3	25	25	150	31	25	32	0.8	TN**1604...

**RE: Standard corner radius

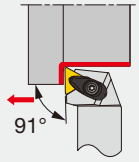
SPARE PARTS

Designation	Clamp	E-ring	Nut	Pin	Clamping screw	Shim	Wrench
WTJNR2020	WCW3	5103-25	WCN3S	WCP3S	WCS3	WST33	P-3
WTJNR/L2525M3	WCW3	5103-25	WCN3	WCP3S	WCS3	WST33	P-3

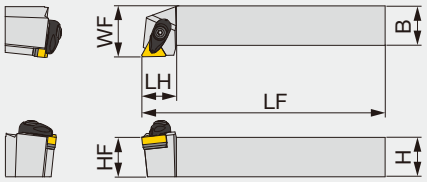
Reference pages: C-PTJNR/L: Inserts → B087 -
WTJNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

ATGNR/L

Double-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATGNR/L123-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	TN** 33...	2.2
ATGNR/L163-A	1.000	1.000	6.000	0.875	1.000	1.250	0.031	TN** 33...	2.2
ATGNR/L164-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	TN** 43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATGNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATGNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3
ATGNR/L2525M22-A	25	25	150	26	25	32	0.8	TN**2204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATGNR/L**3-A, ATGNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATGNR/L**4-A, ATGNR/L**22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

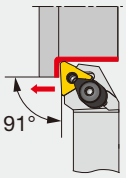
Reference pages: ATGNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

TN

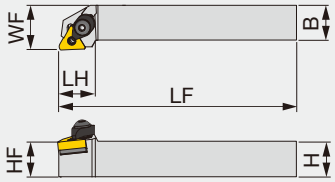
Triangular with hole

DTGNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DTGNR/L2020K16	20	20	125	21	20	25	0.8	TN**1604...
DTGNR/L2525M16	25	25	150	21	25	32	0.8	TN**1604...
DTGNR/L2525M22	25	25	150	28	25	32	0.8	TN**2204...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

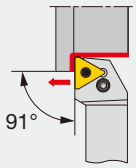
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTGNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTGNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

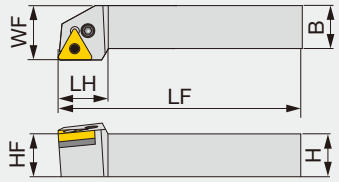
ISOECOTURN

PTGNR/L

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTGNR/L1223	0.750	0.750	4.500	0.750	0.750	1.000	0.031	TN** 23...	1.5
PTGNR/L1623	1.000	1.000	6.000	0.750	1.000	1.250	0.031	TN** 23...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L1616	16	16	100	22	16	20	0.8	TN**1604...	2
PTGNR/L2020K1104	20	20	125	20	20	25	0.8	TN**1104...	2
PTGNR/L2020	20	20	125	22	20	25	0.8	TN**1604...	2
PTGNR/L2525M1104	25	25	150	20	25	32	0.8	TN**1104...	2
PTGNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...	2
PTGNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...	3
PTGNR3225P4	32	25	170	28	32	32	0.8	TN**2204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

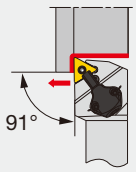
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTGNR/L**23, PTGNR/L**1104	-	LCS23A	P-2.5	-	LCL23
PTGNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M4	LST42	LCS4	P-3	LSP4	LCL4
PTGNR3225P4	LST42	LCS4	P-3	LSP4	LCL4

Reference pages: DTGNR/L, PTGNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

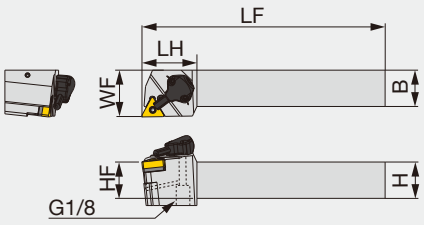
PTGNR/L-CHP

Tube connection

Lever lock toolholders – 91° approach angle.
For negative triangle insert. High-pressure coolant capability.



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTGNR/L1223-CHP	0.750	0.750	4.500	1.500	0.750	1.250	0.031	TN** 23...	1.48
PTGNR/L123-CHP	0.750	0.750	4.500	1.500	0.750	1.250	0.031	TN** 33...	1.48
PTGNR/L1623-CHP	1.000	1.000	6.000	1.500	1.000	1.250	0.031	TN** 23...	1.48
PTGNR/L163-CHP	1.000	1.000	6.000	1.500	1.000	1.250	0.031	TN** 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104-CHP	20	20	125	38	20	32	0.8	TN**1104...	2
PTGNR/L2020K16-CHP	20	20	125	38	20	32	0.8	TN**1604...	2
PTGNR/L2525M1104-CHP	25	25	150	38	25	32	0.8	TN**1104...	2
PTGNR/L2525M16-CHP	25	25	150	38	25	32	0.8	TN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PTGNR/L**23-CHP, PTGNR/L**1104-CHP	-	LCS23A	P-2.5	LSP3	LCL23
PTGNR/L123, 163-CHP PTGNR/L**16-CHP	LST317	LCS3	P-2.5	LSP3	LCL3

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PTGNR/L**23-CHP, PTGNR/L**1104-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PTGNR/L123, 163-CHP PTGNR/L**16-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PTGNR/L-CHP: Inserts→B087 -, CBN → B182 -, PCD → B212
Parts for coolant hose → C133

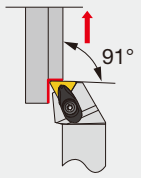
TN

Triangular with hole

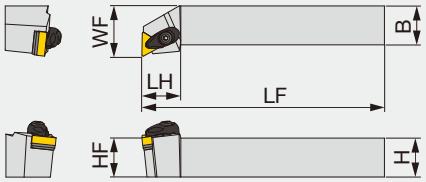
TURNING

ATFNR/L

Double-clamp toolholder for facing with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATFNR/L123-A	0.750	0.750	4.500	1.000	0.750	1.000	0.031	TN** 33...	2.2
ATFNR/L163-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	TN** 33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATFNR/L2020K16-A	20	20	125	25	20	25	0.8	TN**1604...	3
ATFNR/L2525M16-A	25	25	150	25	25	32	0.8	TN**1604...	3
ATFNR/L2525M22-A	25	25	150	29	25	32	0.8	TN**2204...	3

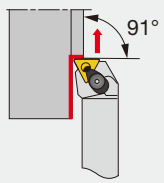
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

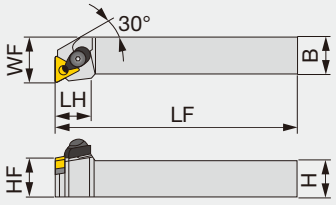
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATFNR/L**3-A, ATFNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATFNR/L**22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

DTFNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DTFNR/L2020K16	20	20	125	23	20	25	0.8	TN**1604...
DTFNR/L2525M16	25	25	150	23	25	32	0.8	TN**1604...
DTFNR/L2525M22	25	25	150	31	25	32	0.8	TN**2204...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

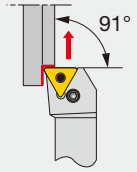
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTFNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTFNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

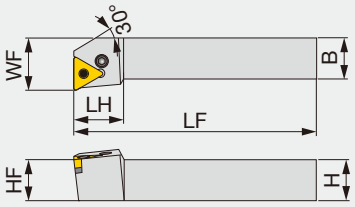
Reference pages: ATFNR/L, DTFNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

PTFNR/L

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTFNR/L1616	16	16	100	22	16	20	0.8	TN**1604...	2
PTFNR/L2020K1104	20	20	125	16	20	25	0.8	TN**1104...	2
PTFNR/L2020	20	20	125	22	20	25	0.8	TN**1604...	2
PTFNR/L2525M1104	25	25	150	22	25	32	0.8	TN**1104...	2
PTFNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...	2
PTFNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...	3
PTFNR/L3225P4	32	25	170	28	32	32	0.8	TN**2204...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench	Spring pin	Lever
PTFNR/L1616, 2020	LST317	-	LCS3	P-2.5	LSP3	LCL3
PTFNR/L**1104	-	LCS23A	-	P-2.5	-	LCL23
PTFNR/L2525M3	LST317	-	LCS3	P-2.5	LSP3	LCL3
PTFNR/L**25*4	LST42	-	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PTFNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

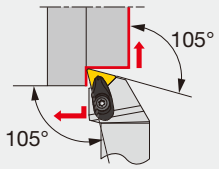
TN

Triangular
with hole

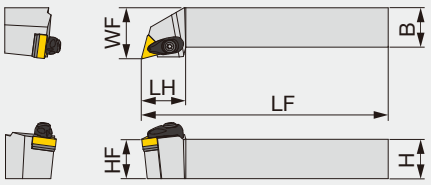
TURNING A

ATQNR/L

Double-clamp toolholder with 105° approach angle, for negative 60° triangular inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATQNR/L123-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	TN** 33...	2.2
ATQNR/L163-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	TN** 33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATQNR/L2020K16-A	20	20	125	28	20	25	0.8	TN**1604...	3
ATQNR/L2525M16-A	25	25	150	28	25	32	0.8	TN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATQNR/L...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

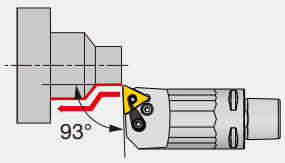
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: ATQNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

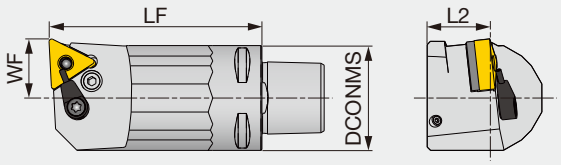
TUNGCAP

C-PTUNL-CHP

Lever-lock toolholder, with 93° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3PTUNL18040-16-CHP	32	40	19	18	0.8	TN**1604...
C3PTUNL18065-16-CHP	32	65	19	18	0.8	TN**1604...

Applicable for 14 MPa (2031 PSI) coolant
Cannot be used for boring

SPARE PARTS

Designation	Coolant unit	Shim	Lever	Clamping screw	Spring pin	Wrench
C3PTUNL...	S-CU-CHP	LST317	LCL3	LCS3	LSP3	P-2.5

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: C-PTUNL-CHP: Inserts→ B087 -, CBN → B182 -, PCD → B212
Parts for coolant hose → C133

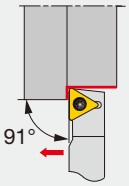
TC



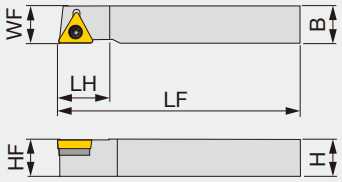
Triangular with hole Positive 7°

STACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
STACR/L1616H16	16	16	100	22.5	16	16	0.8	TC**16T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
STACR/L...	CSTB-3.5L	DTS5-3.5	SST32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Breaker Shape	AL (with rake)
Cutting conditions	B022

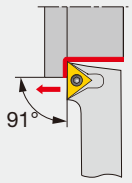
S

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B024		

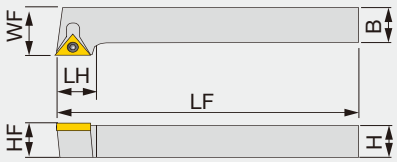
Reference pages: STACR/L: Inserts → B138 -, CBN → B198

STGCR/L

Screw-on system toolholder with 91° approach angle for positive 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
STGCR/L062	0.375	0.375	2.500	0.625	0.375	0.500	TC** 21.5...
STGCR/L082	0.500	0.500	3.500	0.625	0.500	0.625	TC** 21.5...
STGCR/L103	0.625	0.625	4.000	0.750	4.000	0.750	TC** 32.5...
STGCR/L123	0.750	0.750	4.500	0.750	4.500	1.000	TC** 32.5...

Except for 57-type chipbreaker inserts

SPARE PARTS

Designation	Shim	Shim screw	Clamp screw	Wrench
STGCR/L0...	-	-	CSTB2.5	T-7F
STGCR/L1...	SKTP-343	SRS-3	CSTB3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B016			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing to medium cutting
Grade	DX120	KS05F
Breaker Shape	DIA	AL (with rake)
Cutting conditions	B022	

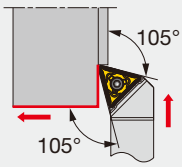
S

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B024			

Reference pages: STGCR/L: Inserts → B138 -, CBN → B198, PCD → B216

STXCR/L-CHP-MC

Screw-on toolholder with 105° approach angle, for positive triangular inserts



Cutting edge style **X**

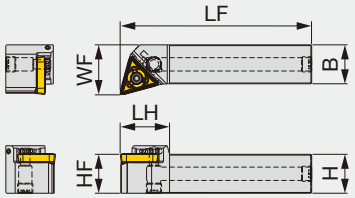


Fig. 1

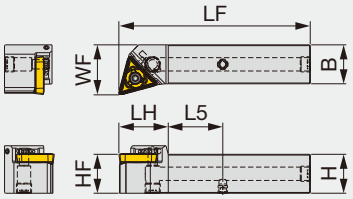


Fig. 2

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	L5	Insert	Torque	Fig.
STXCR/L169-CHP-MC	1.000	1.000	6.000	1.250	1.000	1.250	-	3C-TCMT29X6...	3.69	1

Metric	H	B	LF	LH	HF	WF	L5	Insert	Torque*	Fig.
STXCR/L2525X29-CHP-MC	25	25	122	32	25	32	35	3C-TCMT29X6...	5	2

Torque: Recommended clamping torque: lb·ft (*N·m)

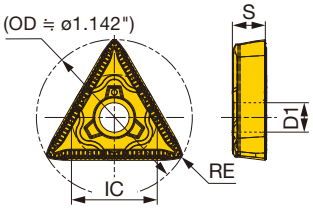
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Coolant plug
STXCR/L...	CSTB-5	H-TB2W	BT20M	PLUGG1/8-6.5TL360

INSERT

3C-TCMT**-TM





		Coated
		T9215
P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated T9215	IC (in)	S (in)	D1 (in)
3C-TCMT29X608-TM	0.031	●	0.630	0.242	0.217

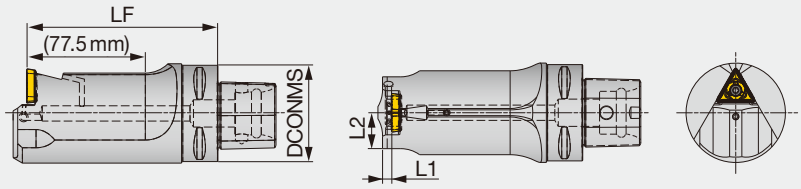
Please note that 3C-TCMT... insert is not recommended for pull face-turning method (pulling the insert away from the part center).

● : Line up

Reference pages: Standard cutting conditions → C134

C6STECN-Y-CHP

Screw-on Y-axis turning toolholder with TungCap connection, for positive triangular inserts



Cutting edge style **E**

Metric	SS	DCONMS	LF	L1	L2	RE	Insert	Torque
C6STECN00125-29-Y-CHP	C6	63	125	6	23.5	0.8	3C-TCMT29X6...	5

Torque: Recommended clamping torque: N·m

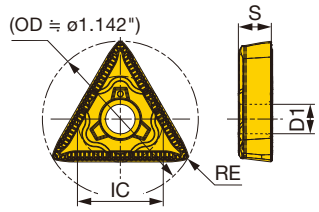
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit
C6STECN00125-29-Y-CHP	CSTB-5	H-TB2W	BT20M

INSERT

3C-TCMT**-TM





		Coated
		T9215
P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated T9215	IC (in)	S (in)	D1 (in)
3C-TCMT29X608-TM	0.031	●	0.630	0.242	0.217

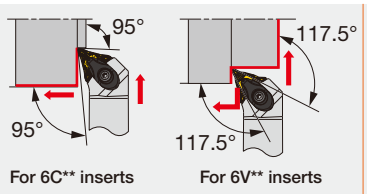
Please note that 3C-TCMT... insert is not recommended for pull face-turning method (pulling the insert away from the part center).

● : Line up

Reference pages: Standard cutting conditions → C134

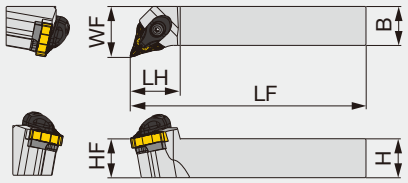
ATXOR/L

Double-clamp toolholder with 95°/117.5° approach angle, for negative 80°/35° triangular inserts



For 6C** inserts For 6V** inserts

Cutting edge style **X**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATXOR/L128-A	0.750	0.750	4.500	1.260	0.750	1.000	0.031	6C/6V-TOMG2506...	2.21
ATXOR/L168-A	1.000	1.000	6.000	1.260	1.000	1.250	0.031	6C/6V-TOMG2506...	2.21
ATXOR/L208-A	1.250	1.250	7.000	1.260	1.250	1.500	0.031	6C/6V-TOMG2506...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATXOR/L2020K25-A	20	20	125	32	20	25	0.8	6C/6V-TOMG2506...	3
ATXOR/L2525M25-A	25	25	150	32	25	32	0.8	6C/6V-TOMG2506...	3
ATXOR/L3232P25-A	32	32	170	32	32	40	0.8	6C/6V-TOMG2506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

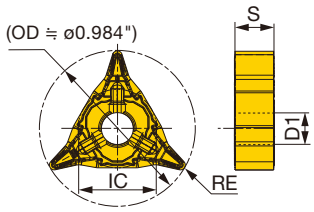
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATXOR/L**8-A, ATXOR/L**25-A	ACP4S	ACS-5W	BP-7	SP-2.5	LST33 KS15F	CSTB-3.5	T-15F

INSERT

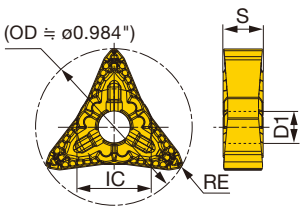
6V-TOMG**F-TSF





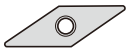
6C-TOMG**M-TM





| | | Coated | | |

VN YN

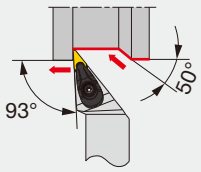
 Rhombic, 35° with hole

 Rhombic, 25° with hole

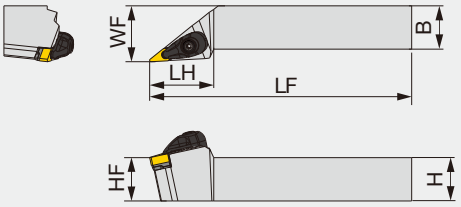
TURNING A

AVJNR/L

Double-clamp toolholder with 93° approach angle, for negative 35°/25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVJNR/L122.33-A	0.750	0.750	4.500	1.500	0.750	1.000	0.031	VN** 2.33...	2.2
AVJNR/L123-A	0.750	0.750	4.500	1.750	0.750	1.000	0.031	VN**/YN** 33...	2.2
AVJNR/L162.33-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	VN** 2.33...	2.2
AVJNR/L163-A	1.000	1.000	6.000	1.870	1.000	1.250	0.031	VN**/YN** 33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K1204-A	20	20	125	37	20	25	0.8	VN**1204...	3
AVJNR/L2020K16-A	20	20	125	43	20	25	0.8	VN**/YN**1604...	3
AVJNR/L2525M1204-A	25	25	150	37	25	32	0.8	VN**1204...	3
AVJNR/L2525M16-A	25	25	150	46	25	32	0.8	VN**/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**2.33-A, AVJNR/L**1204-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F
AVJNR/L123, 163-A, AVJNR/L**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

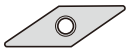
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: AVJNR/L: Inserts → B098 -, B110, CBN → B186 -, B188, PCD → B212
Parts for coolant hose → C133

VN YN

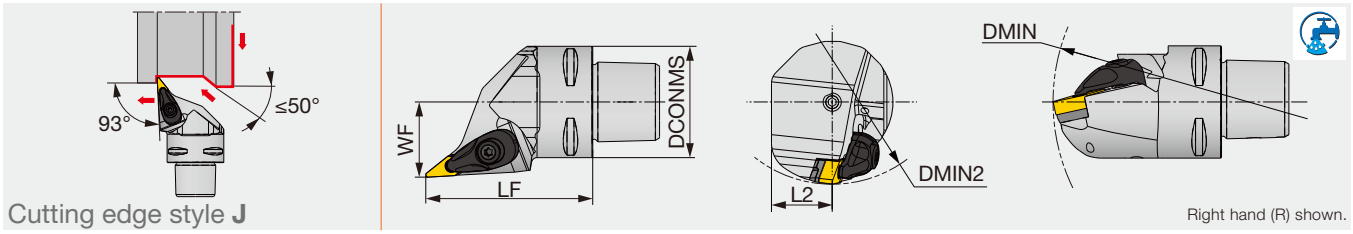
 Rhombic, 35° with hole

 Rhombic, 25° with hole

TUNGCAP

C-AVJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 35° rhombic inserts (TurningA)



Cutting edge style **J**

Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4AVJNR/L27060-1204N	40	60	20	27	140	55	0.8	VN**1204...
C6AVJNR/L45065-1204N	63	65	31.5	45	190	81	0.8	VN**1204...

**RE: The holder measurements are true with this insert radius
Applicable for 7 MPa (1015 PSI) coolant

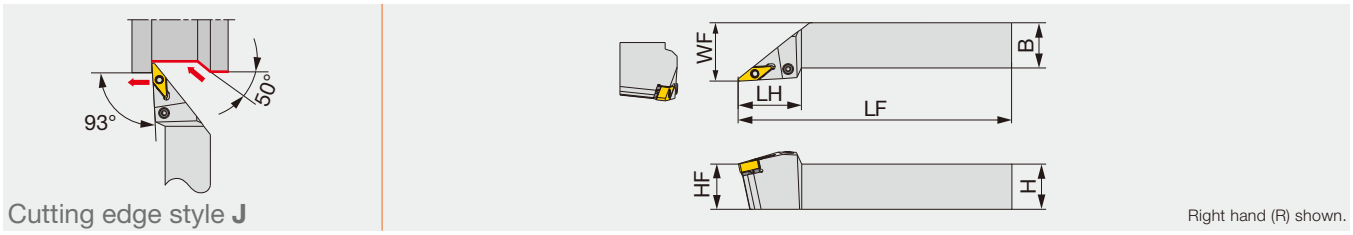
SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C4AVJNR/L...	ACP3L-E	ACS-5W	-	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C6AVJNR/L...	ACP3L-E	ACS-5W	SATZ-M10X1-M5	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F

ISOEcoTURN

PVJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVJNR/L102.33	0.625	0.625	4.000	1.380	0.625	0.875	0.031	VN** 2.33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L1616H1204	16	16	100	35	16	20	0.8	VN**1204...	2
PVJNR/L2020K1204	20	20	125	35	20	25	0.8	VN**1204...	2
PVJNR/L2525M1204	25	25	150	35	25	32	0.8	VN**1204...	2

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: The holder measurements are true with this insert radius

SPARE PARTS

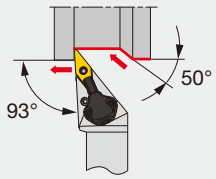
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVJNR/L...	LSV212	LCS3V	P-2.5	LSP3	LCL3V

Reference pages: AVJNR/L: Inserts → B098 -, Parts for coolant hose → C133
PVJNR/L-Eco: Inserts → B098 -

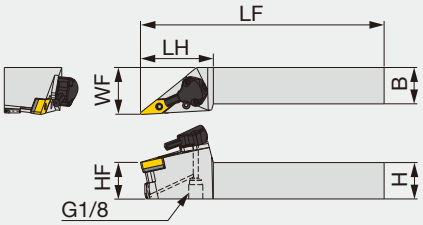
PVJNR/L-CHP

Tube connection

Lever lock toolholders – 93° approach angle.
For negative 35°/25° rhombic insert. High-pressure coolant capability.



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVJNR/L123-CHP	0.750	0.750	4.500	1.969	0.750	1.250	0.031	VN**/YN** 33...	1.48
PVJNR/L122.33-CHP	0.750	0.750	4.500	2.000	0.750	1.250	0.031	VN** 2.33...	1.48
PVJNR/L163-CHP	1.000	1.000	6.000	1.969	1.000	1.250	0.031	VN**/YN** 33...	1.48
PVJNR/L162.33-CHP	1.000	1.000	6.000	2.000	1.000	1.250	0.031	VN** 2.33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204-CHP	20	20	125	50	20	32	0.8	VN**1204...	2
PVJNR/L2020K16-CHP	20	20	125	50	20	32	0.8	VN**/YN**1604...	2
PVJNR/L2525M1204-CHP	25	25	150	50	25	32	0.8	VN**1204...	2
PVJNR/L2525M16-CHP	25	25	150	50	25	32	0.8	VN**/YN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
20Mpa (2901 PSI)

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVJNR/L**2.33-CHP, PVJNR/L**1204-CHP	LSV212	LCS3V	P-2.5	LSP3	LCL3V
PVJNR/L123, 163-CHP, PVJNR/L**16-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PVJNR/L**2.33-CHP, PVJNR/L**1204-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PVJNR/L123, 163-CHP, PVJNR/L**16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

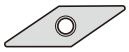
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PVJNR/L-CHP: Inserts → B098 -, B110, CBN → B186 -, B188, PCD → B212
Parts for coolant hose → C133

VN YN

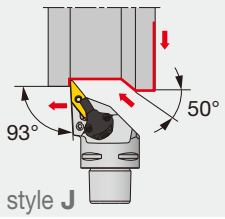
 **Rhombic, 35° with hole**

 **Rhombic, 25° with hole**

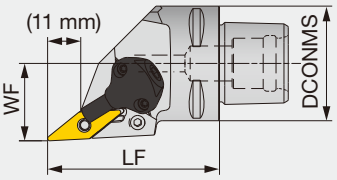
TUNGCAP

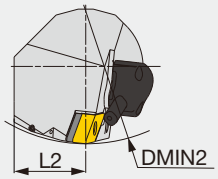
C-PVJNR/L-CHP

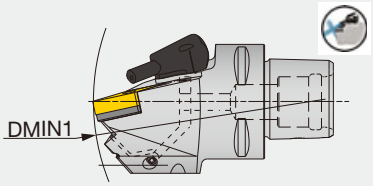
Lever lock toolholders with TungCap connection – 93° approach angle.
For negative 35°/25° rhombic insert. High-pressure coolant capability.



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN1	DMIN2	RE**	Insert	Torque
C4PVJNR/L27060-1204-CHP	40	60	20	27	140	90	0.8	VN**1204...	2
C4PVJNR/L27060-16-CHP	40	60	20	27	140	110	0.8	VN**/YN**1604...	2
C6PVJNR/L45065-1204-CHP	63	65	31.5	45	190	81	0.8	VN**1204...	2
C6PVJNR/L45065-16-CHP	63	65	31.5	45	190	81	0.8	VN**/YN**1604...	2

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PVJNR/L**-1204-CHP	LSV212	LCS3V	P-2.5	LSP3	LCL3V
C*PVJNR/L**-16-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PVJNR/L**-1204-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N
C*PVJNR/L**-16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

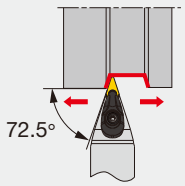
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

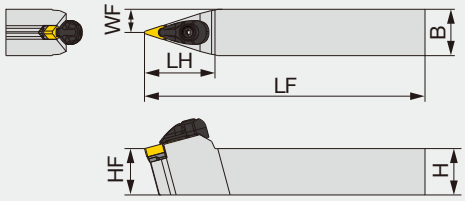
Reference pages: C-PVJNR/L-CHP: Inserts → B098 -, B110, CBN → B186 -, B188, PCD → B212
Parts for coolant hose → C133

AVVNN

Double-clamp toolholder with 72.5° approach angle, for negative 35°/25° rhombic inserts



Cutting edge style **V**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVVNN122.33-A	0.750	0.750	4.500	1.500	0.750	0.375	0.031	VN** 2.33...	2.2
AVVNN123-A	0.750	0.750	4.500	1.870	0.750	0.375	0.031	VN**/YN** 33...	2.2
AVVNN162.33-A	1.000	1.000	6.000	1.500	1.000	0.500	0.031	VN** 2.33...	2.2
AVVNN163-A	1.000	1.000	6.000	1.870	1.000	0.500	0.031	VN**/YN** 33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K1204-A	20	20	125	38	20	10	0.8	VN**1204...	3
AVVNN2020K16-A	20	20	125	46	20	10	0.8	VN**/YN**1604...	3
AVVNN2525M1204-A	25	25	150	38	25	13	0.8	VN**1204...	3
AVVNN2525M16-A	25	25	150	46	25	12.5	0.8	VN**/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**2.33-A, AVVNN**1204-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F
AVVNN123, 163-A, AVVNN**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

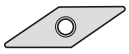
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: AVVNN: Inserts → B098 -, B110, CBN → B186 -, B188, PCD → B212

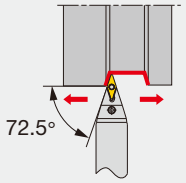
VN



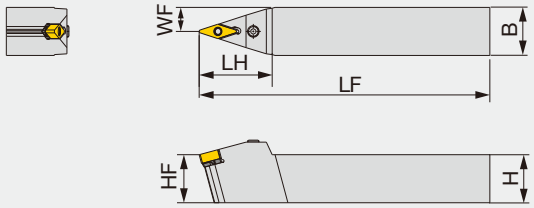
Rhombic, 35° with hole

ISOETURN PVVNN-Eco

Lever-lock toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **V**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVVNN2020K1204	20	20	125	38	20	10	0.8	VN**1204...	2
PVVNN2525M1204	25	25	150	38	25	12.5	0.8	VN**1204...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

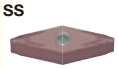
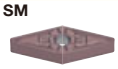
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVVNN**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

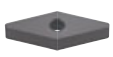
P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B004	

M

Application	Finishing	Medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	SS 	SM 
Cutting conditions	B006	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	- 
Cutting conditions	B008

Reference pages: PVVNN-Eco: Inserts → B098 -

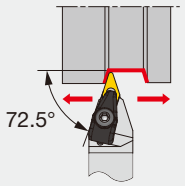
VN



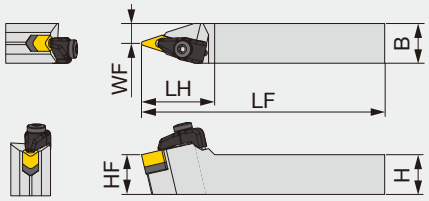
Rhombic, 35° without hole

DIMPLEFX
CVVNN-RD

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic ceramic inserts with dimple



Cutting edge style **V**



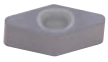
Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CVVNN2525M1607-RD	25	25	150	46	25	12.5	1.2	VNGD160712	4

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

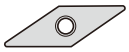
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CVVNN2525M1607-RD	CCP4-A	CCS4-A	CV34-A	BH-4-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

K	Application	Finishing to medium cutting
	Grade	FX105
	Chipbreaker shape	- 
	Cutting conditions	C136

Reference pages: CVVNN-RD: Inserts→ B101
Standard cutting conditions → C136

VN YN

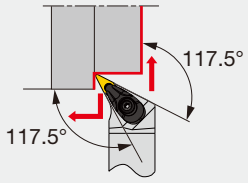
 Rhombic, 35° with hole

 Rhombic, 25° with hole

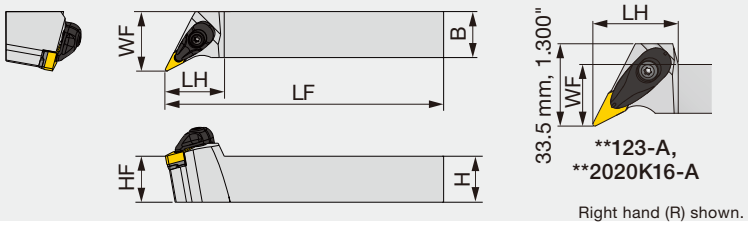
TURNING A

AVQNR/L

Double-clamp toolholder with 117.5° approach angle, for negative 35°/25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

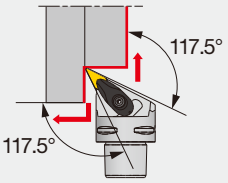
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVQNR/L122.33-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	VN** 2.33...	2.21
AVQNR/L123-A	0.750	0.750	4.500	1.380	0.750	1.000	0.031	VN**/YN** 33...	2.21
AVQNR/L162.33-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	VN** 2.33...	2.21
AVQNR/L163-A	1.000	1.000	6.000	1.380	1.000	1.250	0.031	VN**/YN** 33...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K1204-A	20	20	125	32	20	25	0.8	VN**1204...	3
AVQNR/L2020K16-A	20	20	125	35	20	25	0.8	VN**/YN**1604...	3
AVQNR/L2525M1204-A	25	25	150	32	25	32	0.8	VN**1204...	3
AVQNR/L2525M16-A	25	25	150	35	25	32	0.8	VN**/YN**1604...	3

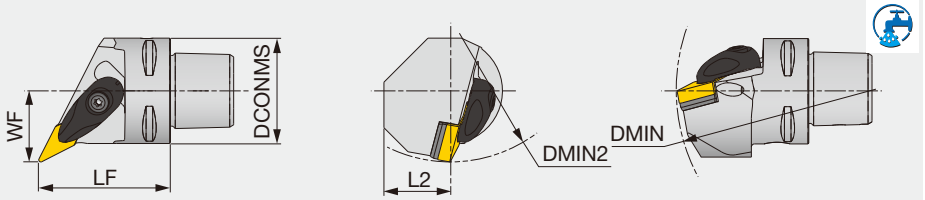
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

C-AVQNR/L

Double-clamp toolholder, with 117.5° approach angle, for negative 35°/25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4AVQNR/L27050-16N	40	50	25	27	145	110	0.8	VN**/YN**1604...

Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

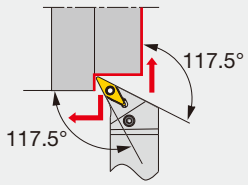
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L**2.33-A, AVQNR/L**1204-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F
AVQNR/L123, 163-A, AVQNR/L**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F
C4AVQNR/L**-16N	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

C D F G H R S T V W Y OTHERS

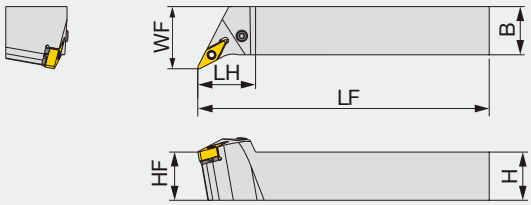
Reference pages: AVQNR/L, C-AVQNR/L: Inserts → B098 -, B110, CBN → B186 -, B188, PCD → B212

PVQNR/L-Eco

Lever-lock toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVQNR/L2020K1204	20	20	125	30	20	25	0.8	VN**1204...	2
PVQNR/L2525M1204	25	25	150	30	25	32	0.8	VN**1204...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVQNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

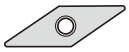
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PVQNR/L-Eco: Inserts → B098 -

VN YN

 Rhombic, 35° with hole

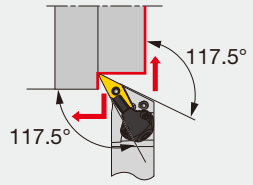
 Rhombic, 25° with hole

TUNGTJET URN

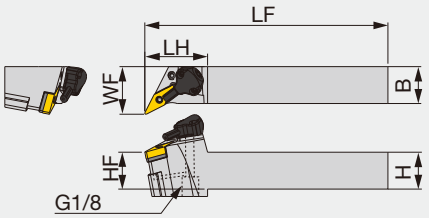
PVQNR/L-CHP

Tube connection

Lever lock toolholders – 117.5° approach angle.
For negative 35°/25° rhombic insert. High-pressure coolant capability.



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE **	Insert	Torque
PVQNR/L123-CHP	0.750	0.750	4.500	1.688	0.750	1.250	0.031	VN**/YN** 33...	1.48
PVQNR/L163-CHP	1.000	1.000	6.000	1.688	1.000	1.250	0.031	VN**/YN** 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE **	Insert	Torque*
PVQNR/L2020K16-CHP	20	20	125	42.5	20	32	0.8	VN**/YN**1604...	2
PVQNR/L2525M16-CHP	25	25	150	42.5	25	32	0.8	VN**/YN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVQNR/L**-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PVQNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	DIA with rake
Cutting conditions	B010

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B014	

Reference pages:PVQNR/L-CHP: Inserts→ B098 -, CBN → B186 -, B188 -, PCD → B212
Parts for coolant hose → C133

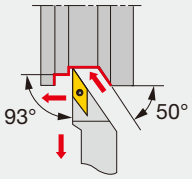
VC



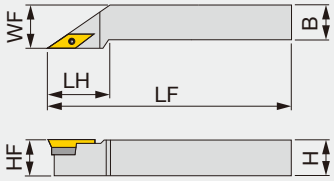
Rhombic, 35° with hole
Positive 7°

SVJCR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SVJCR/L103	0.625	0.625	4.500	1.000	0.625	0.725	0.031	VC** 33...
SVJCR/L123	0.750	0.750	4.500	1.250	0.750	0.955	0.031	VC** 33...
SVJCR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	VC** 33...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVJCR/L1616H16	16	16	100	32	16	20	0.8	VC**1604...
SVJCR/L2020K16	20	20	125	32	20	25	0.8	VC**1604...
SVJCR/L2525M16	25	25	150	40	25	32	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim	Shim screw	Wrench 1	Wrench 2
SVJCR/L...	CSTB-3.5L	SSV32	DTS5-3.5	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

Reference pages: SVJCR/L: Inserts → B152 -, CBN → B209, PCD → B220

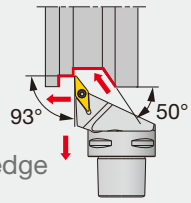
VC

Rhombic, 35° with hole
Positive 7°

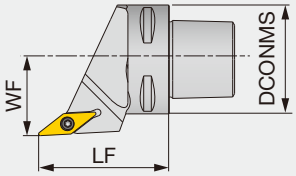
TUNGCAP

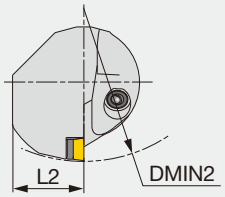
C-SVJCR/L

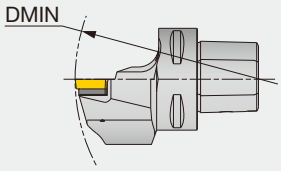
Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3SVJCR/L22040-11N(2)	32	40	20	22	-	-	0.4	VC**1103...
C5SVJCL35060-16(1)	50	60	32	35	-	-	0.8	VC**1604...
C5SVJCR/L35060-16N(2)	50	60	32	35	170	160	0.8	VC**1604...
C6SVJCR/L45065-16(1)	63	65	41	45	-	-	0.8	VC**1604...
C6SVJCR/L45065-16N(2)	63	65	41	45	170	190	0.8	VC**1604...

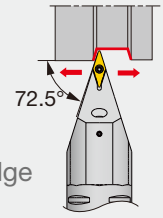
The items without DMIN and DMIN2 cannot be used for boring.
(1) Applicable for 3 MPa (435 PSI) coolant (2) Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

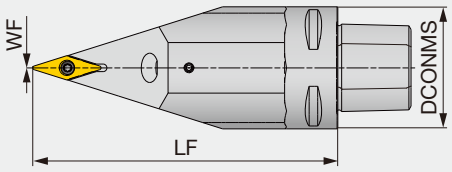
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C3SVJC*22040-11N	CSTB-2.5	SATZ-M8X1-M3	-	-	-	T-8F
C5SVJC*35060-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVJC*35060-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

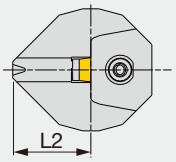
C-SVVCN

Screw-on toolholder, with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**





Metric	DCONMS	LF	L2	WF	RE	Insert
C5SVVCN00090-16(1)	50	90	32	0	0.8	VC**1604...
C5SVVCN00090-16N(2)	50	90	32	0	0.8	VC**1604...
C5SVVCN00125-16(1)	50	125	32	0	0.8	VC**1604...
C5SVVCN00125-16N(2)	50	125	32	0	0.8	VC**1604...
C6SVVCN00100-16N(2)	63	100	37.5	0	0.8	VC**1604...
C6SVVCN00140-16N(2)	63	140	37.5	0	0.8	VC**1604...

(1) Applicable for 3 MPa (435 PSI) coolant (2) Applicable for 7 MPa (1015 PSI) coolant

SPARE PARTS

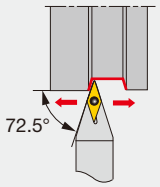
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C5SVVCN00090-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00090-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

Reference pages: C-SVJCR/L, C-SVVCN: Inserts → B152 -, CBN → B209, PCD → B220

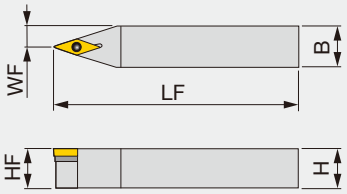
TUNGCAP

SVVCN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**



Metric	H	B	LF	HF	WF	RE**	Insert
SVVCN2020K16	20	20	125	20	10	0.8	VC**1604...
SVVCN2525M16	25	25	150	25	12.5	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim	Shim screw	Wrench 1	Wrench 2
SVVCN...	CSTB-3.5L	SSV32	DTS5-3.5	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

Reference pages: SVVCN: Inserts → B152 -, CBN → B209, PCD → B220

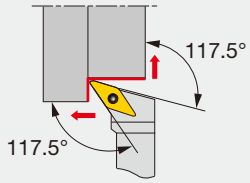
VC



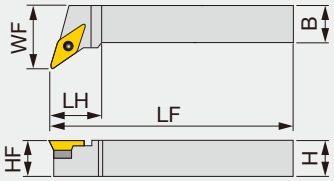
Rhombic, 35° with hole
Positive 7°

SVQCR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SVQCR163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	VC** 33...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVQCR/L2020K16	20	20	125	35	20	27	0.8	VC**1604...
SVQCR/L2525M16	25	25	150	35	25	32	0.8	VC**1604...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVQCR/L...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

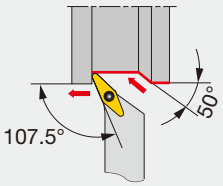
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

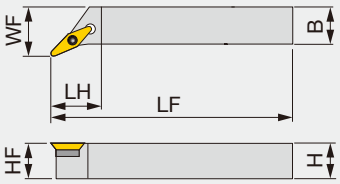
Reference pages: SVQCR/L: Inserts → B152 -, CBN → B209, PCD → B220

SVHCR/L

Screw-on toolholder with 107.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVHCR/L2525M22	25	25	150	33.8	25	32	0.8	VCG*2205...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVHCR/L2525M22	CSTB-4.5L110P	DTS6-4.5	SSV42	P-4.5	T-15F

INSERT SELECTION

K

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B020

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B022

S

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

Reference pages: SVHCR/L: Inserts → B153

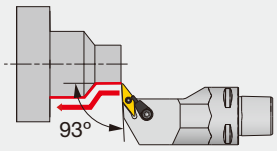
VC



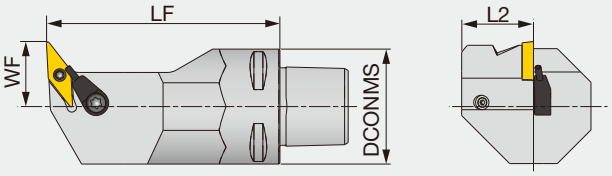
Rhombic, 35° with hole
Positive 7°

TUNGCAP
C-SVUCL-CHP

Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SVUCL18065-11-CHP	32	65	20	18	0.4	VC**1103...

Applicable for 14 MPa (2031 PSI) coolant
Cannot be used for boring

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
C3SVUCL18065-11-CHP	CSTB-2.5	S-CU-CHP	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Chipbreaker shape	CBN	CBN
Cutting conditions	B026	

Reference pages: C-SVUCL-CHP: Inserts → B152
Parts for coolant hose → C133

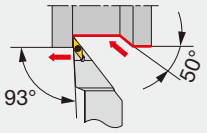
VX

Rhombic, 35° with hole

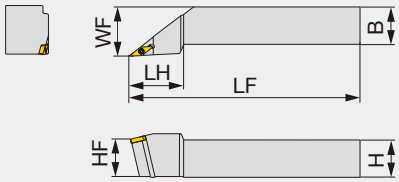
MINIFORCE TURN

JSVJXR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

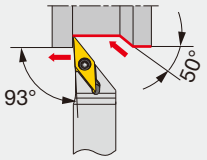
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJXR/L127	0.750	0.750	4.500	1.500	0.750	1.000	0.008	VXGU 73.5**L/R...	0.66
JSVJXR/L167	1.000	1.000	6.000	1.500	1.000	1.250	0.008	VXGU 73.5**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJXR/L2020K09	20	20	125	35	20	25	0.4	VXGU09T2**L/R...	0.9
JSVJXR/L2525M09	25	25	150	35	25	32	0.4	VXGU09T2**L/R...	0.9

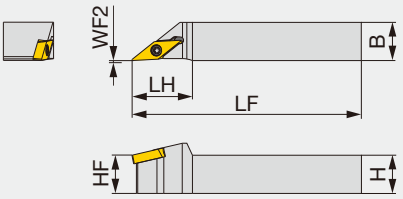
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF2	RE**	Insert	Torque
JSVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU 73.5**L/R...	0.66
JSVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU 73.5**L/R...	0.66
JSVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU 73.5**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
JSVJXR/L... JSVJ2XR/L...	SR34-508	T-7F

INSERT SELECTION

P	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C136

M	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C136

Reference pages: JSVJXR/L, JSVJ2XR/L: Inserts→ B155
Standard cutting conditions → C136

VX

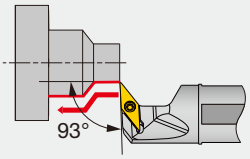


Rhombic, 35° with hole

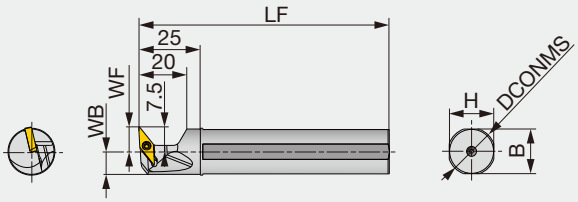
MINI FORCE TURN

JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque
JS159F-SVUXL09	15.875	10	85	15	15	7.7	0.2	VXGU09T2**L...	0.9
JS16F-SVUXL09	16	10	85	15	15	7.7	0.2	VXGU09T2**L...	0.9
JS19G-SVUXL09	19.05	10	90	18	18	9.2	0.2	VXGU09T2**L...	0.9
JS19X-SVUXL09	19.05	10	120	18	18	9.2	0.2	VXGU09T2**L...	0.9
JS20G-SVUXL09	20	10	90	19	19	9.7	0.2	VXGU09T2**L...	0.9
JS20X-SVUXL09	20	10	120	19	19	9.7	0.2	VXGU09T2**L...	0.9
JS22X-SVUXL09	22	10	120	21	21	10.7	0.2	VXGU09T2**L...	0.9
JS25H-SVUXL09	25	10	100	24	24	12.2	0.2	VXGU09T2**L...	0.9
JS254X-SVUXL09	25.4	10	120	24	24	12.4	0.2	VXGU09T2**L...	0.9

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C136

M

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C136

Reference pages: JS-SVUXL: Inserts → B155
Standard cutting conditions → C136

WN

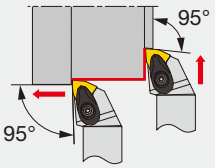


Trigon, 80° with hole

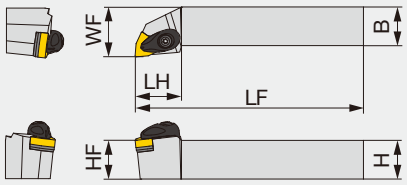
TURNINGA

AWLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AWLNR/L1233-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	WN** 33...	2.21
AWLNR/L123-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	WN** 33...	2.21
AWLNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	WN** 43...	2.21
AWLNR/L1633-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	WN** 33...	2.21
AWLNR/L163-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	WN** 33...	2.21
AWLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	WN** 43...	2.21
AWLNR/L204-A	1.250	1.250	7.000	1.250	1.250	1.500	0.031	WN** 43...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020K0604-A	20	20	125	27	20	25	0.8	WN**0604...	3
AWLNR/L2020H08-A	20	20	100	30	20	25	0.8	WN**0804...	3
AWLNR/L2020K08-A	20	20	125	30	20	25	0.8	WN**0804...	3
AWLNR/L2525M0604-A	25	25	150	27	25	32	0.8	WN**0604...	3
AWLNR/L2525K08-A	25	25	125	30	25	32	0.8	WN**0804...	3
AWLNR/L2525M08-A	25	25	150	30	25	32	0.8	WN**0804...	3
AWLNR/L3225P08-A	32	25	170	30	32	32	0.8	WN**0804...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**33-A, AWLNR/L**0604-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
AWLNR/L**3-A	ACP3S	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
AWLNR/L**4-A, AWLNR/L**08-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B014	

Reference pages: AWLNR/L: Inserts → B102 -, CBN → B187
Parts for coolant hose → C133

WN

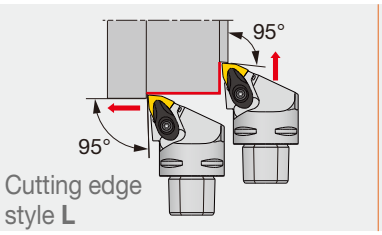


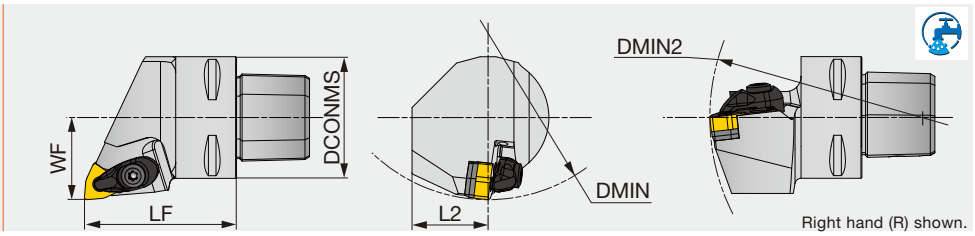
Trigon, 80°
with hole

TURNING

C-AWLNR/L

Double-clamp toolholder, with 95° approach angle, for negative 80° trigon inserts





Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...
C4AWLNR/L27050-08N	40	50	25	27	-	-	0.8	WN**0804...
C6AWLNR/L45065-08N	63	65	35	45	190	110	0.8	WN**0804...

Applicable for 7 MPa (1015 PSI) coolant

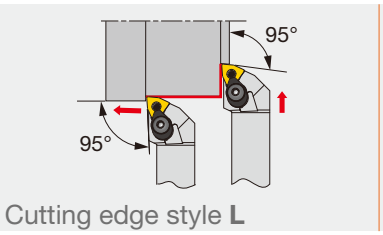
The items without DMIN and DMIN2 cannot be used for boring.

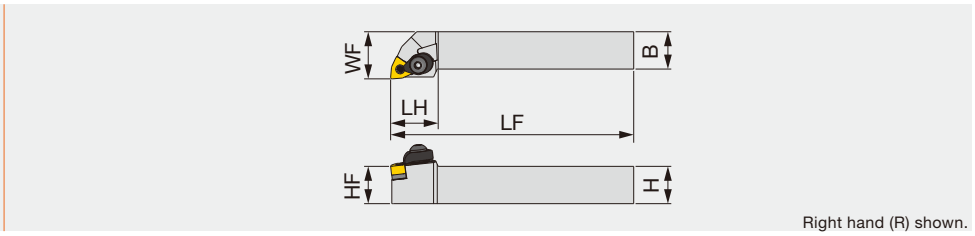
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench	Coolant parts
C4AWLNR/L**-0604N	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F	-
C4AWLNR/L**-08N	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F	-
C6AWLNR/L**-08N	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F	SATZ-M8X1-M3

DWLNR/L

One-Double toolholder with 95° approach angle, for negative 80° trigon inserts





Metric	H	B	LF	LH	HF	WF	RE**	Insert
DWLNR/L2020K06	20	20	125	25.5	20	25	0.8	WN**0604...
DWLNR/L2020K08	20	20	125	31	20	25	0.8	WN**0804...
DWLNR/L2525M06	25	25	150	26	25	32	0.8	WN**0604...
DWLNR/L2525M08	25	25	150	31	25	32	0.8	WN**0804...
DWLNR/L3225P08	32	25	170	30	32	32	0.8	WN**0804...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

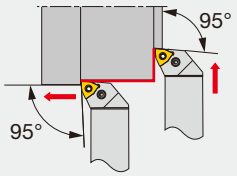
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DWLNR/L**06	DCPM-33	LCL33	DPIS33	DLCS33	LSW312	BP-9	LSP3	P-2.5	P-3
DWLNR/L**08	DCPM-43	DLCL43	DPIS43	DLCS43	LSW42	BP-10	LSP4	P-3	P-4

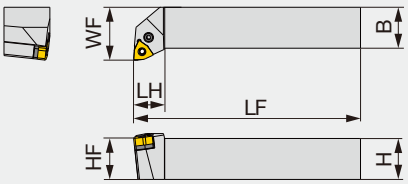
Reference pages: C-AWLNR/L, DWLNR/L: Inserts → B102 -, CBN → B187
Parts for coolant hose → C133

PWLNR/L-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PWLNR/L1233	0.750	0.750	4.500	0.625	0.750	1.000	0.031	WN** 33...	1.48
PWLNR/L1633	1.000	1.000	6.000	0.719	1.000	1.250	0.031	WN** 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604	20	20	125	15	20	25	0.8	WN**0604...	2
PWLNR/L2525M0604	25	25	150	19	25	32	0.8	WN**0604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PWLNR/L...	LSW312	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PWLNR/L-Eco: Inserts → B102 -

WN

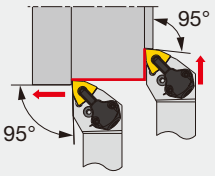


Trigon, 80° with hole

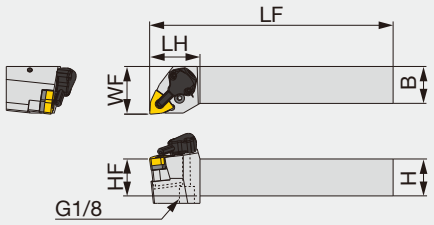
PWLNR/L-CHP

Tube connection

Lever lock toolholders – 95° approach angle.
For negative 80° trigon insert. High-pressure coolant capability.



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PWLNR/L1233-CHP	0.750	0.750	4.500	1.344	0.750	1.250	0.031	WN** 33...	1.48
PWLNR/L124-CHP	0.750	0.750	4.500	1.344	0.750	1.250	0.031	WN** 43...	2.22
PWLNR/L1633-CHP	1.000	1.000	6.000	1.344	1.000	1.250	0.031	WN** 33...	1.48
PWLNR/L164-CHP	1.000	1.000	6.000	1.344	1.000	1.250	0.031	WN** 43...	2.22

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604-CHP	20	20	125	34	20	32	0.8	WN**0604...	2
PWLNR/L2020K08-CHP	20	20	125	34	20	32	0.8	WN**0804...	3
PWLNR/L2525M0604-CHP	25	25	150	34	25	32	0.8	WN**0604...	2
PWLNR/L2525M08-CHP	25	25	150	34	25	32	0.8	WN**0804...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PWLNR/L**33-CHP, PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3
PWLNR/L**4-CHP, PWLNR/L**08-CHP	LSW42	LCS4	P-2.5	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PWLNR/L**33-CHP, PWLNR/L**0604-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PWLNR/L**4-CHP, PWLNR/L**08-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

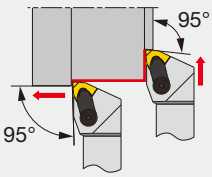
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B014	

Reference pages: PWLNR/L-CHP: Inserts → B102 -, CBN → B187
Parts for coolant hose → C133

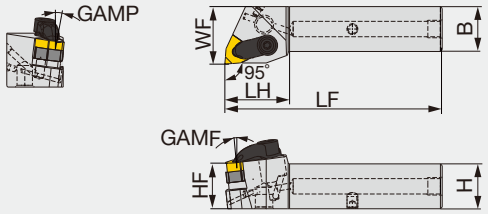
AWLNR/L-CHP-MC

Direct connection | Tube connection

Double clamping tool holders-95°approach angle
For negative 80°trigon insert. High-pressure coolant capability with tube and direct connections



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque
AWLNR/L12-4-CHP-MC	0.750	0.75	4.173	1.417	0.750	1.000	6°	6°	WN** 43...	2.95
AWLNR/L16-4-CHP-MC	1.000	1.000	4.716	1.417	1.000	1.250	6°	6°	WN** 43...	2.95

Metric	H	B	LF	LH	HF	WF	GAMP	GAMF	Insert	Torque*
AWLNR/L2020X-08-CHP-MC	20	20	106	36	20	25	6°	6°	WN**0804...	4
AWLNR/L2525X-08-CHP-MC	25	25	121	36	25	32	6°	6°	WN**0804...	4

Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 14 MPa (2031 PSI) pressure coolant

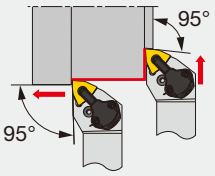
SPARE PARTS

Designation	Clamp set	Shim	Shim screw	Screw for tube connection	Coolant plug	O-ring	Wrench
AWLNL...	LCGL-4JCSET	RWT443	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20
AWLNR...	LCGR-4JCSET	RWT443	SR14-506	PLUGG1/8-6.5TL360	SRM5X5 DIN913TL360	OR4X3NBR70	KEYV-T20

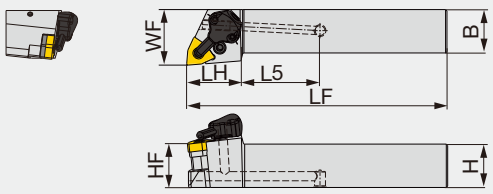
PWLNR/L2020X-CHP-MC

Direct connection

Lever lock toolholders – 95° approach angle.
For negative 80° trigon insert. High-pressure coolant capability with bottom direct connection



Cutting edge style **L**



Metric	H	B	LF	LH	HF	L5	WF	Insert	Torque
PWLNR/L2020X06-CHP-MC	20	20	97	27	20	29	25	WN**0604...	2
PWLNR/L2020X08-CHP-MC	20	20	97	27	20	29	25	WN**0804...	3

Torque: Recommended clamping torque: N·m
Applicable for 30 MPa (4351 PSI) pressure coolant

SPARE PARTS

Designation	Shim	Spring	Lever	Spring	Spring pin	Wrench	Coolant unit	Wrench	Coolant plug	Wrench
PWLNR/L2020X06-CHP-MC	TWN3	SP3	LR3	SR117-2014	PN3-4	HW2.5	CU-CW-CHP	T-8/5	SRM5X5 DIN913TL360	-
PWLNR/L2020X08-CHP-MC	TWN443	SP4	LR4DH	SR117-2010	PN3-4L	HW2.5	CU-CW-CHP	T-8/5	SRM5X5 DIN913TL360	HW3.0

Reference pages: AWLNR/L-CHP-MC, PWLNR/L2020X-CHP-MC:
Inserts → B102 -, CBN → B187, Parts for coolant hose → C133

WN

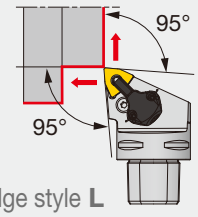


Trigon, 80°
with hole

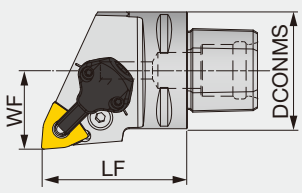
TUNGCAP

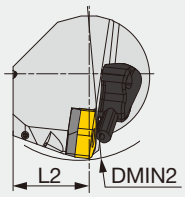
C-PWLNR/L-CHP

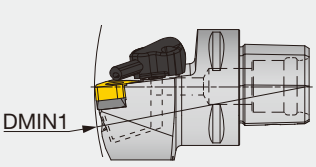
Lever lock toolholders with TungCap connection – 95° approach angle.
For negative 80° trigon insert. High-pressure coolant capability.



Cutting edge style **L**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN1	DMIN2	RE**	Insert	Torque
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...	2
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...	3
C6PWLNR/L45065-08-CHP	63	65	41	45	190	110	0.8	WN**0804...	3

Torque: Recommended clamping torque: N·m
Applicable for 14 MPa (2031 PSI) pressure coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PWLNR/L**0604-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N
C*PWLNR/L**-08-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

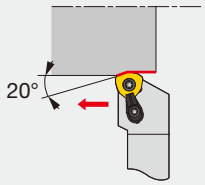
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B012	

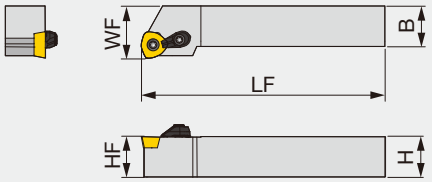
Reference pages: C-PWLNR/L-CHP: Inserts → B102 -, CBN → B187
Parts for coolant hose → C133

XWXPR/L

Double-clamp toolholder for roughing with 20° approach angle, for positive 80° trigon inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	H	B	LF	HF	WF	Insert
XWXPR/L16-09	1.000	1.000	6.000	1.000	1.250	WPMT090725ZPR/L-ML
XWXPR/L20-09	1.250	1.250	7.000	1.250	1.500	WPMT090725ZPR/L-ML
XWXPR/L24-09	1.500	1.500	7.000	1.500	2.000	WPMT090725ZPR/L-ML

Metric	H	B	LF	HF	WF	Insert
XWXPR/L2525M09	25	25	150	25	32	WPMT090725ZPR/L-ML
XWXPR/L3232P09	32	32	170	32	40	WPMT090725ZPR/L-ML
XWXPR/L4040S09	40	40	250	40	50	WPMT090725ZPR/L-ML

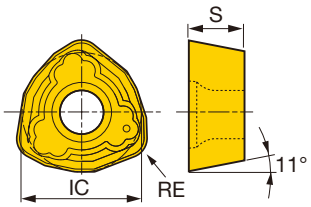
SPARE PARTS

Designation	Clamp set	Clamping screw	Wrench
XWXPR/L...	CSY-20	CSPB-5	IP-20T

Note: Each insert is either right- or left-handed. Please be sure not to use a wrong insert.

INSERT

WPMT09-ML



		Coated		
		T9215	T9225	AH120
P	Steel	★	★	★
M	Stainless	☆		☆
K	Cast iron	☆	☆	☆
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE (in)	Max. *ap* (in)	Coated T9215	Coated T9225	Coated AH120	IC (in)	S (in)
WPMT090725ZPR-ML	0.098	0.118	●	●	●	0.591	0.276
WPMT090725ZPL-ML	0.098	0.118	●	●	●	0.591	0.276

● : Line up

Reference pages: Standard cutting conditions → C137

WX

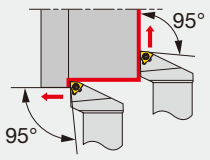


Trigon, 80° with hole

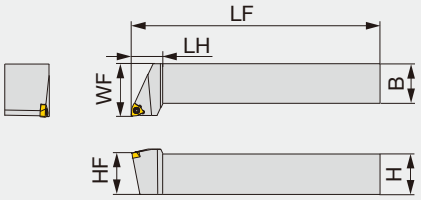
MINIFORCE TURN

JSWLXR/L

Screw-on toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSWLXR/L122	0.750	0.750	4.500	0.625	0.750	1.000	0.008	WXGU 22**L/R...	0.66
JSWLXR/L162	1.000	1.000	6.000	0.750	1.000	1.250	0.008	WXGU 22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWLXR/L2020K04	20	20	125	15	20	25	0.4	WXGU0403**L/R...	0.9
JSWLXR/L2525M04	25	25	150	19	25	32	0.4	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS





Designation	Clamping screw	Wrench
JSWLXR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS 	JTS 
Cutting conditions	C136	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS 	JTS 
Cutting conditions	C136	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS 	TS 
Cutting conditions	C136	

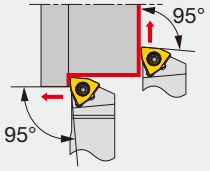
M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS 	TS 
Cutting conditions	C136	

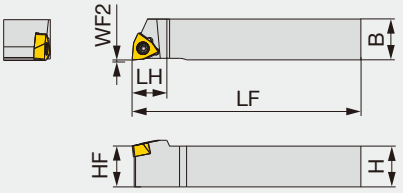
Reference pages: JSWLXR/L: Inserts → B157 -, CBN → B210
Standard cutting conditions → C136

JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF2	RE**	Insert	Torque
JSWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU 22**L/R...	0.66
JSWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU 22**L/R...	0.66
JSWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU 22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
JSWL2XR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C136	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C136	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	C136	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	C136	

Reference pages: JSWL2XR/L: Inserts → B157 - , CBN → B210
Standard cutting conditions → C136

YW

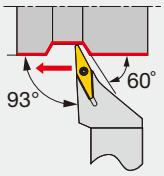


Rhombic, 25°
with hole
Positive 7°

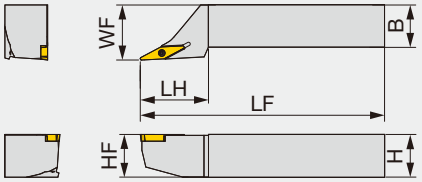
Y-PRO SERIES

SYJBR/L

Screw-on toolholder with 93° approach angle, for positive 25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYJBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYJBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYJBR/L2020K16	20	20	125	35	20	25	0.8	YWMT16T3...
SYJBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
SYJBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B016

M

Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	ZM 
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B020

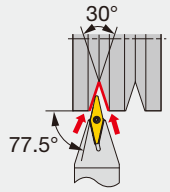
S

Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	ZM 
Cutting conditions	B024

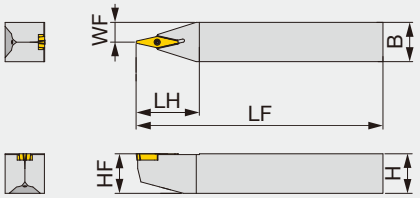
Reference pages: SYJBR/L: Inserts → B159

SYIBN

Screw-on toolholder with 77.5° approach angle, for positive 25° rhombic inserts



Cutting edge style **I**



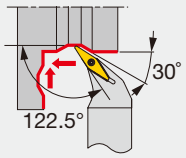
Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN123	0.750	0.750	4.500	1.250	0.750	0.375	0.031	YWMT16T3...
SYIBN163	1.000	1.000	6.000	1.500	1.000	0.500	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN2020K16	20	20	125	32	20	10	0.8	YWMT16T3...
SYIBN2525M16	25	25	150	40	25	12.5	0.8	YWMT16T3...

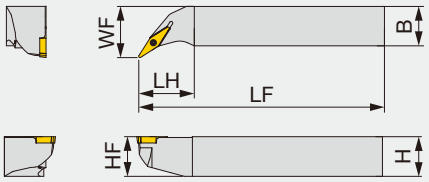
**RE : Standard corner radius

SYQBR/L

Screw-on toolholder with 122.5° approach angle, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYQBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYQBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYQBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYQBR/L2525M16	25	25	150	35	25	32	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
SYIBN..., SYQBR/L...	CSTB-2.5L080	T-8F

Reference pages: SYIBN, SYQBR/L: Inserts → B159

YW

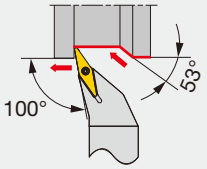


Rhombic, 25°
with hole
Positive 7°

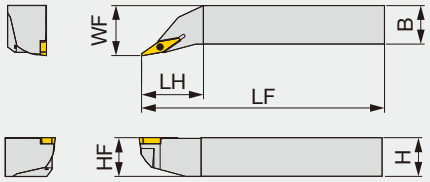
Y-PRO SERIES

SYHBR/L

Screw-on toolholder with 100° approach angle, for positive 25° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYHBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYHBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYHBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYHBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
SYHBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B016

M

Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	ZM 
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B020

S

Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	ZM 
Cutting conditions	B024

Reference pages: SYHBR/L: Inserts → B159

PARTS FOR COOLANT HOSE

Connecting hose

Fig. 1

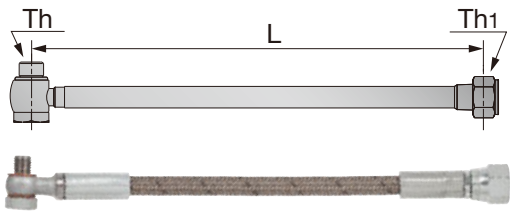
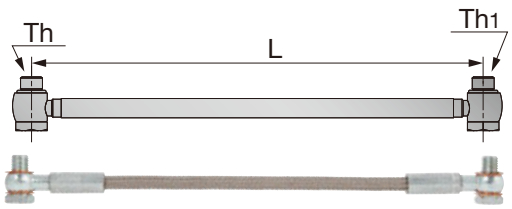
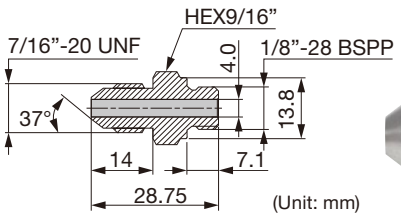


Fig. 2



Metric	L	Th	Th1	Max. pressure Mpa (PSI)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26 (3771)	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26 (3771)	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20 (2901)	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20 (2901)	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26 (3771)	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26 (3771)	2

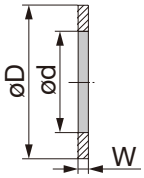
Connector





Metric
CHP-NIPPLE-G1/8-7/16UNF

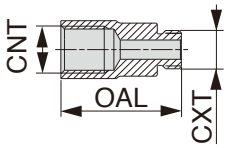
Seal washer





Metric	øD	ød	W
CHP-COPPER-SEAL1/8	15	10	1
CHP-COPPER-SEAL5/16	11.9	8.15	1.35
CHP-COPPER-SEAL5/16-2.5	9.4	8	2.5

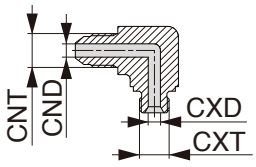
Connector for small lathe with seal washer





Metric	CNT	CXT	OAL
CHP-CONECTOR5/16-G1/8	G1/8"-28 BSPP	5/16"-24 UNF	25
CHP-CONNECTOR-G1/8-R1/8	G1/8"-28 BSPP	R1/8"-28 BSPT	25

Connector elbow





Metric	CNT	CND	CXT	CXD
CHP-ELBOW-90-G1/8-7/16UNF	7/16"-20 UNF	4.4	1/8"-28 BSPP	4
CHP-ELBOW-90-5/16-7/16UNF	7/16"-20 UNF	4.4	5/16"-24 UNF	4

STANDARD CUTTING CONDITIONS

ADDMULTI TURN

Double-sided 6-corner insert

ISO	Operation	Chipbreaker	Grade	Depth of cut: *ap* (in)		Feed: *f* (ipr)		Cutting speed
				Front turning	Back turning	Front turning	Back turning	*Vc* (sfm)
P	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	492 - 1312
		TSF	T9225	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	262 - 984
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	492 - 1312
		TM	T9225	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	262 - 984
M	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	328 - 820
		TSF	AH8015	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	295 - 623
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	328 - 820
		TM	AH8015	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	295 - 623
K	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	459 - 1640
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	459 - 1640
S	Finishing	TSF	AH8015	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	66 - 262
	Medium to heavy cutting	TM	AH8015	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	66 - 262

Single-sided 3-corner insert

ISO	Operation	Chipbreaker	Grade	Depth of cut: *ap* (in)		Feed: *f* (ipr)		Cutting speed
				Front turning	Back turning	Front turning	Back turning	*Vc* (sfm)
P	Medium to heavy cutting	TM	T9215	0.02 - 0.157	0.02 - 0.079	0.008 - 0.024	0.016 - 0.079	492 - 1312
M	Medium to heavy cutting	TM	T9215	0.02 - 0.157	0.02 - 0.079	0.008 - 0.024	0.016 - 0.079	328 - 820
K	Medium to heavy cutting	TM	T9215	0.02 - 0.157	0.02 - 0.079	0.008 - 0.024	0.016 - 0.079	459 - 1640

ADDY AXIS TURN

ISO	Operation	Chipbreaker	Grade	Cutting speed
				Vc (sfm)
P	Finishing	ZF	T9215	492 - 1312
	Medium to heavy cutting	TM	T9215	492 - 1312
M	Finishing	ZF	T9215	328 - 820
	Medium to heavy cutting	TM	T9215	328 - 820
K	Finishing	ZF	T9215	459 - 1640
	Medium to heavy cutting	TM	T9215	459 - 1640

Reference pages: C6SDNCN-Y-CHP → C056, STXCR/L-CHP-MC → C100
C6STECN-Y-CHP → C101, ATXOR/L → C102

STANDARD CUTTING CONDITIONS

TURN TEN FEED

For HD holder
(High Depth of Cut)

ISO	Insert Designation		Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
	Inch	Metric			T9215	T9225
P	POMG 543 MNW	POMG110612-MNW	0.031 - 0.217	0.016 - 0.047	492 - 1312	394 - 984
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.276	0.016 - 0.051	492 - 1312	394 - 984

ISO	Insert Designation		Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)
	Inch	Metric			AH8015
M	POMG 543 MNW	POMG110612-MNW	0.031 - 0.217	0.016 - 0.047	164 - 492
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.276	0.016 - 0.051	164 - 492
S	POMG 543 MNW	POMG110612-MNW	0.031 - 0.217	0.016 - 0.047	66 - 262
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.276	0.016 - 0.051	66 - 262

For HF holder
(High Feed)

ISO	Insert Designation		Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
	Inch	Metric			T9215	T9225
P	POMG 543 MNW	POMG110612-MNW	0.039 - 0.098	0.020 - 0.059	492 - 1312	394 - 984
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.118	0.020 - 0.079	492 - 1312	394 - 984

ISO	Insert Designation		Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)
	Inch	Metric			AH8015
M	POMG 543 MNW	POMG110612-MNW	0.039 - 0.098	0.020 - 0.059	164 - 492
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.118	0.020 - 0.079	164 - 492
S	POMG 543 MNW	POMG110612-MNW	0.039 - 0.098	0.020 - 0.059	66 - 262
	POMG 643 MNW	POMG130612-MNW	0.039 - 0.118	0.020 - 0.079	66 - 262

Reference pages: PPXOR/L-HD → C063

STANDARD CUTTING CONDITIONS

MINIFORCE TURN

Applications	ISO	Workpiece material	Priority	Chipbreaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
Swiss lathes	P	Low carbon steels , Carbon steels 1045, etc. Low alloy steels, Alloy steels 4140, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.118	0.001 - 0.004
			Sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened) 174, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.049	0.001 - 0.004
			Sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
Small CNC lathes	P	Low carbon steels, Carbon steels 1045, etc. Low alloy steels, Alloy steels 4140, etc.	First choice	SS	AH725	164 - 590	0.006 - 0.059	0.002 - 0.008
				TS	AH725	164 - 590	0.012 - 0.079	0.003 - 0.012
			Surface quality	SS	NS9530	164 - 656	0.006 - 0.059	0.002 - 0.008
				TS	NS9530	164 - 656	0.012 - 0.079	0.003 - 0.012
			Wear resistance	SS	GT9530	164 - 820	0.006 - 0.059	0.002 - 0.008
				TS	GT9530	164 - 820	0.012 - 0.079	0.003 - 0.012
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened) 174, etc.	First choice	SS	AH725	164 - 492	0.006 - 0.059	0.002 - 0.008
			Fracture resistance	TS	AH725	164 - 492	0.012 - 0.079	0.003 - 0.012

DIMPLEFX

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
K	Gray cast irons	FX105	2300 (1000 - 3300)	0.040 (0.002 - 0.120)	0.012 (0.002 - 0.024)
	Ductile cast irons	FX105	650 (330 - 1000)	0.040 (0.002 - 0.120)	0.008 (0.002 - 0.016)

TS200 & TS300

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)	Depth of cut *ap* (in)
S	Ni-based super alloys	TS200	656 - 1148	0.004 - 0.016	0.004 - 0.079
		TS300	492 - 820	0.004 - 0.008	0.004 - 0.079
	Co-based super alloys	TS200	656 - 1148	0.004 - 0.016	0.004 - 0.079
		TS300	492 - 820	0.004 - 0.008	0.004 - 0.079

Reference pages: CCLNR/L-RD → C027, TCLNR/L-F → C028, CDJNR/L-RD → C042
CDNNN-RD → C044, JSVJXR/L, JSVJ2XR/L → C047,
JSDJXR/L, JSDJ2XR/L → C057, JS-SDUXL, JS-SVUXL → C058
CHSNR/L → C059, TRGNR/L-F → C067, TRDCN → C075,
CSSNR/L → C081, TSKNR/L-F → C084, CVVNN-RD → C119
JSWLXR/L, JSWL2XR/L → C128

STANDARD CUTTING CONDITIONS

TURNTEC

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.031	RE : 0.047	RE : 0.031	RE : 0.047
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)			Feed: *f* (ipr)		
					RE : 0.031	RE : 0.047	RE : 0.063	RE : 0.031	RE : 0.047	RE : 0.063
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TWR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		MDR	T9115	330 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		MDR	AH725	160 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		TWR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-

LNMX2410

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.063	RE : 0.094	RE : 0.063	RE : 0.094
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043

TURNFEED

ISO	Workpiece material	Grade	Chipbreaker	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
P	Mild and low carbon steels 400SS, 1025, etc. < 180 HB	T9225	ML	330 - 990	0.025 - 0.100	0.025 - 0.100
	Carbon and alloy steels 1049, 4142, etc. < 300HB	T9215	ML	390 - 1150	0.025 - 0.100	0.025 - 0.100
M	Stainless steels 304, 316, etc. < 250 HB	T9225	ML	330 - 990	0.025 - 0.100	0.025 - 0.100
K	Gray and ductile cast irons No35B, 60-40-18, etc.	AH120	ML	330 - 820	0.025 - 0.100	0.025 - 0.100

When the side cutting edge is used for facing, the maximum feed is limited to within 0.040 ipr.

Reference pages: TLANR/L → C060, TLFNR/L, TLBNR/L → C061
XWXPR/L → C127

STANDARD CUTTING CONDITIONS

Y-PRO SERIES

For negative insert

ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	ZF	GT9530	0.008 - 0.059	0.001 - 0.008	490 - 980	490 - 980	490 - 980
			NS9530	0.008 - 0.059	0.001 - 0.008	490 - 980	490 - 980	490 - 984
			T9225	0.008 - 0.059	0.001 - 0.008	390 - 980	390 - 980	330 - 820
			T9235	0.008 - 0.059	0.001 - 0.008	164 - 660	164 - 660	164 - 490
	Finishing to medium	ZM	GT9530	0.028 - 0.079	0.006 - 0.016	490 - 980	490 - 980	490 - 980
			NS9530	0.028 - 0.079	0.006 - 0.016	490 - 980	490 - 980	490 - 980
			T9225	0.028 - 0.079	0.006 - 0.016	390 - 980	390 - 980	330 - 820
			T9235	0.028 - 0.079	0.006 - 0.016	164 - 660	164 - 660	164 - 490
							Stainless steels	
M	Finishing	ZF	AH8015	0.008 - 0.059	0.001 - 0.008	164 - 490	164 - 490	164 - 490
	Finishing to medium	ZM	AH8015	0.028 - 0.079	0.006 - 0.016	164 - 490	164 - 490	164 - 490
							Cast iron	
K	Finishing	ZF	T9225	0.008 - 0.059	0.001 - 0.008	460 - 1640	460 - 1640	460 - 1640
	Finishing to medium	ZM	T9225	0.028 - 0.079	0.006 - 0.016	460 - 1640	460 - 1640	460 - 1640
							Heat-resistant alloys	
S	Finishing	ZF	AH8015	0.008 - 0.059	0.001 - 0.008	66 - 260	66 - 260	66 - 260
	Finishing to medium	ZM	AH8015	0.028 - 0.079	0.006 - 0.016	66 - 260	66 - 260	66 - 260

For positive insert

ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing to medium	ZF	GT9530	0.008 - 0.059	0.002 - 0.010	490 - 980	490 - 980	490 - 980
			T9225	0.008 - 0.059	0.002 - 0.010	330 - 980	260 - 980	260 - 820
		ZM	GT9530	0.020 - 0.079	0.002 - 0.012	490 - 980	490 - 980	490 - 980
			T9225	0.020 - 0.079	0.002 - 0.012	330 - 980	260 - 980	260 - 820
							Stainless steels	
M	Finishing to medium	ZF	AH8015	0.008 - 0.059	0.002 - 0.010	164 - 490	164 - 490	164 - 490
		ZM	AH8015	0.020 - 0.079	0.002 - 0.012	164 - 490	164 - 490	164 - 490
							Cast iron	
K	Finishing to medium	ZF	T9225	0.008 - 0.059	0.002 - 0.010	460 - 1640	460 - 1640	460 - 1640
		ZM	T9225	0.020 - 0.079	0.002 - 0.012	460 - 1640	460 - 1640	460 - 1640
							Heat-resistant alloys	
S	Finishing to medium	ZF	AH8015	0.008 - 0.059	0.002 - 0.010	66 - 260	66 - 260	66 - 260
		ZM	AH8015	0.020 - 0.079	0.002 - 0.012	66 - 260	66 - 260	66 - 260

FIXRTURN

ISO	Workpiece material	Chipbreaker	Grade	Cutting Speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
P	Steels 1045, etc.	6RS	T9215	394 - 1148	0.020 - 0.079	0.020 - 0.039
		6RS	T9225	328 - 984	0.020 - 0.079	0.020 - 0.039
		6RS	NS9530	492 - 820	0.020 - 0.079	0.020 - 0.039
		6RM	T9215	394 - 1148	0.039 - 0.118	0.020 - 0.039
		6RM	T9225	328 - 984	0.039 - 0.118	0.020 - 0.039
		6RM	NS9530	492 - 820	0.039 - 0.118	0.020 - 0.039

Reference pages: SRGCR/L-6F→ C070, SRDCN-6F→ C074, SVHCR/L→ C117
SYJBR/L → C130, SYIB, SYQBR/L→ C131

Internal Toolholder



Internal Toolholder - Content structure

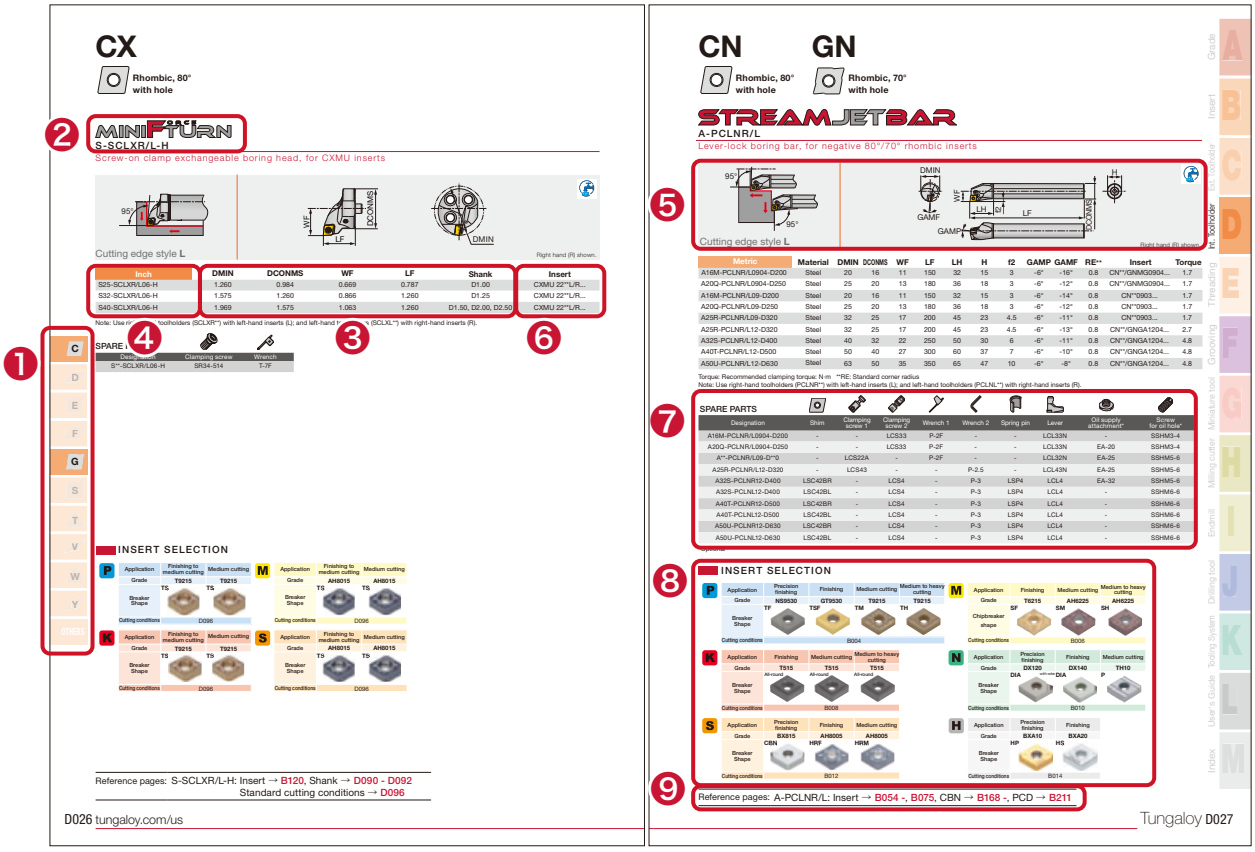
- Indexable toolholders are listed by insert shape.
- Toolholders in the catalog are our standard items.

How to use the page

Method ① Select the insert shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method ② Select the series name of a toolholder on D003 and check the details on each page.

Method ③ Select an item from Quick Guide on D004 - D013.



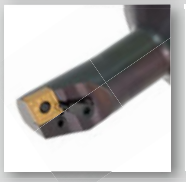
❶ : Insert shape
❷ : Series name of indexable boring bars
❸ : Dimension table
❹ : Toolholder designation
e.g. To select right-handed steel shank with minimum machining diameter ø0.750"

→ **A12-SCLC**R**3-**D16

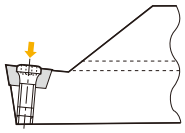
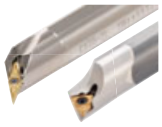
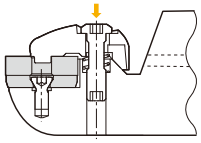
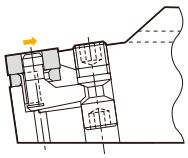
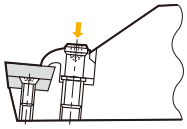
❺ : Dimension drawing (conforming to ISO13399)
❻ : Applicable insert
❼ : Spare parts
❽ : Insert selection
❾ : Reference pages

When ordering
- Please specify the designation and quantity.
e.g. **A12-SCLCR/L3-D16 ...** 1 (one boring bar per package)
* Inserts are not included. Please order those separately.

Main products

		Inch	Metric
	**BOREMEISTER** Boring head suitable for L/D=10 Shank **ø0.625" - ø2.500"** D014	✓	
	**MINIFORCE TURN** Economical double-sided inserts with excellent sharpness Shank **ø0.375" - ø1.000", ø10 - 20 mm** D017	✓	✓
	**ISOECO TURN** Small-sized “Eco” insert series for maximized profits Shank **ø1.000" - ø1.250", ø16 - 32 mm** D030 -, D045 - D064 -, D077 D085	✓	✓
	**STREAMJETBAR** Highly rigid toolholders providing good chip evacuation Shank **ø0.313" - ø1.250", ø4 - 50 mm** D015	✓	✓
	**Y-PRO SERIES** Inserts with 25° corner angle for profiling Shank **ø0.500" - ø0.625", ø12 - 16 mm** D088, D089	✓	✓
	**TURNINGA** Highly rigid clamping system with excellent repeatability Shank **ø1.000" - ø2.000", ø25 - 50 mm** D031, D045, D055, D065, D078, D085	✓	✓
	**TUNGTURN JET** Toolholders for high pressure coolant supply D028, D044	✓	✓
	**TUNGBORE MINI** Multifunctional tool for drilling, external turning and internal turning Shank **ø8 - 12 mm** D016	✓	✓
	Sleeve D093 -	✓	✓

Internal Toolholder - Quick Guide

Screw-on	Double clamping	Lever-lock	Clamp-on
  STREAMJETBAR MINIFTURN	  TURNINGA	  ISOETURN	 
• Simple clamping mechanism. • Smart shape without overhang area. • Minimum bore diameter: 0.250", ø4.5 mm. • Good cutting action by using positive inserts. • Carbide shanks that have excellent resistance to chatter. • "Tsuppari-Ichiban" shanks (reinforced with carbide plates) are also stocked.	• Increased clamping rigidity contributes to superior cutting edge positioning accuracy & longer tool life. • Enlarged insert holding area of the clamp allows more accurate cutting edge positioning. It delivers high performance even when using VNMG type (35° corner angle) inserts, which tend to destabilize cutting edge positioning. • Simple structure keeps cost low. Easy clamping with only one wrench.	• Negative rake, lever-lock type, round shank boring bars. • The insert is positively held into a two wall pocket, excelling in indexing accuracy. • Minimum bore diameter: 1.250", ø20 mm. • "Tsuppari-Ichiban" shanks that are reinforced with carbide plates are also stocked.	• Clamp-on type insert locking mechanism assures secure holding & accurate indexing. • For inserts without a hole, it provides stronger cutting edge strength than S-type tools & can withstand heavier cutting conditions. • Minimum bore diameter: ø16 mm

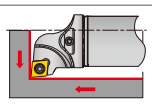
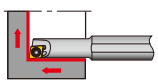
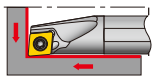
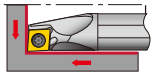
Tool selection according to the ratio of length to tool diameter (L/D) for different shank materials

Steel shank	Carbide reinforced	Carbide shank	BoreMeister
L/D ≤ 3	L/D ≤ 4	L/D ≤ 5	L/D ≤ 10

For custom tooling inquiries, contact Tungaloy

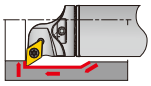
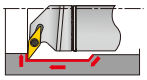
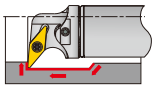
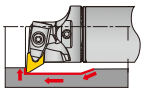
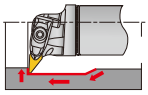
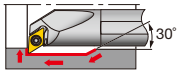
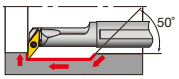
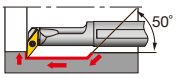
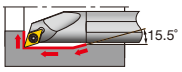
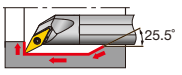
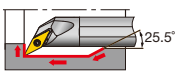
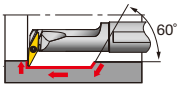
Positive type

Inch

Application	Style	Designation	Insert	Material	Through coolant	ISO Insert	BOREMEISTER	STREAMJETBAR	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
Boring & internal facing		**S-SCLCR/L-H**	CC...	Steel Carbide	○	✓	✓		ø0.787" ø1.969"	D021
		**SEXPR/L**	EP...	Steel Carbide	○	✓		✓	ø0.250" ø0.250"	D048
		**SCLCR/L**	CC...	Steel Carbide	○	✓		✓	ø0.500" ø1.250" ø0.500" ø1.250"	D018
		**SCLPR/L**	CP...	Steel Carbide	○	✓		✓	ø0.500" ø0.875" ø0.500" ø0.875"	D022

Positive type

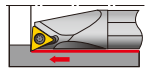
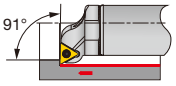
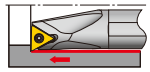
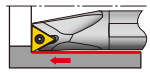
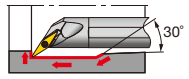
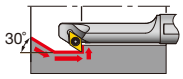
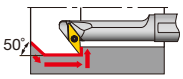
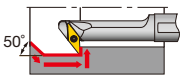
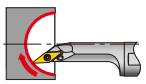
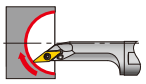
Inch

Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	BOREMEISTER	STREAMJETBAR	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
Boring & internal profiling		**S-SDUCR/L-H**	DC...	Steel Carbide	○	✓	✓		ø0.787" ø1.969"	D034
		**S-SVUCR/L-H**	VC...	Steel Carbide	○	✓	✓		ø1.063" ø1.220"	D073
		**S-SVLCR/L-H**	VC...	Steel Carbide	○	✓	✓		ø1.575" ø1.969"	D072
		**S-DDUNR/L-H**	DN...	Steel Carbide	○	✓	✓		ø1.575" ø1.969"	D046
		**S-DVUNR/L-H**	VN...	Steel Carbide	○	✓	✓		ø2.205"	D079
		**SDUCR/L**	DC...	Steel Carbide	○	✓		✓	ø0.625" ø1.000" ø0.625" ø1.000"	D032
		**SVUCR/L**	VC...	Steel	○	✓		✓	ø0.875" ø1.000"	D072
		**SVUBR/L**	VB...	Steel	○	✓		✓	ø1.000"	D068
		**SDQCR/L**	DC...	Steel	○	✓		✓	ø0.625" ø0.875"	D035
		**SVQCR/L**	VC...	Steel	○	✓		✓	ø0.688" ø1.000"	D074
		**SVQBR/L**	VB...	Steel	○	✓		✓	ø1.000"	D069
		**SYUBR/L**	YW...	Steel Carbide	○			✓	ø1.000" ø0.875" ø1.000"	D088

Internal Toolholder - Quick Guide

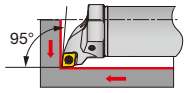
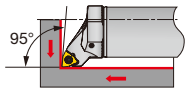
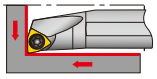
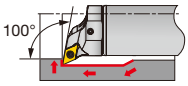
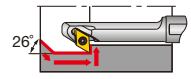
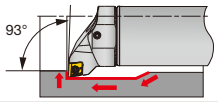
Positive type

Inch

Application	Style	Designation	Insert	Material	Through coolant	ISO Insert	BOREMEISTER	STREAMJETBAR	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
Boring		**STUPR/L**	TP...	Steel Carbide	○	✓		✓	ø0.438" ø1.250" ø0.438" ø0.875"	D060
Blind hole boring		**S-STFPR/L-H**	TP...	Steel Carbide	○	✓	✓		ø0.787" ø1.969"	D059
		**STFPR/L**	TP...	Carbide	○	✓		✓	ø0.500" ø1.000"	D057
		**STFCR/L**	TC...	Carbide	○	✓		✓	ø0.500" ø1.000"	D056
Boring, undercutting & profiling		**SYQBR/L**	YW...	Steel Carbide	○			✓	ø0.750" ø0.875" ø0.750" ø0.875"	D089
Back boring		**SDZCR/L**	DC...	Steel	○	✓		✓	ø0.875"	D037
		**SVZCR/L**	VC...	Steel	○	✓		✓	ø0.750" ø1.000"	D076
		**SVZBR/L**	VB...	Steel	○	✓		✓	ø1.000"	D071
Internal sphere cutting		**SVJCR/L**	VC...	Steel	○	✓		✓	ø1.000"	D075
		**SVJBR/L**	VB...	Steel	○	✓		✓	ø1.000"	D070

Positive double side

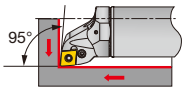
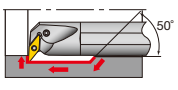
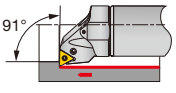
Inch

Appli-cation	Style	Designation	Insert	Material	Through coolant	TUNGBÄMINI	BOREMEISTER	MINIFÄTURN	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
Boring & internal facing		**S-SCLXR/L-H**	CX...	Steel Carbide	○		✓	✓	ø1.260" ø1.969"	D026
		**S-SWLXR/L-H**	WX...	Steel Carbide	○		✓	✓	ø1.260" ø1.969"	D082
		**SWLXR/L**	WX...	Steel Carbide	○			✓	ø0.500" ø1.250" ø0.500" ø1.250"	D081
Boring & internal profiling		**S-SDXXR/L-H**	DX...	Steel Carbide	○		✓	✓	ø1.260" ø1.969"	D040
		**SDXXR/L**	DX...	Steel Carbide	○			✓	ø0.625" ø1.000" ø0.625" ø1.000"	D040
Back boring		**SDZXR/L**	DX...	Steel	○			✓	ø0.625" ø0.875"	D041
Boring & internal profiling		**S-SXUOR05-H**	XOMU	Steel Carbide	○	✓	✓		ø0.984" ø1.260"	D087

Negative type

Inch

Lever lock

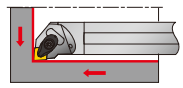
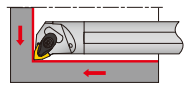
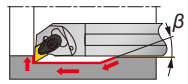
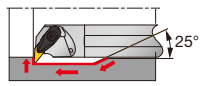
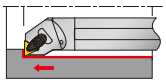
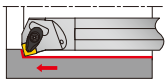
Appli-cation	Style	Designation	Insert	Material	Through coolant	ISOETURN	BOREMEISTER	STREAMJETBAR	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
Boring & internal facing		**S-PCLNR/L-H**	CN..., GN...	Steel Carbide	○	✓	✓		ø1.575" ø1.969"	D030
Boring & internal profiling		**PVUNR/L**	VN...	Steel	○	✓		✓	ø1.250" ø1.650"	D077
Boring		**S-PTFNR/L-H**	TN...	Steel Carbide	○	✓	✓		ø1.575" ø1.969"	D064

Internal Toolholder - Quick Guide

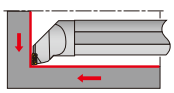
Negative type

Inch

Double clamp

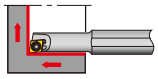
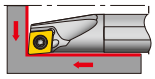
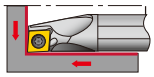
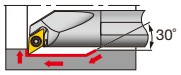
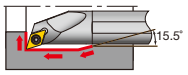
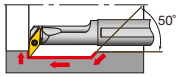
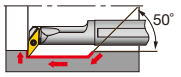
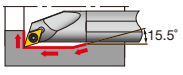
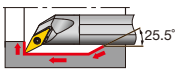
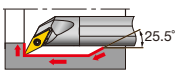
Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	ISOTURN	TURNING	Min. bore diameter DMIN (in) 0 0.500 1.000 1.500 2.000 2.500	Page
Boring & internal facing		**ACLNR/L**	CN..., GN...	Steel	○	✓	✓	✓	ø1.250" ø2.500"	D031
Boring & internal facing		**AWLNR/L**	WN...	Steel	○	✓	✓	✓	ø1.250" ø2.500"	D085
Boring & internal profiling		**ADUNR/L**	DN..., FN...	Steel	○	✓	✓	✓	ø1.250" ø2.000"	D045
Boring & internal profiling		**AVUNR/L**	VN..., YN...	Steel	○	✓		✓	ø1.560" ø2.000"	D078
Boring		**ATFNR/L**	TN...	Steel	○	✓		✓	ø1.250" ø1.560"	D065
Boring		**ASKNR/L**	SN...	Steel	○	✓		✓	ø1.250" ø1.500"	D055

Screw-on

Appli-cation	Style	Designation	Insert	Material	Through coolant	TURNTEC	Min. bore diameter DMIN (in) 1.500 2.000 2.500 3.000 3.500 4.000	Page
Boring & internal facing		**S-TLANR/L**	LNMX	Steel		✓	ø2.090" ø3.350"	D050

Positive type

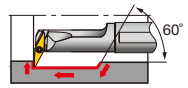
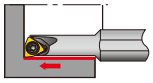
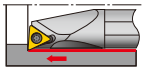
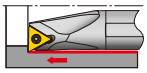
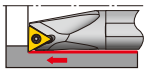
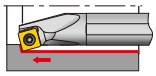
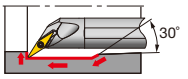
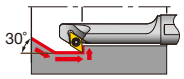
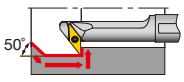
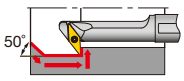
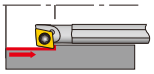
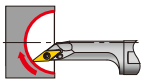
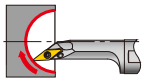
Metric

Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	BOREMEISTER	STREAMJETBAR	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
Boring & internal facing		**SEXPR/L**	EP...	Steel Carbide	○	✓		✓	ø4.5 ø7 ø4.5 ø7	D048
		**SCLCR/L**	CC...	Steel Carbide Reinforced	○	✓		✓	ø5 ø27 ø5 ø27 ø16 ø32	D018 - D020
		**SCLPR/L**	CP...	Steel Carbide Reinforced	○	✓		✓	ø10 ø27 ø10 ø20 ø14 ø32	D022 D024
Boring & internal profiling		**SDUCR/L**	DC...	Steel Carbide	○	✓		✓	ø13 ø32 ø13 ø27	D032
		**SDUPR/L**	DP...	Steel Carbide	○			✓	ø15 ø22 ø15 ø22	D038
		**SVUCR/L**	VC...	Steel Carbide Reinforced	○	✓		✓	ø16 ø32 ø18 ø32 ø32	D072 D073
		**SVUBR/L**	VB...	Steel Carbide Reinforced	○	✓		✓	ø20 ø32 ø24.5 ø34 ø25	D068
		**SDQCR/L**	DC...	Steel Carbide Reinforced	○	✓		✓	ø13 ø30 ø13 ø25 ø20 ø32	D035 D036
		**SDQPR/L**	DP...	Steel Carbide	○			✓	ø15 ø22 ø15 ø22	D039
		**SVQCR/L**	VC...	Steel Carbide Reinforced	○	✓		✓	ø13.5 ø21.5 ø13.5 ø21.5 ø32	D074
		**SVQBR/L**	VB...	Steel Carbide Reinforced	○	✓		✓	ø17 ø30.5 ø17 ø30.5 ø25	D069 D070

Internal Toolholder - Quick Guide

Positive type

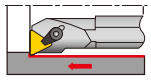
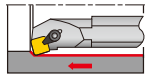
Metric

Application	Style	Designation	Insert	Material	Through coolant	ISO Insert	STREAMJETBAR	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
Boring & internal profiling		**SYUBR/L**	YW...	Steel Carbide	○		✓	ø20 ø20 ø24.5	D088
Boring		**SWUBR/L**	WB...	Steel Carbide	○	✓	✓	ø6 ø8 ø6 ø8	D080
Boring		**STUPR/L**	TP...	Steel Carbide Reinforced	○	✓	✓	ø8 ø34 ø8 ø27 ø14 ø31	D060 - D062
Blind hole boring		**STFPR/L**	TP...	Steel Carbide	○	✓	✓	ø10 ø27 ø10 ø22	D057
Blind hole boring		**STFCR/L**	TC...	Steel Carbide	○	✓	✓	ø12 ø18 ø12 ø18	D056
Through boring		**SSKPR**	SP...	Steel	○	✓	✓	ø20 ø31	D052
Boring, undercutting & profiling		**SYQBR/L**	YW...	Steel Carbide	○		✓	ø17 ø21.5 ø17 ø21.5	D089
Back boring		**SDZCR/L**	DC...	Steel Carbide	○	✓	✓	ø14 ø25 ø18 ø22	D037
Back boring		**SVZCR/L**	VC...	Steel	○	✓	✓	ø16	D076
Back boring		**SVZBR/L**	VB...	Steel	○	✓	✓	ø20 ø40	D071
Back boring		**SEZPR/L**	EP...	Steel Carbide	○	✓	✓	ø5.5 ø6.5 ø5.5 ø6.5	D049
Internal sphere cutting		**SVJCR/L**	VC...	Steel	○	✓	✓	ø16 ø20	D075
Internal sphere cutting		**SVJBR/L**	VB...	Steel	○	✓	✓	ø25 ø30	D070

Positive type

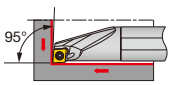
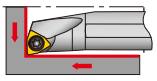
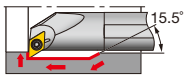
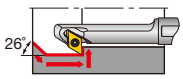
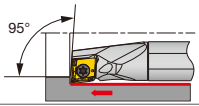
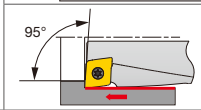
Metric

Clamp on

Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
Blind hole boring		**CTFPR/L**	TP... Without hole	Steel Carbide		✓	ø16 ø40 ø16 ø20	D058
Through boring		**CSKPR/L**	SP... Without hole	Steel		✓	ø20 ø32	D053

Positive double side

Metric

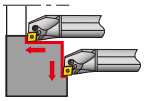
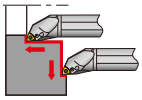
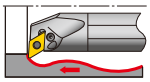
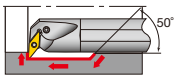
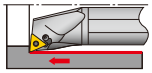
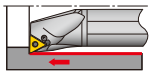
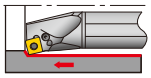
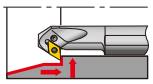
Appli-cation	Style	Designation	Insert	Material	Through coolant	TUNGBMINI	BOREMEISTER	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
Boring & internal facing		**SCLXR/L**	CX...	Steel Carbide	○			✓	ø12 ø22 ø12 ø22	D025
		**SWLXR/L**	WX...	Steel Carbide	○			✓	ø12 ø22 ø12 ø22	D081
Boring & internal profiling		**SDXXR/L**	DX...	Steel Carbide	○			✓	ø13 ø24 ø13 ø24	D040
Back boring		**SDZXR/L**	DX...	Steel Carbide	○			✓	ø14 ø20 ø18 ø22	D041
Boring		**A/E-SXUOR/L**	XOMU	Steel Carbide	○	✓			ø10 ø14 ø10 ø14	D086
		**TBM**	XOMU	Steel	○	✓			ø10 ø16	D086

Internal Toolholder - Quick Guide

Negative type

Metric

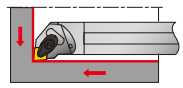
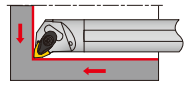
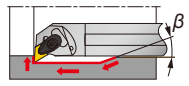
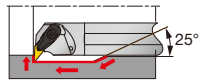
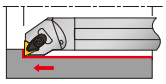
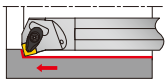
Lever lock

Application	Style	Designation	Insert	Material	Through coolant	ISO Insert	ISOTURN	STREAMJETBAR	TUNGTJET	Min. bore diameter DMIN (mm) 20 30 40 50 60 70	Page
Boring & internal facing		**PCLNR/L**	CN..., GN...	Steel Reinforced	○	✓	✓	✓	✓	ø20 ø63 ø20 ø63	D027 - D029
		**PWLNR/L**	WN...	Steel	○	✓	✓	✓		ø20 ø50	D083 D084
Boring & internal profiling		**PDUNR/L**	DN..., FN...	Steel Reinforced	○	✓	✓	✓	✓	ø25 ø63 ø40 ø63	D042 - D044
		**PVUNR/L**	VN..., YN...	Steel	○	✓	✓	✓		ø37 ø50	D077
Boring		**PTUNR/L**	TN...	Steel Reinforced	○	✓	✓	✓		ø20 ø40 ø20 ø63	D066 D067
		**PTFNR/L**	TN...	Steel	○	✓	✓	✓		ø32 ø63	D063 D064
Through boring		**PSKNR/L**	SN...	Steel	○	✓		✓		ø40 ø63	D054
Back boring		**PDZNR/L**	DN...	Steel	○	✓		✓		ø40 ø63	D046 D047

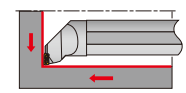
Negative type

Metric

Double clamp

Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	ISOTURN	TURNING	Min. bore diameter DMIN (mm) 20 30 40 50 60 70	Page
Boring & internal facing		**ACLNR/L**	CN..., GN...	Steel	○	✓	✓	✓	ø32 — ø63	D031
Boring & internal facing		**AWLNR/L**	WN...	Steel	○	✓	✓	✓	ø32 — ø63	D085
Boring & internal profiling		**ADUNR/L**	DN..., FN...	Steel	○	✓	✓	✓	ø32 — ø63	D045
Boring & internal profiling		**AVUNR/L**	VN..., YN...	Steel	○	✓		✓	ø40 — ø50	D078
Boring		**ATFNR/L**	TN...	Steel	○	✓		✓	ø32 — ø40	D065
Boring		**ASKNR/L**	SN...	Steel	○	✓		✓	ø32 — ø40	D055

Screw-on

Appli-cation	Style	Designation	Insert	Material	Through coolant	TURNTEC	Min. bore diameter DMIN (mm) 40 50 60 70 80 90	Page
Boring & internal facing		**S-TLANR/L**	LNMX	Steel		✓	ø53 — ø85	D050

BOREMEISTER

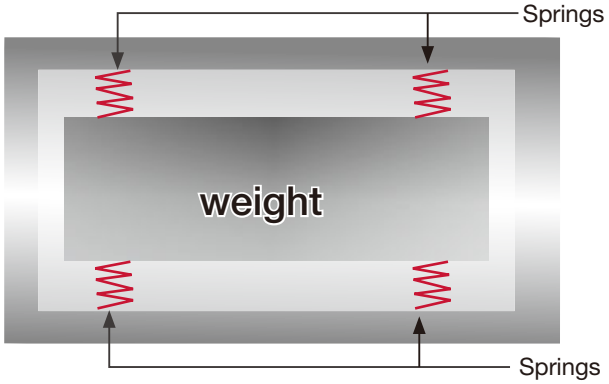


Unique anti-vibration mechanism in the tool body reduces vibration during deep hole boring with long overhangs of up to **L/D = 10**

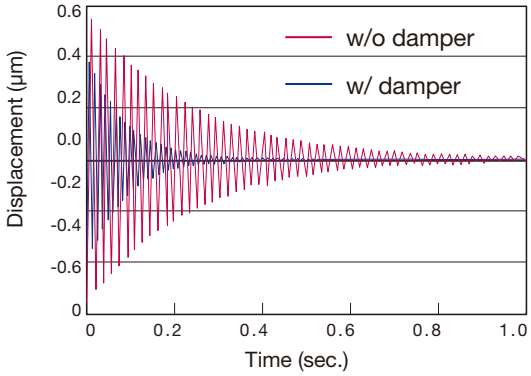
Vibration Dampening Mechanism

When cutting forces create vibration on boring bar set up with long overhangs, the bar's dampening mechanism counters the tool's motion and cancels the vibration.
The dampening mechanism consists of a weight supported by spring elements.
The vibrations die out quickly eliminating noise and chatter marks.

- Concept image of dampening

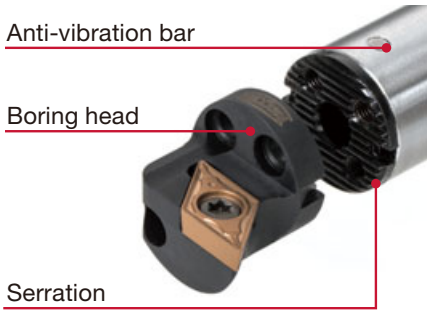


- Tool vibrations with and without vibration damper



Standard Lineup

BoreMeister is comprised of the anti-vibration bar and interchangeable boring head, featuring serrated interfaces for high precision indexing. They are connected by screws, allowing the fitting of a wide range of cutting heads for great flexibility.
- Minimum bore diameter : ø20 mm (0.787")





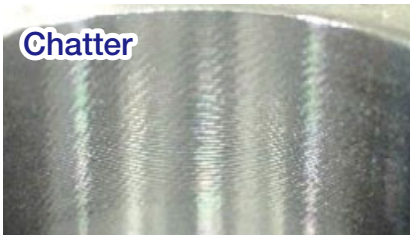
Reference pages: D021, D026, D030, D034, D040, D046, D059, D064, D072, D073, D079, D082, D090 - D092

STREAMJETBAR



Engineered for tool strength and optimal chip evacuation

Tool body of special alloy steel, designed to reduce chatter !



Competitor



STREAMJETBAR

Minimum bore diameter from ø0.177" (ø4.5 mm)

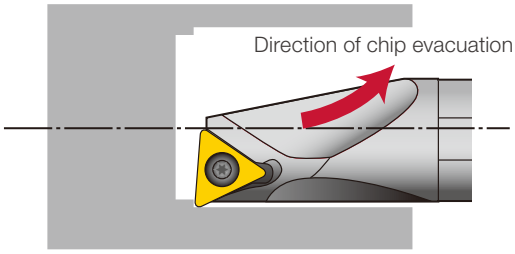
Steel and carbide shank available

New pocket design for excellent chip evacuation

Cutting performance

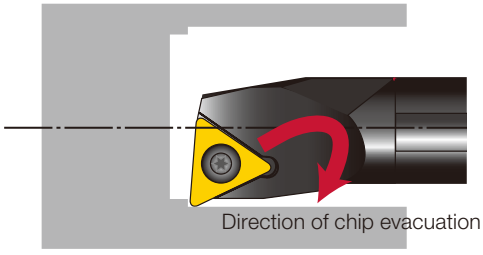
The excellent chip evacuation minimizes tool failure caused by recutting chips and poor chip control. Damage to the work surface from chips is also eliminated.

STREAMJETBAR



Combination of the well designed chip pocket and coolant flow helps chips to effectively evacuate.

Competitor



Chip packing is likely to occur.

Reference pages: D018 -, D032 -, D048 -, D052 -, D056 -, D070 -, D076 -, D080 -

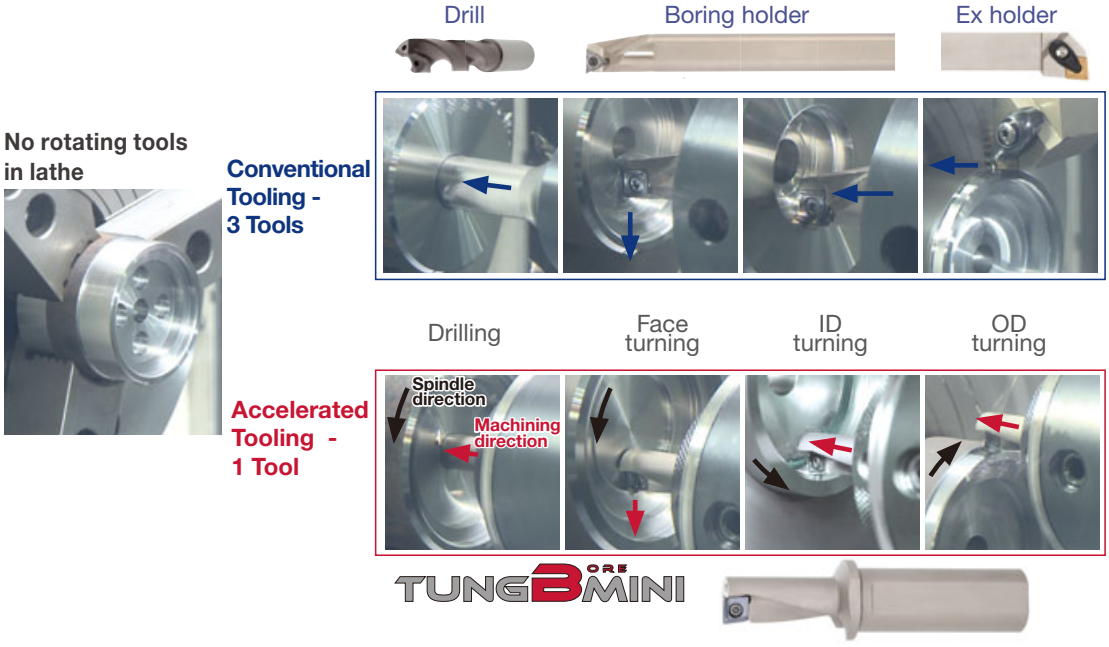
TUNGBORE MINI



Reduced machine downtime thanks to eliminating the need for tool changes. Multifunctional Tool for Drilling and Turning.

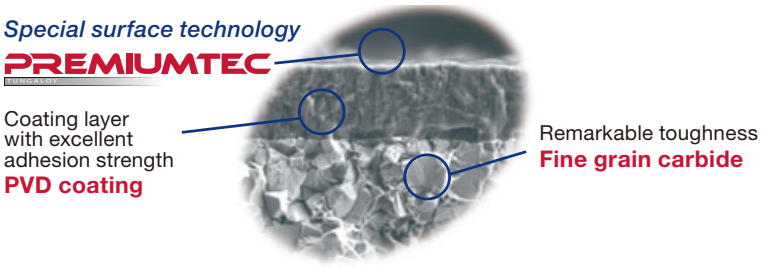
Minimum number of tools for maximum productivity

- A single TungBoreMini tool can handle multiple operations such as ID turning after drilling without exchanging the tools
- Allows drilling and hole enlargement on various materials, instead of using a drill and turning tool
- Can be used just like a standard ISO turning tool for ID, OD, and/or face turning applications



PVD grade: AH725

AH725 features a super tough substrate with a new PVD coating layer.



Reference pages: D086 -

MINIFORCE TURN

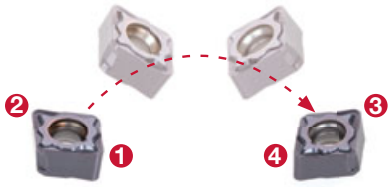


Economical double-sided positive insert

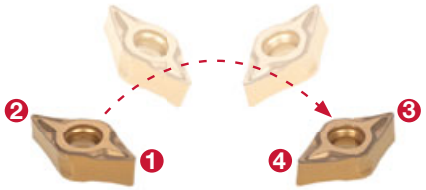
Innovative geometry and seat interface ensures stability and high performance.

Insert

CXMU 22... 4 edges, rhombic 80°



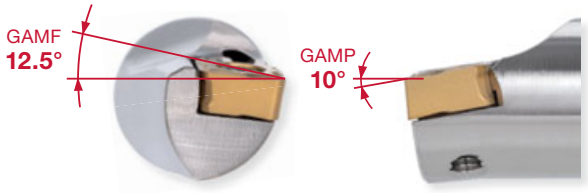
DXM/GU 22... 4 edges, rhombic 55°



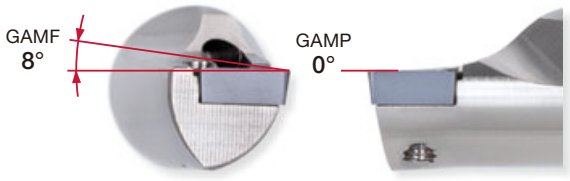
WXGU 22... 6 positive cutting edges



Low cutting force machining with high rake angle



MINIFORCE TURN
A12M-SCLXR06-D140



Conventional
A12M-SCLCR06-D140

Reference pages: D025, D026, D040, D041, D081, D082

CC

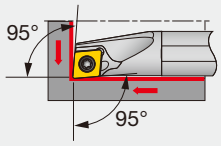


Rhombic, 80°
with hole
Positive 7°

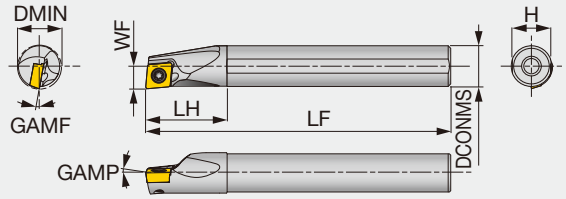
STREAMJETBAR

A/E-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A05-SCLCR/L2-D06	Steel	0.375	0.313	0.200	4.500	0.630	0.300	0°	-14°	0.016	CC** 21.5...	0.89
A06-SCLCR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CC** 21.5...	0.89
A08-SCLCR/L2-D11	Steel	0.687	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CC** 21.5...	0.89
A10-SCLCR/L3-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC** 32.5...	2.2
A12-SCLCR/L3-D16	Steel	1.000	0.750	0.594	7.000	1.438	0.725	0°	-5°	0.031	CC** 32.5...	2.2
A16-SCLCR/L3-D20	Steel	1.250	1.000	0.687	7.000	1.750	0.975	0°	-4°	0.031	CC** 32.5...	2.2
E06-SCLCR/L2-D08	Carbide	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CC** 21.5...	0.89
E08-SCLCR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CC** 21.5...	0.89
E10-SCLCR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC** 21.5...	0.89
E10-SCLCR/L3-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC** 32.5...	2.2
E12-SCLCR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.725	0°	-5°	0.031	CC** 32.5...	2.2
E16-SCLCR/L3-D20	Carbide	1.250	1.000	0.687	10.000	1.750	0.975	0°	-4°	0.031	CC** 32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A04F-SCLCR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-15°	0.2	CC**03X1...	0.6
A05F-SCLCR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.2	CC**03X1...	0.6
A06G-SCLCR/L04-D070	Steel	7	6	3.5	90	11	5.75	0°	-13°	0.2	CC**04T1...	0.6
A07G-SCLCR/L04-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.2	CC**04T1...	0.6
A08H-SCLCR/L06-D100	Steel	10	8	5.5	100	16	7.5	0°	-13°	0.4	CC**0602...	1.2
A10F-SCLCR06-D120	Steel	12	10	6	80	20	9	0°	-10°	0.4	CC**0602...	1.2
A10K-SCLCR/L06-D120	Steel	12	10	6	125	20	9	0°	-10°	0.4	CC**0602...	1.2
A12H-SCLCR06-D140	Steel	14	12	7	100	24	11	0°	-8°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D140	Steel	14	12	7	150	24	11	0°	-8°	0.4	CC**0602...	1.2
A12H-SCLCR06-D160	Steel	16	12	9	100	24	11	0°	-7°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D160	Steel	16	12	9	150	24	11	0°	-7°	0.4	CC**0602...	1.2
A16K-SCLCR09-D180	Steel	18	16	9	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D180	Steel	18	16	9	180	32	15	0°	-10°	0.8	CC**09T3...	3
A16K-SCLCR09-D200	Steel	20	16	11	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D200	Steel	20	16	11	180	32	15	0°	-9°	0.8	CC**09T3...	3
A20R-SCLCR/L09-D220	Steel	22	20	11	200	32	18	0°	-8°	0.8	CC**09T3...	3
A25S-SCLCR/L09-D270	Steel	27	25	13.5	250	45	23	0°	-6°	0.8	CC**09T3...	3
E04G-SCLCR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-15°	0.2	CC**03X1...	0.6
E05G-SCLCR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.2	CC**03X1...	0.6
E06H-SCLCR/L04-D070	Carbide	7	6	3.5	100	12	5.75	0°	-13°	0.2	CC**04T1...	0.6
E07H-SCLCR/L04-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.2	CC**04T1...	0.6
E08G-SCLCR06-D100	Carbide	10	8	5.5	90	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E08K-SCLCR/L06-D100	Carbide	10	8	5.5	125	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E10F-SCLCR06-D120	Carbide	12	10	6	80	25	9	0°	-10°	0.4	CC**0602...	1.2
E10H-SCLCR06-D120	Carbide	12	10	6	100	25	9	0°	-10°	0.4	CC**0602...	1.2
E10M-SCLCR/L06-D120	Carbide	12	10	6	150	25	9	0°	-10°	0.4	CC**0602...	1.2
E12G-SCLCR06-D140	Carbide	14	12	7	90	27	11	0°	-8°	0.4	CC**0602...	1.2
E12J-SCLCR06-D140	Carbide	14	12	7	110	27	11	0°	-8°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D140	Carbide	14	12	7	180	27	11	0°	-8°	0.4	CC**0602...	1.2
E12G-SCLCR06-D160	Carbide	16	12	9	90	27	11	0°	-7°	0.4	CC**0602...	1.2
E12J-SCLCR06-D160	Carbide	16	12	9	110	27	11	0°	-7°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D160	Carbide	16	12	9	180	27	11	0°	-7°	0.4	CC**0602...	1.2
E16H-SCLCR09-D180	Carbide	18	16	9	100	32	15	0°	-10°	0.8	CC**09T3...	3
E16L-SCLCR09-D180	Carbide	18	16	9	130	32	15	0°	-10°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D180	Carbide	18	16	9	200	32	15	0°	-10°	0.8	CC**09T3...	3

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
E16H-SCLCR09-D200	Carbide	20	16	11	100	32	15	0°	-9°	0.8	CC**09T3...	3
E16L-SCLCR09-D200	Carbide	20	16	11	130	32	15	0°	-9°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D200	Carbide	20	16	11	200	32	15	0°	-9°	0.8	CC**09T3...	3
E20S-SCLCR09-D220	Carbide	22	20	11	250	36	18	0°	-8°	0.8	CC**09T3...	3
E25T-SCLCR09-D270	Carbide	27	25	13.5	300	45	23	0°	-6°	0.8	CC**09T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

INCH SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLCR/L2-D...	CSTB-2.5S	T-8F
A**-SCLCR/L3-D...	CSTB-4S	T-15F
E06-SCLCR/L2-D08	CSTB-2.5S	T-8F
E**-SCLCR/L2-D...	CSTB-2.5B	T-8F
E**-SCLCR/L3-D...	CSTB-4S	T-15F

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLCR/L03-D...	CSTA-1.6	T-6F
A**-SCLCR/L04-D...	CSTB-2	T-6F
A**-SCLCR/L06-D...	CSTB-2.5S	T-8F
A**-SCLCR/L09-D...	CSTB-4S	T-15F
E**-SCLCR/L03-D...	CSTA-1.6	T-6F
E**-SCLCR/L04-D...	CSTB-2	T-6F
E**-SCLCR/L06-D...	CSTB-2.5S	T-8F
E16*-SCLCR/L09-D...	CSTB-4L060	T-15F
E2**-SCLCR/L09-D...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	NS9530	SH725	T9215
Breaker Shape	JP	PSS	JS	PS
Cutting conditions	B016			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	AH6225	SH725	AH6225
Chipbreaker shape	JP	PSS	JS	PS
Cutting conditions	B018			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

M

Application	Medium cutting
Grade	AH6225
Chipbreaker shape	PM
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: A/E-SCLCR/L: Insert → B112 -, CBN → B189 -, PCD → B213

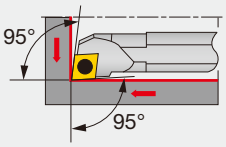
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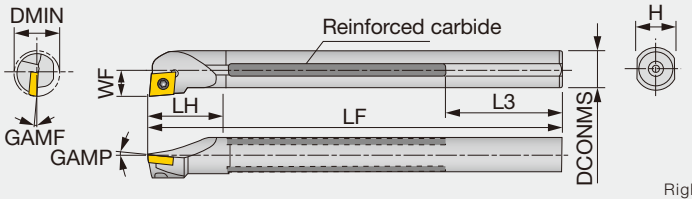
Rhombic, 80°
with hole
Positive 7°

T-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque
T12M-SCLCR/L06	Reinforced	16	–	12	9	150	22	59	11	-10°	0°	0.4	CC**0602...	1.2
T16Q-SCLCR/L09	Reinforced	20	–	16	11	180	27	59	15	-10°	0°	0.8	CC**09T3...	3
T20R-SCLCR/L09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-8°	0°	0.8	CC**09T3...	3
T25S-SCLCR/L09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	0°	0.8	CC**09T3...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
T12M-SCLCR/L06	CSTB-2.5	T-8F
T16Q-SCLCR/L09	CSTB-4S	T-15F
T20R-SCLCR/L09C	CSTB-4S	T-15F
T25S-SCLCR/L09C	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	NS9530	SH725	T9215
Breaker Shape	JP	PSS	JS	PS
Cutting conditions	B016			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	AH6225	SH725	AH6225
Chipbreaker shape	JP	PSS	JS	PS
Cutting conditions	B018			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

M

Application	Medium cutting
Grade	AH6225
Chipbreaker shape	PM
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

H

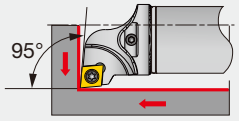
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: T-SCLCR/L: Insert → B112 -, CBN → B189 -, PCD → B213

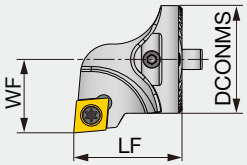
BOREMEISTER

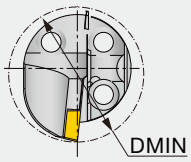
S-SCLCR/L-H

Screw-on clamp exchangeable boring head, for positive 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S16-SCLCR/L06-H	0.787	0.630	0.433	0.787	D/G.625	CC** 21.5...
S20-SCLCR/L09-H	0.984	0.787	0.512	0.787	D/G.750	CC** 32.5...
S25-SCLCR/L09-H	1.260	0.984	0.669	0.866	D1.00	CC** 32.5...
S32-SCLCR/L09-H	1.575	1.260	0.866	1.260	D1.25	CC** 32.5...
S40-SCLCR/L12T-H	1.969	1.575	1.063	1.496	D1.50, D2.00, D2.50	CC** 43...

Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SCLCR/L06-H	SR14-548	T-7/5	-	-
S20-SCLCR/L09-H	SR16-236	T-15/5	-	-
S25-SCLCR/L09-H	SR16-236	T-15/5	-	-
S32-SCLCR/L09-H	SR16-236	T-15/5	-	-
S40-SCLCR/L12T-H	SR16-212	T-20/5	TCC4-2	SRTC-4

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	NS9530	SH725	T9215
Breaker Shape	JP	PSS	JS	PS
Cutting conditions	B016			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	AH6225	SH725	AH6225
Chipbreaker shape	JP	PSS	JS	PS
Cutting conditions	B018			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

M

Application	Medium cutting
Grade	AH6225
Chipbreaker shape	PM
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)	DIA	AL
Cutting conditions	B022		

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: S-SCLCR/L-H: Insert → B112 -, CBN → B189 -, PCD → B213
Shank → D090 - D092

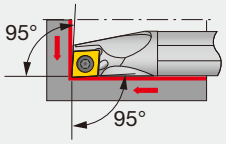
CP

Rhombic, 80°
with hole
Positive 11°

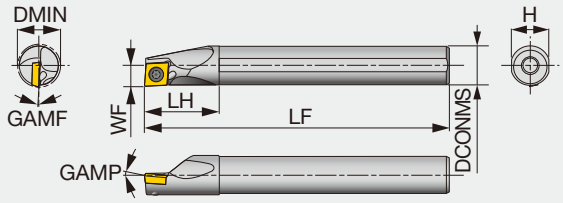
STREAMJETBAR

A/E-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SCLPR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	5°	-5°	0.016	CP** 21.5...	0.89
A08-SCLPR/L2-D11	Steel	0.687	0.500	0.406	5.000	1.000	0.475	5°	-2°	0.016	CP** 21.5...	0.89
A10-SCLPR/L3-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	5°	-2°	0.016	CP** 32.5...	2.21
E06-SCLPR/L2-D08	Carbide	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CP** 21.5...	0.89
E08-SCLPR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CP** 21.5...	0.89
E10-SCLPR/L3-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.032	CP** 32.5...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A08H-SCLPR/L06-D100	Steel	10	8	5.5	100	16	7.5	5°	-8°	0.4	CP**0602...	1.2
A10K-SCLPR/L06-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0602...	1.2
A10K-SCLPR/L08-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0802...	1.4
A12M-SCLPR/L06-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0602...	1.2
A12M-SCLPR/L08-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0802...	1.4
A12M-SCLPR/L08-D160	Steel	16	12	9	150	24	11	5°	-3°	0.4	CP**0802...	1.4
A16Q-SCLPR/L09-D180	Steel	18	16	9	180	32	15	5°	-3.5°	0.8	CP**0903...	3
A16Q-SCLPR/L09-D200	Steel	20	16	11	180	32	15	5°	-3°	0.8	CP**0903...	3
A20R-SCLPR/L09-D220	Steel	22	20	11	200	36	18	5°	-2°	0.8	CP**0903...	3
A25S-SCLPR/L09-D270	Steel	27	25	13.5	250	45	23	5°	-1°	0.8	CP**0903...	3
E08K-SCLPR/L06-D100	Carbide	10	8	5.5	125	22	7.5	5°	-8°	0.4	CP**0602...	1.2
E10M-SCLPR/L06-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0602...	1.2
E10H-SCLPR08-D120	Carbide	12	10	6	100	25	9	5°	-5°	0.4	CP**0802...	1.4
E10M-SCLPR/L08-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0802...	1.4
E12Q-SCLPR/L06-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0602...	1.2
E12G-SCLPR08-D140	Carbide	14	12	7	90	27	11	5°	-4°	0.4	CP**0802...	1.4
E12J-SCLPR08-D140	Carbide	14	12	7	110	27	11	5°	-4°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0802...	1.4
E12G-SCLPR08-D160	Carbide	16	12	9	90	27	11	5°	-3°	0.4	CP**0802...	1.4
E12J-SCLPR08-D160	Carbide	16	12	9	110	27	11	5°	-3°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D160	Carbide	16	12	9	180	27	11	5°	-3°	0.4	CP**0802...	1.4
E16H-SCLPR09-D180	Carbide	18	16	9	100	32	15	5°	-3.5°	0.8	CP**0903...	3
E16L-SCLPR09-D180	Carbide	18	16	9	130	32	15	5°	-3.5°	0.8	CP**0903...	3
E16R-SCLPL09-D180	Carbide	18	16	9	200	32	15	5°	-3.5°	0.8	CP**0903...	3
E16H-SCLPR09-D200	Carbide	20	16	11	100	32	15	5°	-3°	0.8	CP**0903...	3
E16L-SCLPR09-D200	Carbide	20	16	11	130	32	15	5°	-3°	0.8	CP**0903...	3
E16R-SCLPL09-D200	Carbide	20	16	11	200	32	15	5°	-3°	0.8	CP**0903...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

Reference pages: A/E-SCLPR/L: Insert → B118 -, CBN → B192

INCH SPARE PARTS




Designation	Clamping screw	Wrench
A06-SCLPR/L2-D08	CSTB-2.5L042	T-8F
A08-SCLPR/L2-D11	CSTB-2.5S	T-8F
A10-SCLPR/L3-D14	CSTB-4L070	T-15F
E06-SCLPR/L2-D08	CSTB-2.5S	T-8F
E08-SCLPR/L2-D11	CSTB-2.5B	T-8F
E10-SCLPR/L3-D14	CSTB-4S	T-15F

METRIC SPARE PARTS




Designation	Clamping screw	Wrench
A**-SCLPR/L06-D...	CSTB-2.5S	T-8F
A10K-SCLPR/L08-D120	CSTB-3L042	T-9F
A12M-SCLPR/L08-D...	CSTB-3L050	T-9F
A**-SCLPR/L09-D...	CSTB-4L060	T-15F
E**-SCLPR/L06-D...	CSTB-2.5S	T-8F
E10*-SCLPR/L08-D...	CSTB-3L042	T-9F
E12*-SCLPR/L08-D...	CSTB-3L050	T-9F
E16*-SCLPR/L09-D...	CSTB-4L060	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS 	PS 	PM 
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Chipbreaker shape	PSS 	PS 	PM 
Cutting conditions	B018		

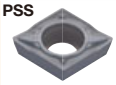
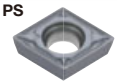
K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B020

N

Application	Finishing
Grade	DX140
Breaker Shape	DIA 
Cutting conditions	B022

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PSS 	PS 
Cutting conditions	B024	

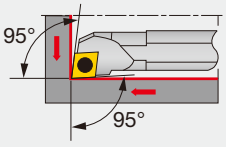
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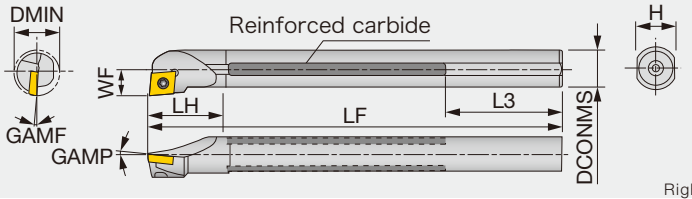
Rhombic, 80°
with hole
Positive 11°

T-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque
T12M-SCLPR08-D14	Reinforced	14	-	12	7	150	22	59	11	-4°	5°	0.4	CP**0802...	1.4
T12M-SCLPR/L08	Reinforced	16	-	12	9	150	25	59	11	-3°	5°	0.4	CP**0802...	1.4
T16Q-SCLPR09-D18	Reinforced	18	-	16	9	180	27	59	15	-3.5°	5°	0.8	CP**0903...	3
T16Q-SCLPR/L09	Reinforced	20	-	16	11	180	30	59	15	-4°	5°	0.8	CP**0903...	3
T20R-SCLPR09C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T20R-SCLPR/L09	Reinforced	25	-	20	13	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T25S-SCLPR09C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	-1°	5°	0.8	CP**0903...	3
T25S-SCLPR/L09	Reinforced	32	-	25	17	250	40	64	23	0°	5°	0.8	CP**0903...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
T12M-SCLPR/L08...	CSTB-3L050	T-9F
T16Q-SCLPR09-D18	CSTB-4L060	T-15F
T16Q-SCLPR/L09	CSTB-4S	T-15F
T20R-SCLPR09C-D22	CSTB-4L060	T-15F
T20R-SCLPR/L09	CSTB-4S	T-15F
T25S-SCLPR09C-D27	CSTB-4L060	T-15F
T25S-SCLPR/L09	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS 	PS 	PM 
Cutting conditions	B016		

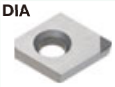
M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Chipbreaker shape	PSS 	PS 	PM 
Cutting conditions	B018		

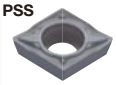
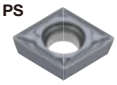
K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B020

N

Application	Finishing
Grade	DX140
Breaker Shape	DIA 
Cutting conditions	B022

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PSS 	PS 
Cutting conditions	B024	

Reference pages: T-SCLPR/L: Insert → B118 -, CBN → B192

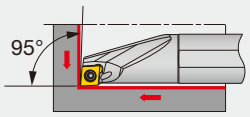
CX

Rhombic, 80° with hole

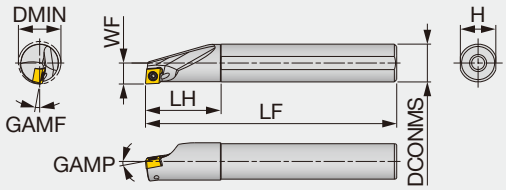
MINIFORCE TURN

A/E-SCLXR/L

Screw-on boring bar, for CXMU inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A10K-SCLXR/L06-D120	Steel	12	10	6	125	20	9	-10°	-14.5°	0.4	CXMU0603**L/R...	0.9
A12M-SCLXR/L06-D140	Steel	14	12	7	150	24	11	-10°	-12.5°	0.4	CXMU0603**L/R...	0.9
A16Q-SCLXR/L06-D180	Steel	18	16	9	180	32	15	-10°	-9.5°	0.4	CXMU0603**L/R...	0.9
A20R-SCLXR/L06-D220	Steel	22	20	11	200	36	18	-10°	-8°	0.4	CXMU0603**L/R...	0.9
E10M-SCLXR/L06-D120	Carbide	12	10	6	150	25	9	-10°	-14.5°	0.4	CXMU0603**L/R...	0.9
E12Q-SCLXR/L06-D140	Carbide	14	12	7	180	27	11	-10°	-12.5°	0.4	CXMU0603**L/R...	0.9
E16R-SCLXR/L06-D180	Carbide	18	16	9	200	32	15	-10°	-9.5°	0.4	CXMU0603**L/R...	0.9
E20S-SCLXR/L06-D220	Carbide	22	20	11	250	36	18	-10°	-8°	0.4	CXMU0603**L/R...	0.9

Torque: Recommended clamping torque: N·m **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SCLXR/L...	SR34-514	T-7F

❶ Use the right hand toolholder (R) for the left hand insert (L)
❷ Use the left hand toolholder (L) for the right hand insert (R)



❶ Right hand toolholder with left hand insert shown



❷ Left hand toolholder with right hand insert shown

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	TS	TS
Cutting conditions	D096	

M

Application	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	TS	TS
Cutting conditions	D096	

K

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	TS	TS
Cutting conditions	D096	

S

Application	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	TS	TS
Cutting conditions	D096	

Reference pages: A/E-SCLXR/L: Insert → B120
Standard cutting conditions → D096

CX

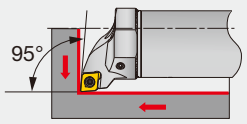


Rhombic, 80° with hole

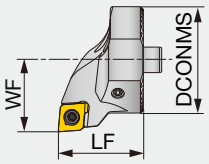
MINIFORCE TURN

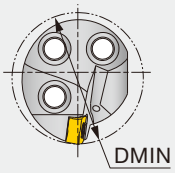
S-SCLXR/L-H

Screw-on clamp exchangeable boring head, for CXMU inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SCLXR/L06-H	1.260	0.984	0.669	0.787	D1.00	CXMU 22**L/R...
S32-SCLXR/L06-H	1.575	1.260	0.866	1.260	D1.25	CXMU 22**L/R...
S40-SCLXR/L06-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	CXMU 22**L/R...

Note: Use right-hand toolholders (SCLXR**) with left-hand inserts (L); and left-hand toolholders (SCLXL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
S**-SCLXR/L06-H	SR34-514	T-7F

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	TS	TS
Cutting conditions	D096	

M

Application	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	TS	TS
Cutting conditions	D096	

K

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	TS	TS
Cutting conditions	D096	

S

Application	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	TS	TS
Cutting conditions	D096	

Reference pages: S-SCLXR/L-H: Insert → B120, Shank → D090 - D092
Standard cutting conditions → D096

CN GN

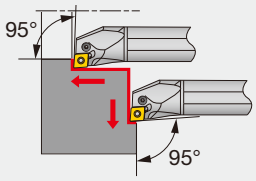
CN Rhombic, 80° with hole

GN Rhombic, 70° with hole

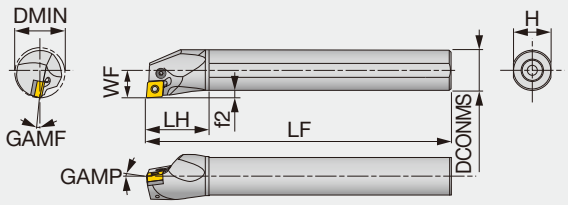
STREAMJETBAR

A-PCLNR/L

Lever-lock boring bar, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Righthand(R)shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PCLNR/L0904-D200	Steel	20	16	11	150	32	15	3	-6°	-16°	0.8	CN**/GNMG0904...	1.7
A20Q-PCLNR/L0904-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**/GNMG0904...	1.7
A16M-PCLNR/L09-D200	Steel	20	16	11	150	32	15	3	-6°	-14°	0.8	CN**0903...	1.7
A20Q-PCLNR/L09-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0903...	1.7
A25R-PCLNR/L09-D320	Steel	32	25	17	200	45	23	4.5	-6°	-11°	0.8	CN**0903...	1.7
A25R-PCLNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**/GNGA1204...	2.7
A32S-PCLNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	CN**/GNGA1204...	4.8
A40T-PCLNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	CN**/GNGA1204...	4.8
A50U-PCLNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	CN**/GNGA1204...	4.8

Torque: Recommended clamping torque: N·m **RE: Standard corner radius
Note: Use right-hand toolholders (PCLNR**) with left-hand inserts (L); and left-hand toolholders (PCLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PCLNR/L0904-D200	-	-	LCS33	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PCLNR/L0904-D250	-	-	LCS33	P-2F	-	-	LCL33N	EA-20	SSHM3-4
A**-PCLNR/L09-D**0	-	LCS22A	-	P-2F	-	-	LCL32N	EA-25	SSHM5-6
A25R-PCLNR/L12-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-25	SSHM5-6
A32S-PCLNR12-D400	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A32S-PCLNL12-D400	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A40T-PCLNR12-D500	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A40T-PCLNL12-D500	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PCLNR12-D630	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PCLNL12-D630	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX815	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-PCLNR/L: Insert → B054 -, B075, CBN → B168 -, PCD → B211

CN GN



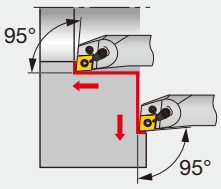
Rhombic, 80° with hole



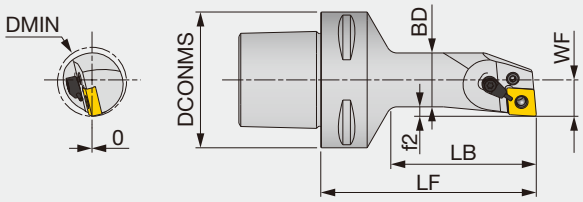
Rhombic, 70° with hole

TUNGCAP C-PCLNL-CHP

Lever-lock boring bar with TungCap connection, with 95° approach angle, for negative 80°/70° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Left hand (L) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**/GNGA1204...

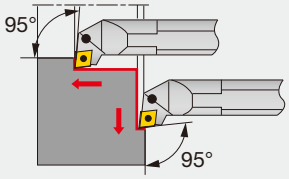
Applicable for 14 MPa coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5F	LCL43N

S-PCLNR/L

Lever-lock boring bar, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMP	GAMF	RE**	Insert	Torque
S16M-PCLNR/L09	Steel	20	16	11	150	30	15	15.5	-6°	-14°	0.8	CN**0903...	1.7
S20Q-PCLNR/L09	Steel	25	20	13	180	35	18	19	-6°	-12°	0.8	CN**0903...	1.7
S25R-PCLNR/L09	Steel	32	25	17	200	40	23	24	-6°	-11°	0.8	CN**0903...	1.7
S32S-PCLNR/L12	Steel	40	32	22	250	50	30	29.5	-6°	-11°	0.8	CN**/GNGA1204...	4.8
S40T-PCLNR/L12	Steel	50	40	27	300	55	37	37.5	-6°	-10°	0.8	CN**/GNGA1204...	4.8
S50U-PCLNR/L12	Steel	63	50	35	350	65	47	47.5	-6°	-8°	0.8	CN**/GNGA1204...	4.8

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

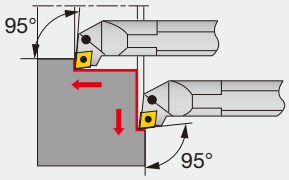
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
S**-PCLNR/L09	-	LCS22A	-	P-2F	-	-	LCL32N
S32S-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4
S40T-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4
S50U-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4

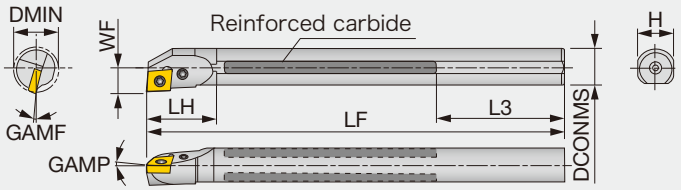
Reference pages: C-PCLNL-CHP, S-PCLNR/L: Insert → B054 -, B075, CBN → B168 -, PCD → B211

T-PCLNR

Lever-lock boring bar, for negative 80°/70° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque
T16Q-PCLNR09	Reinforced	20	-	16	11	180	27	59	15	-6°	-14°	0.8	CN**0903...	1.7
T20R-PCLNR09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-6°	-12°	0.8	CN**0903...	1.7
T25S-PCLNR09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	-11°	0.8	CN**0903...	1.7
T32U-PCLNR12C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-6°	-11°	0.8	CN**/GNGA1204...	4.8
T40V-PCLNR12C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-6°	-10°	0.8	CN**/GNGA1204...	4.8
T50W-PCLNR12C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-6°	-8°	0.8	CN**/GNGA1204...	4.8

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
T**-PCLNR09...	-	LCS22A	-	P-2F	-	-	LCL32N
T**-PCLNR12C	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX815	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: T-PCLNR: Insert → B054 -, B075, CBN → B168 -, PCD → B211

CN

Rhombic, 80° with hole

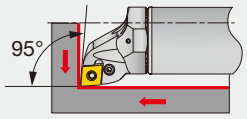
GN

Rhombic, 70° with hole

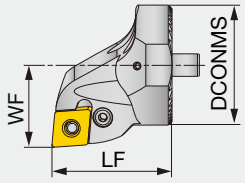
BOREMEISTER

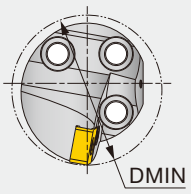
S-PCLNR/L-H

Lever-lock clamp exchangeable boring head, for negative 80°/70° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S32-PCLNR/L09-H	1.575	1.260	0.866	1.260	D1.25	CN**/GNMG 33...
S40-PCLNR/L09-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	CN**/GNMG 33...

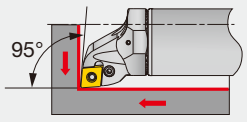
Note: Use right-hand toolholders (PCLNR**) with left-hand inserts (L); and left-hand toolholders (PCLNL**) with right-hand inserts (R).

SPARE PARTS

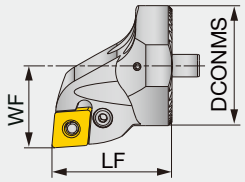
Designation	Lever	Clamping screw	Shim	Spring pin	Wrench
S32-PCLNR/L09-H	LCL33N	LCS33	-	-	P-2F
S40-PCLNR/L09-H	LCL33	LCS3	LSC317	LSP3	P-2.5

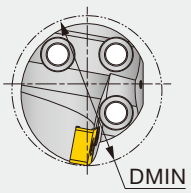
S-PCLNR/L-H-SP

Lever-lock clamp exchangeable boring head, for negative 80°/70° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-PCLNR/L12-H-SP	1.260	0.984	0.669	1.38	D/G1.00	CNMG 43...
S32-PCLNR/L12-H-SP	1.575	1.260	0.866	1.38	D/G1.25	CNMG 43...
S40-PCLNR/L12-H-SP	1.969	1.575	1.063	1.57	D/G1.50/D2.00/D2.50	CNMG 43...

SPARE PARTS

Designation	Lever	Clamping screw	Shim	Spring pin	Wrench
S**-PCLNR/L12-H-SP	WCD.ER3.101.000	WCD.ER4.101.107	WCD.ER2.101.003	WCD.ER1.101.000	P-2F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B004	

M

Application	Finishing	Medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	SS	SM
Cutting conditions	B006	

K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B008

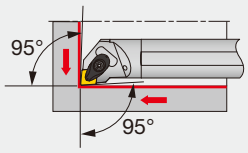
S

Application	Medium cutting
Grade	AH8015
Chipbreaker shape	TM
Cutting conditions	B012

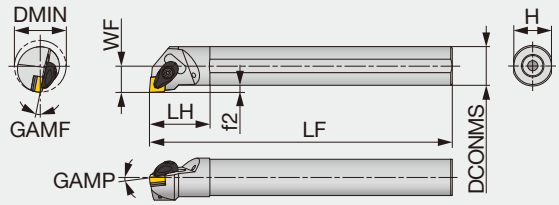
Reference pages: S-PCLNR/L-H, S-PCLNR/L-H-SP: Insert → B054 -, B075, CBN → B168 -, PCD → B211
Shank → D090 - D092

A-ACLNR/L

Double-clamp boring bar, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ACLNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	0.031	CN**/GNMG 33...	2.21
A20-ACLNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-10°	0.031	CN**/GNMG 33...	2.21
A16-ACLNR/L4-D20	Steel	1.250	1.000	0.640	12.000	1.750	0.906	0.177	-6°	-13°	0.031	CN**/GNGA 43...	2.21
A20-ACLNR/L4-D25	Steel	1.560	1.250	0.770	14.000	1.930	1.180	0.236	-6°	-10°	0.031	CN**/GNGA 43...	2.21
A24-ACLNR/L4-D32	Steel	2.000	1.500	0.890	14.000	2.160	1.450	0.275	-6°	-8°	0.031	CN**/GNGA 43...	2.21
A32-ACLNR/L4-D40	Steel	2.500	2.000	1.280	16.000	2.550	1.850	0.393	-6°	-7°	0.031	CN**/GNGA 43...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ACLNR/L0904-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**/GNMG0904...	3
A32S-ACLNR/L0904-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	CN**/GNMG0904...	3
A25R-ACLNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**/GNGA1204...	3
A32S-ACLNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	CN**/GNGA1204...	3
A40T-ACLNR/L12-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	CN**/GNGA1204...	3
A50U-ACLNR12-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	0.8	CN**/GNGA1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L33-D..., A**-ACLNR/L0904-D...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F
A**-ACLNR/L4-D..., A**-ACLNR/L12-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX815	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-ACLNR/L: Insert → B054 -, B075, CBN → B168 -, PCD → B211

DC

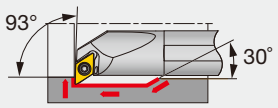


Rhombic, 55°
with hole
Positive 7°

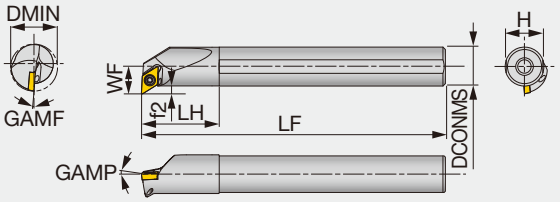
STREAMJETBAR

A/E-SDUCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDUCR2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	0.218	0°	-8°	0.016	DC** 21.5...	0.89
A08-SDUCR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	0.156	0°	-6°	0.016	DC** 21.5...	0.89
A10-SDUCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-4°	0.016	DC** 21.5...	0.89
A12-SDUCR/L3-D16	Steel	1.000	0.750	0.594	10.000	1.500	0.700	0.218	0°	-2°	0.032	DC** 32.5...	2.2
E06-SDUCR2-D10	Carbide	0.625	0.375	0.406	5.000	1.000	0.375	0.218	0°	-7°	0.016	DC** 21.5...	0.89
E08-SDUCR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	0.156	0°	-6°	0.016	DC** 21.5...	0.89
E10-SDUCR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-4°	0.016	DC** 21.5...	0.89
E12-SDUCR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.750	0.218	0°	-5°	0.032	DC** 32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDUCR/L07-D130	Steel	13	10	7	125	20	9	2	0°	-10°	0.4	DC**0702...	1.2
A12M-SDUCR/L07-D160	Steel	16	12	9.3	150	24	11	3.3	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDUCR/L07-D200	Steel	20	16	11.3	180	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
A20R-SDUCR/L11-D270	Steel	27	20	16.1	200	36	18	6.1	0°	-5°	0.8	DC**11T3...	3
A25S-SDUCR/L11-D320	Steel	32	25	18.6	250	45	23	6.1	0°	-4°	0.8	DC**11T3...	3
E10H-SDUCR07-D130	Carbide	13	10	7	100	25	9	1.9	5°	-3.5°	0.4	DC**0702...	1.2
E10M-SDUCR/L07-D130	Carbide	13	10	7	150	25	9	2	0°	-10°	0.4	DC**0702...	1.2
E12J-SDUCR07-D160	Carbide	16	12	9.3	110	27	11	3.2	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDUCR/L07-D160	Carbide	16	12	9.3	180	27	11	3.3	0°	-6°	0.4	DC**0702...	1.2
E16L-SDUCR07-D200	Carbide	20	16	11.3	130	32	15	3.2	0°	-5°	0.4	DC**0702...	1.2
E16R-SDUCR/L07-D200	Carbide	20	16	11.3	200	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
E20S-SDUCR11-D270	Carbide	27	20	16.1	250	36	18	6.1	0°	-5°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDUCR**) with left-hand inserts (L); and left-hand toolholders (SDUCL**) with right-hand inserts (R).

Reference pages: A/E-SDUCR/L: Insert → B121, CBN → B193 -, PCD → B214

INCH SPARE PARTS




Designation	Clamping screw	Wrench
A/E06-SDUCR2-D10, A/E10-SDUCR2-D14	CSTB-2.5	T-8F
A08-SDUCR/L2-D11 E08-SDUCR2-D11	CSTB-2.5B	T-8F
A12-SDUCR/L3-D16	CSTB-3.5	T-15F
E12-SDUCR/L3-D16	CSTB-4S	T15-F

METRIC SPARE PARTS




Designation	Clamping screw	Wrench
A1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
A16Q-SDUCR/L07-D200	CSTB-2.5	T-8F
A2**-SDUCR/L11-D**0	CSTB-4S	T-15F
E1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
E16*-SDUCR/L07-D200	CSTB-2.5	T-8F
E20S-SDUCR11-D270	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B016			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B018			

M

Application	Medium cutting
Grade	AH6225
Breaker Shape	PM
Cutting conditions	B018

N

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)		AL
Cutting conditions	B022		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

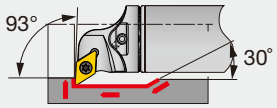
DC

Rhombic, 55°
with hole
Positive 7°

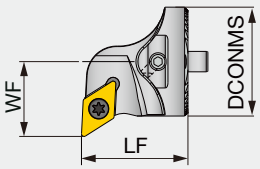
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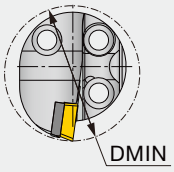
S-SDUCR/L-H

Screw-on clamp exchangeable boring head, for positive 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S16-SDUCR/L07-H	0.787	0.630	0.433	0.787	D/G.625	DC** 21.5...
S20-SDUCR/L11-H	0.984	0.787	0.512	0.787	D/G.750	DC** 32.5...
S25-SDUCR/L11-H	1.260	0.984	0.669	0.787	D1.00	DC** 32.5...
S32-SDUCR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DC** 32.5...
S40-SDUCR/L11T-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	DC** 32.5...

Note: Use right-hand toolholders (SDUCR**) with left-hand inserts (L); and left-hand toolholders (SDUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SDUCR/L07-H	SR14-548	T-7/5	-	-
S20-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S25-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S32-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P
S40-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B016			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B018			

M

Application	Medium cutting
Grade	AH6225
Breaker Shape	PM
Cutting conditions	B018

N

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)		AL
Cutting conditions	B022		

H

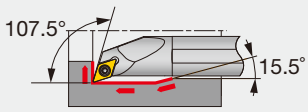
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: S-SDUCR/L-H: Insert → B121 -, CBN → B193 -, PCD → B214
Shank → D090 - D092

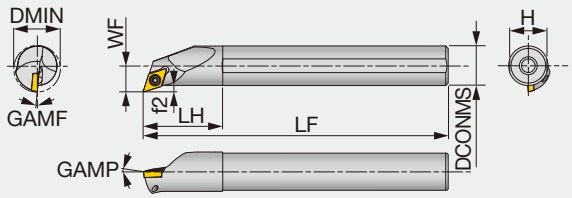
STREAMJETBAR

A/E-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDQCR2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	-	0°	-7°	0.016	DC** 21.5...	0.89
A08-SDQCR2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	-	0°	-6°	0.016	DC** 21.5...	0.89
A10-SDQCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	-	0°	-4°	0.016	DC** 21.5...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDQCR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	0°	-8°	0.4	DC**0702...	1.2
A12M-SDQCR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDQCR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
A20R-SDQCR/L11-D250	Steel	25	20	13.7	200	36	18	3.7	0°	-7°	0.8	DC**11T3...	3
A25S-SDQCR/L11-D300	Steel	30	25	16.2	250	45	23	3.7	0°	-4°	0.8	DC**11T3...	3
E10H-SDQCR07-D130	Carbide	13	10	7.6	100	25	9	2.5	0°	-8°	0.4	DC**0702...	1.2
E10M-SDQCR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	0°	-8°	0.4	DC**0702...	1.2
E12J-SDQCR07-D160	Carbide	16	12	8.6	110	27	11	2.5	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDQCR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	0°	-6°	0.4	DC**0702...	1.2
E16L-SDQCR07-D200	Carbide	20	16	10.6	130	32	15	2.5	0°	-5°	0.4	DC**0702...	1.2
E16R-SDQCR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
E20S-SDQCR/L11-D250	Carbide	25	20	13.7	250	36	18	3.7	0°	-7°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
A**-SDQCR2-D...	CSTB-2.5B	T-8F
A1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
A2**-SDQCR/L11-D**0	CSTB-4S	T-15F
E1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
E20S-SDQCR/L11-D250	CSTB-4S	T-15F

Reference pages: A/E-SDQCR/L: Insert → B121, CBN → B193 -, PCD → B214

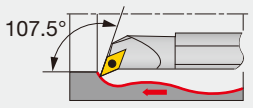
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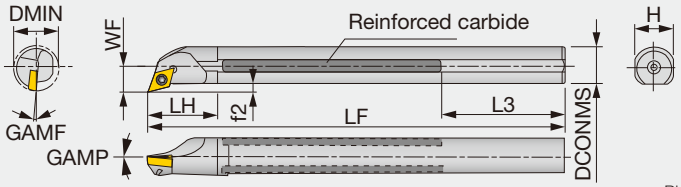
Rhombic, 55°
with hole
Positive 7°

T-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T16Q-SDQCR/L07	Reinforced	20	-	16	11	180	27	59	15	3	0°	-6°	0.4	DC**0702...	1.2
T20R-SDQCR/L11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	3	0°	-6°	0.8	DC**11T3...	3
T25S-SDQCR/L11C	Reinforced	32	Rc1/4	25	17	250	40	64	23	4.5	0°	-4°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T16Q-SDQCR/L07	CSTB-2.5	T-8F
T20R-SDQCR/L11C	CSTB-4M	T-15F
T25S-SDQCR/L11C	CSTB-4	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B016			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B018			

M

Application	Medium cutting
Grade	AH6225
Breaker Shape	PM
Cutting conditions	B018

N

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)		AL
Cutting conditions	B022		

H

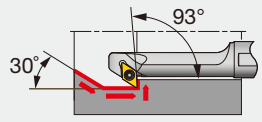
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: T-SDQCR/L: Insert → B121, CBN → B193 -, PCD → B214

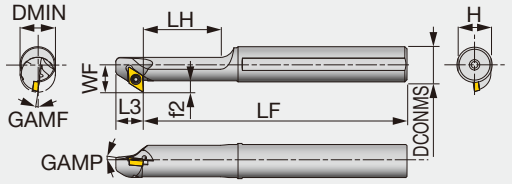
STREAMJETBAR

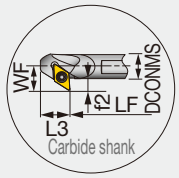
A/E-SDZCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Z**





Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SDZCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.500	0.600	0.219	0°	-4°	0.016	DC** 21.5...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZCR/L07-D140	Steel	14	12	10.5	150	30	12.5	11	4.5	0°	-9°	0.4	DC**0702...	1.2
A16Q-SDZCR/L07-D160	Steel	16	16	12.5	180	35	12.5	15	4.5	0°	-8°	0.4	DC**0702...	1.2
A20R-SDZCR/L11-D200	Steel	20	20	15.5	200	40	15.0	18	5.5	0°	-8°	0.8	DC**11T3...	3
A25S-SDZCR/L11-D250	Steel	25	25	18	250	50	15	23	5.5	0°	-6°	0.8	DC**11T3...	3
E12Q-SDZCR/L07-D180	Carbide	18	12	10.5	180	-	12.5	11	4.5	0°	-8°	0.4	DC**0702...	1.2
E16R-SDZCR/L07-D220	Carbide	22	16	12.5	200	-	12.5	15	4.5	0°	-6°	0.4	DC**0702...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDZCR**) with right-hand inserts (R); and left-hand toolholders (SDZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A10-SDZCR2-D14	CSTB-2.5	T-8F
A1**-SDZCR/L07-D1*0	CSTB-2.5	T-8F
A2**-SDZCR/L11-D2*0	CSTB-4S	T-15F
E1**-SDZCR/L07-D**0	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B016			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B018			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PM
Cutting conditions	B016

M

Application	Medium cutting
Grade	AH6225
Breaker Shape	PM
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA (with rake)		AL
Cutting conditions	B022		

S

Application	Precision finishing	Finishing	Finishing to medium cutting
Grade	BX470	AH8005	AH8015
Breaker Shape	CBN	PS	PS
Cutting conditions	B024		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: A/E-SDZCR/L: Insert → B121, CBN → B193 -, PCD → B214

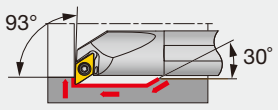
DP

Rhombic, 55°
with hole
Positive 11°

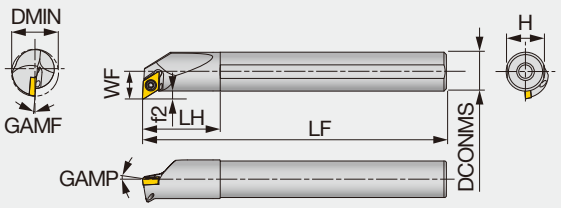
STREAMJETBAR

A/E-SDUPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12M-SDUPR07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPL07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPR07-D180-P	Special alloy steel	18	12	10.3	150	24	11	4.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPL07-D180-P	Special alloy steel	18	12	10.3	150	24	11	4.3	5	0	0.4	DPMT0702...	1.2
A16Q-SDUPR07-D220-P	Special alloy steel	22	16	12.3	180	32	15	4.3	5	0	0.4	DPMT0702...	1.2
A16Q-SDUPL07-D220-P	Special alloy steel	22	16	12.3	180	32	15	4.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D180	Carbide	18	12	10.3	180	27	11	4.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D180	Carbide	18	12	10.3	180	27	11	4.3	5	0	0.4	DPMT0702...	1.2
E16R-SDUPR07-D220	Carbide	22	16	12.3	200	32	15	4.3	5	0	0.4	DPMT0702...	1.2
E16R-SDUPL07-D220	Carbide	22	16	12.3	200	32	15	4.3	5	0	0.4	DPMT0702...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SDUPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDUPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PS	PS
Cutting conditions	B018	

K

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PS	PS
Cutting conditions	B020	

S

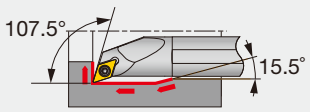
Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

Reference pages: A/E-SDUPR/L: Insert → B126

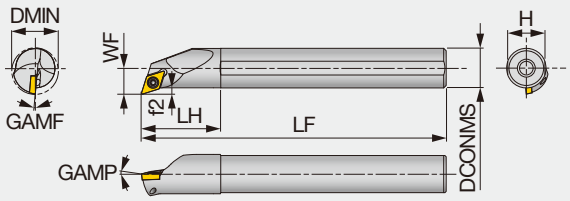
STREAMJETBAR

A/E-SDQPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12M-SDQPR07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.40	DPMT0702...	1.2
A12M-SDQPL07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.40	DPMT0702...	1.2
A12M-SDQPR07-D180-P	Special alloy steel	18	12	9.6	150	24	11	3.6	5	0	0.40	DPMT0702...	1.2
A12M-SDQPL07-D180-P	Special alloy steel	18	12	9.6	150	24	11	3.6	5	0	0.40	DPMT0702...	1.2
A16Q-SDQPR07-D220-P	Special alloy steel	22	16	11.6	180	32	15	3.6	5	0	0.40	DPMT0702...	1.2
A16Q-SDQPL07-D220-P	Special alloy steel	22	16	11.6	180	32	15	3.6	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D180	Carbide	18	12	9.6	180	27	11	3.6	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D180	Carbide	18	12	9.6	180	27	11	3.6	5	0	0.40	DPMT0702...	1.2
E16R-SDQPR07-D220	Carbide	22	16	11.6	200	32	15	3.6	5	0	0.40	DPMT0702...	1.2
E16R-SDQPL07-D220	Carbide	22	16	11.6	200	32	15	3.6	5	0	0.40	DPMT0702...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SDQPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDQPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PS	PS
Cutting conditions	B018	

K

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PS	PS
Cutting conditions	B020	

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

Reference pages: A/E-SDQPR/L: Insert → B126

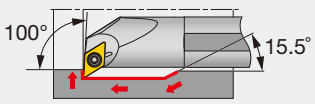
DX

Rhombic, 55° with hole

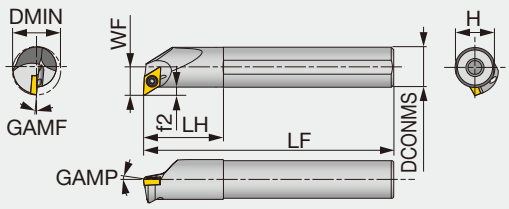
MINIFORCE TURN

A/E-SDXXR/L

Screw-on boring bar, for DXG/MU inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDXXR/L2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	0.218	-14°	-16°	0.016	DXG/MU 22**L/R...	0.66
A08-SDXXR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	0.156	-14°	-14°	0.016	DXG/MU 22**L/R...	0.66
A10-SDXXR/L2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.218	-13°	-13°	0.016	DXG/MU 22**L/R...	0.66
A12-SDXXR/L2-D16	Steel	1.000	0.750	0.593	7.000	1.438	0.725	0.218	-13°	-12°	0.016	DXG/MU 22**L/R...	0.66
E06-SDXXR/L2-D10	Carbide	0.625	0.375	0.406	5.000	1.000	0.350	-	-14°	-16°	0.016	DXG/MU 22**L/R...	0.66
E08-SDXXR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.063	0.475	-	-14°	-14°	0.016	DXG/MU 22**L/R...	0.66
E10-SDXXR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	-	-13°	-13°	0.016	DXG/MU 22**L/R...	0.66
E12-SDXXR/L2-D16	Carbide	1.000	0.750	0.593	7.000	1.438	0.725	-	-13°	-12°	0.016	DXG/MU 22**L/R...	0.66

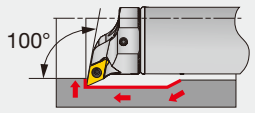
Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDXXR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	-14°	-16°	0.4	DXG/MU0703**L/R...	0.9
A12M-SDXXR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	-14°	-14°	0.4	DXG/MU0703**L/R...	0.9
A16Q-SDXXR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	-13°	-13°	0.4	DXG/MU0703**L/R...	0.9
A20R-SDXXR/L07-D240	Steel	24	20	12.6	200	36	18	2.6	-13°	-12°	0.4	DXG/MU0703**L/R...	0.9
E10M-SDXXR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	-14°	-16°	0.4	DXG/MU0703**L/R...	0.9
E12Q-SDXXR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	-14°	-14°	0.4	DXG/MU0703**L/R...	0.9
E16R-SDXXR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	-13°	-13°	0.4	DXG/MU0703**L/R...	0.9
E20S-SDXXR/L07-D240	Carbide	24	20	12.6	250	36	18	2.6	-13°	-12°	0.4	DXG/MU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

S-SDXXR/L-H

Screw-on clamp exchangeable boring head, for DXG/MU inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SDXXR/L07-H	1.260	0.984	0.669	0.787	D1.00	DXG/MU 22**L/R...
S32-SDXXR/L07-H	1.575	1.260	0.866	1.260	D1.25	DXG/MU 22**L/R...
S40-SDXXR/L07-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	DXG/MU 22**L/R...

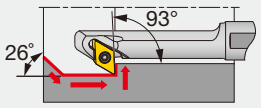
Note: Use right-hand toolholders (SDXXR**) with left-hand inserts (L); and left-hand toolholders (SDXXL**) with right-hand inserts (R).

SPARE PARTS

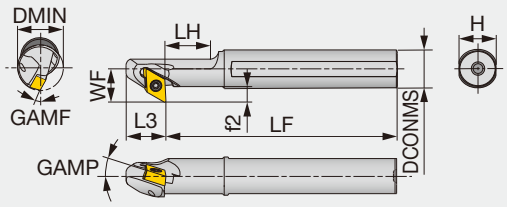
Designation	Clamping screw	Wrench
A/E**-SDXXR/L...	SR34-514	T-7F
S**-SDXXR/L07-H	SR34-514	T-7F

Reference pages: A/E-SDXXR/L: Insert → B126 -
S-SDXXR/L-H: Insert → B126 -, Shank → D090 - D092
Standard cutting conditions → D096

Screw-on boring bar, for DXG/MU inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SDZXR/L2-D10	Steel	0.625	0.500	0.438	5.000	1.125	0.500	0.475	0.188	-10°	-14°	0.016	DXG/MU 22**R/L...	0.66
A10-SDZXR/L2-D11	Steel	0.688	0.625	0.500	7.000	1.250	0.500	0.600	0.188	-10°	-12.5°	0.016	DXG/MU 22**R/L...	0.66
A12-SDZXR/L2-D14	Steel	0.875	0.750	0.563	7.000	1.375	0.500	0.725	0.188	-10°	-10.5°	0.016	DXG/MU 22**R/L...	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZXR/L07-D140	Steel	14	12	10.5	150	30	13	11	4.5	-10°	-14°	0.4	DXG/MU0703**R/L...	0.9
A16Q-SDZXR/L07-D160	Steel	16	16	12.5	180	35	13	15	4.5	-10°	-12.5°	0.4	DXG/MU0703**R/L...	0.9
A20R-SDZXR/L07-D200	Steel	20	20	14.5	200	40	13	18	4.5	-10°	-10.5°	0.4	DXG/MU0703**R/L...	0.9
E12Q-SDZXR/L07-D180	Carbide	18	12	10.5	180	-	13	11	4.5	-11°	-11°	0.4	DXG/MU0703**R/L...	0.9
E16R-SDZXR/L07-D220	Carbide	22	16	12.5	200	-	13	15	4.5	-11°	-9°	0.4	DXG/MU0703**R/L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SDZXR/L...	SR34-514	T-7F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	TS
Cutting conditions	D096

K

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

K

Application	Medium cutting
Grade	T9215
Breaker Shape	TS
Cutting conditions	D096

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH8015	AH8015
Chipbreaker shape	JS	JTS	SS	TS
Cutting conditions	D096			

M

Application	Medium cutting
Grade	AH8015
Chipbreaker shape	TS
Cutting conditions	D096

N

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	KS05F	KS05F	KS05F
Breaker Shape	SS	TS	TS
Cutting conditions	D096		

S

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH8015	AH8015
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

S

Application	Medium cutting
Grade	AH8015
Breaker Shape	TS
Cutting conditions	D096

Reference pages: A/E-SDZXR/L: Insert → B126 -
Standard cutting conditions → D096

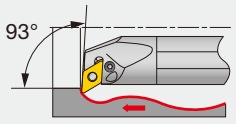
DN FN

Rhombic, 55° with hole | **Rhombic, 45° with hole**

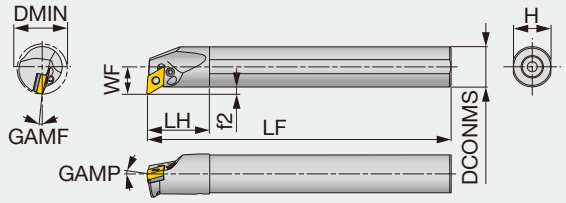
STREAMJETBAR

A-PDUNR/L

Lever-lock boring bar, for negative 55°/45° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A20Q-PDUNR/L1104-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**/FNMG1104...	1.7
A20Q-PDUNR/L11-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**/FNMG1104...	1.7
A25R-PDUNR/L11-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	DN**/FNMG1104...	2.7
A32S-PDUNR/L15-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**/FNGA1504...	4.8
A40T-PDUNR/L15-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	DN**/FNGA1504...	4.8
A50U-PDUNR/L15-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	DN**/FNGA1504...	4.8
A32S-PDUNR/L1506-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**/FNGA1506...	4.8
A40T-PDUNR/L1506-D500	Steel	50	40	27	300	60	37	7	-6°	-11°	0.8	DN**/FNGA1506...	4.8
A50U-PDUNR/L1506-D630	Steel	63	50	35	350	65	47	10	-6°	-10°	0.8	DN**/FNGA1506...	4.8

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (PDUNR**) with left-hand inserts (L); and left-hand toolholders (PDUNL**) with right-hand inserts (R).

SPARE PARTS

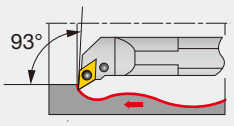
Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L1104-D250	-	LCS22A	-	P-2F	-	-	LCL33NL	EA-20	SSHM2.5-3
A20Q-PDUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL33NL	EA-20	SSHM2.5-3
A25R-PDUNR/L11-D320	ELSD317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33L	EA-25	SSHM3-4
A32S-PDUNR/L15-D400	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A40T-PDUNR/L15-D500	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDUNR/L15-D630	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A32S-PDUNR/L1506-D400	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	EA-20	SSHM5-6
A40T-PDUNR/L1506-D500	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6
A50U-PDUNR/L1506-D630	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6

*Optional

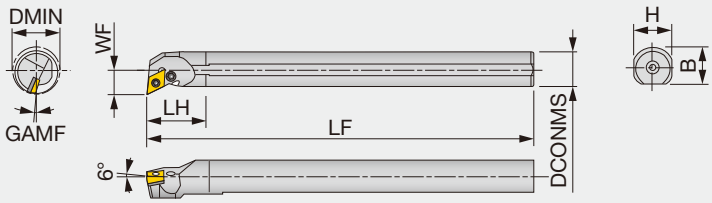
Reference pages: A-PDUNR/L: Insert → B066 -, B075, CBN → B172 -, PCD → B211

S-PDUNR/L

Lever-lock boring bar, for negative 55°/45° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S20Q-PDUNR/L11	Steel	25	20	13	180	35	18	19	-14°	0.8	DN**/FNMG1104...
S25R-PDUNR/L11	Steel	32	25	17	200	40	23	24	-12°	0.8	DN**/FNMG1104...
S32S-PDUNR/L15	Steel	40	32	22	250	50	30	29.5	-13°	0.8	DN**/FNGA1504...
S40T-PDUNR/L15	Steel	50	40	27	300	55	37	37.5	-10°	0.8	DN**/FNGA1504...
S50U-PDUNR/L15	Steel	63	50	35	350	65	47	47.5	-8°	0.8	DN**/FNGA1504...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
S20Q-PDUNR/L11	-	LCS22A	-	P-2F	-	-	LCL33NL
S25R-PDUNR11	ELSD317BR	-	LCS3	-	P-2.5	LSP3	LCL33L
S25R-PDUNL11	ELSD317BL	-	LCS3	-	P-2.5	LSP3	LCL33L
S32S-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S32S-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: S-PDUNR/L: Insert → B066 -, B075, CBN → B172 -, PCD → B211

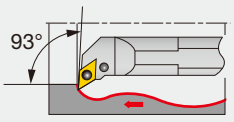
DN FN

Rhombic, 55° with hole

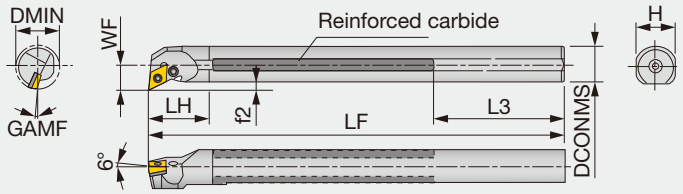
Rhombic, 45° with hole

T-PDUNR

Lever-lock boring bar, for negative 55°/45° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMF	RE**	Insert
T32U-PDUNR15C	Reinforced	40	Rc1/2	32	22	350	50	103	30	6	-13°	0.8	DN**/FNGA1504...
T40V-PDUNR15C	Reinforced	50	Rc1/2	40	27	400	55	88	37	7	-10°	0.8	DN**/FNGA1504...
T50W-PDUNR15C	Reinforced	63	Rc1/2	50	35	450	65	63	47	10	-8°	0.8	DN**/FNGA1504...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

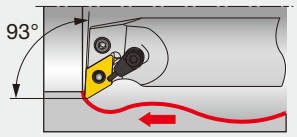
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
T**-PDUNR15C	LSD42BR	LCS4	P-3	LSP4	LCL4

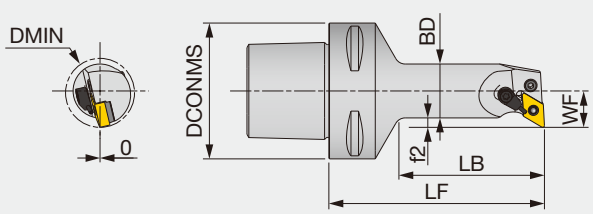
TUNGCAP

C-PDUNL-CHP

Lever-lock boring bar with TungCap connection, with 93° approach angle, for negative 55°/45° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**/FNMG1104...

Applicable for 14 MPa coolant

**RE : Standard corner radius

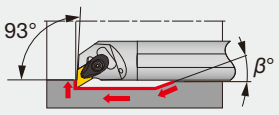
SPARE PARTS

Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

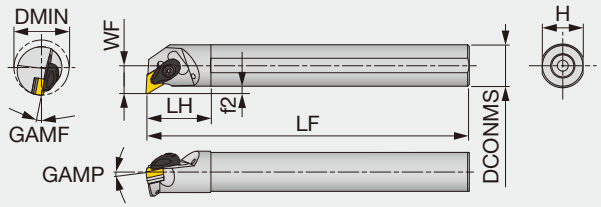
Reference pages: T-PDUNR, C-PDUNL-CHP: Insert → B066 -, B075, CBN → B172 -, PCD → B211

A-ADUNR/L

Double-clamp boring bar, for negative 55°/45° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	β°	RE**	Insert	Torque
A16-ADUNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	20	0.031	DN**/FNMG 33...	2.21
A20-ADUNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-11°	20	0.031	DN**/FNMG 33...	2.21
A16-ADUNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	30	0.031	DN**/FNGA 43...	2.21
A20-ADUNR/L4-D25	Steel	1.500	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-11°	20	0.031	DN**/FNGA 43...	2.21
A24-ADUNR/L4-D32	Steel	2.000	1.500	1.063	14.000	2.160	1.450	0.275	-6°	-8°	15	0.031	DN**/FNGA 43...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	β°	RE**	Insert	Torque*
A25R-ADUNR/L1104-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	20	0.8	DN**/FNMG1104...	3
A32S-ADUNR/L1104-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	20	0.8	DN**/FNMG1104...	3
A25R-ADUNR/L15-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	30	0.8	DN**/FNGA1504...	3
A32S-ADUNR/L15-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	20	0.8	DN**/FNGA1504...	3
A40T-ADUNR15-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	15	0.8	DN**/FNGA1504...	3
A50U-ADUNR15-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	15	0.8	DN**/FNGA1504...	3
A25R-ADUNR/L1506-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	15	0.8	DN**/FNGA1506...	3
A32S-ADUNR/L1506-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	20	0.8	DN**/FNGA1506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ADUNR/L33-D..., A**-ADUNR/L1104-D...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F
A**-ADUNR/L4-D..., A**-ADUNR/L15-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
A**-ADUNR/L1506-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-ADUNR/L: Insert → B066 -, B075, CBN → B172 -, PCD → B211

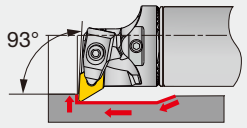
DN FN

Rhombic, 55° with hole | **Rhombic, 45° with hole**

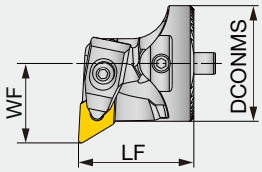
BOREMEISTER

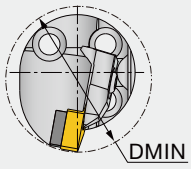
S-DDUNR/L-H

Double-clamp exchangeable boring head, for negative 55°/45° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S32-DDUNR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DN**/FNMG 33...
S40-DDUNR/L15T-H(1)	1.969	1.575	1.063	1.496	D1.50, D2.00, D2.50	DN**/FNGA 44(43)...

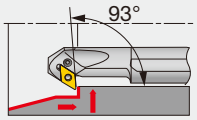
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (DDUNL** type), and the left hand insert (L) is used for the right hand toolholders (DDUNR** type).
(1) DN**/FNGA 43... inserts require a separate shim (# RDT443).

SPARE PARTS

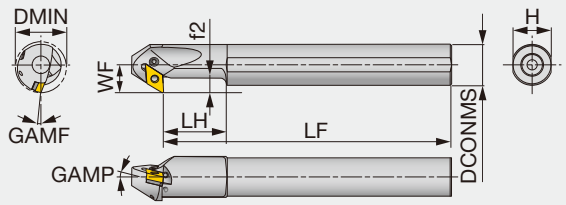
Designation	Shim 1	Shim 2 (Optional)	Shim screw	Clamp	Clamping screw	Spring	Wrench
S32-DDUNR/L11T-H	RDT3-2	-	SR40085I	LCGR-3	SRRC3	KSP3	HW2.5
S40-DDUNR/L15T-H	RDT433	(RDT443)	SR14-506	DLM4	DLS4	DSP4	HW3.0

A-PDZNR/L

Lever-lock boring bar, for negative 55°/45° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A32S-PDZNR/L15-D400	Steel	40	32	22	250	50	30	11.5	-6°	-13°	0.8	DN**/FNGA1504...	4.8
A40T-PDZNR/L15-D500	Steel	50	40	27	300	60	37	14.5	-6°	-10°	0.8	DN**/FNGA1504...	4.8
A50U-PDZNR/L15-D630	Steel	63	50	35	350	65	47	14.5	-6°	-8°	0.8	DN**/FNGA1504...	4.8

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (PDZNR**) with right-hand inserts (R); and left-hand toolholders (PDZNL**) with left-hand inserts (L).

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PDZNR15-D400	LSZ42BR	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A32S-PDZNL15-D400	LSZ42BL	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PDZNR15-D500	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A40T-PDZNL15-D500	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A50U-PDZNR15-D630	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDZNL15-D630	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

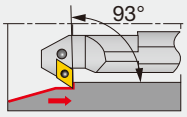
*Optional

Reference pages: S-DDUNR/L-H: Insert → B066 -, B075, CBN → B172 -, PCD → B211
Shank → D090 - D092
A-PDZNR/L: Insert → B066 -, B075, CBN → B172 -, PCD → B211

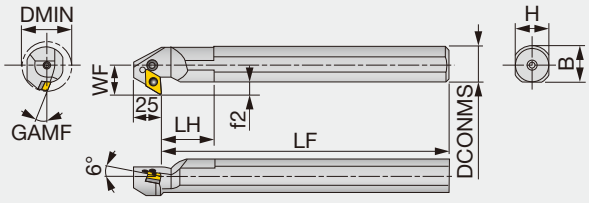
STREAMJETBAR

S-PDZNR/L

Lever-lock boring bar, for negative 55°/45° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	B	GAMF	RE**	Insert
S32S-PDZNR/L15	Steel	40	32	22	250	30	30	6	29.5	-13°	0.8	DN**/FNGA1504...
S40T-PDZNR15	Steel	50	40	27	300	35	37	7	37.5	-10°	0.8	DN**/FNGA1504...
S50U-PDZNR15	Steel	60	50	35	350	40	47	10	47.5	-8°	0.8	DN**/FNGA1504...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S32S-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4
S32S-PDZNL15	LSZ42BL	LCS4	P-3	LSP4	LCL4
S*0*-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: S-PDZNR/L: Insert → B066 -, B075, CBN → B172 -, PCD → B211

EP

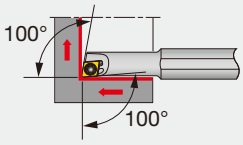


Rhombic, 75°
with hole
Positive 11°

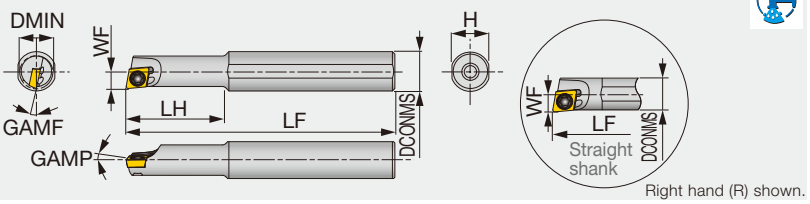
STREAMJETBAR

A/E-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A05-SEXPR/L04-D04	Steel	0.250	0.313	0.125	5.000	0.812	0.287	0°	-12°	0.016	EPGT 52...	0.44
E05-SEXPR04-D04	Carbide	0.250	0.313	0.125	5.000	1.562	0.287	0°	-12°	0.016	EPGT 52...	0.44

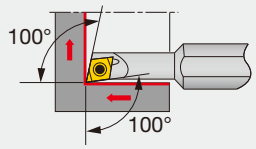
Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A04F-SEXPR/L03-D045	Steel	4.5	4	2.3	80	8	3.8	0°	-15°	0.2	EP**03X1...	0.6
A04F-SEXPR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-13°	0.2	EP**03X1...	0.6
A05F-SEXPR/L04-D055	Steel	5.5	5	2.75	80	9	4.8	0°	-12°	0.4	EP**0401...	0.6
A06G-SEXPR/L04-D070	Steel	7	6	3.6	90	11	5.75	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D055	Steel	5.5	8	2.75	100	16	7.5	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	EP**0401...	0.6
E04G-SEXPR/L03-D045	Carbide	4.5	4	2.3	90	9	3.8	0°	-15°	0.2	EP**03X1...	0.6
E04G-SEXPR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-13°	0.2	EP**03X1...	0.6
E05G-SEXPR/L04-D055	Carbide	5.5	5	2.75	90	10	4.8	0°	-12°	0.4	EP**0401...	0.6
E06H-SEXPR/L04-D070	Carbide	7	6	3.6	100	12	5.75	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D055	Carbide	5.5	8	2.75	125	28	7.5	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	EP**0401...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

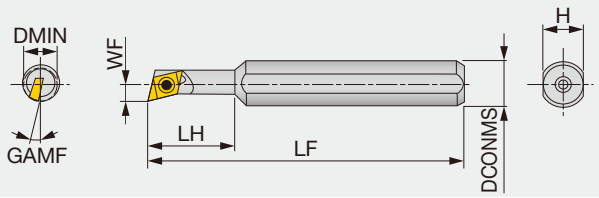
J-SERIES

JS-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMF	RE**	Insert	Torque
JS08H-SEXPR045	Steel	5.5	8	2.7	100	16	7	12°	0.4	EP**0401...	0.6
JS08H-SEXPR047	Steel	7	8	3.6	100	20	7	12°	0.4	EP**0401...	0.6

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

SPARE PARTS



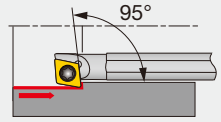

Designation	Clamping screw	Wrench
A**-SEXPR/L03-D...	CSTA-1.6	T-6F
A**-SEXPR/L04-D...	CSTB-2	T-6F
E**-SEXPR/L03-D...	CSTA-1.6	T-6F
E**-SEXPR/L04-D...	CSTB-2	T-6F
JS08H-SEXPR04...	CSTB-2	T-6F

Reference pages: A/E-SEXPR/L, JS-SEXPR/L: Insert → B128 -, CBN → B195, PCD → B214

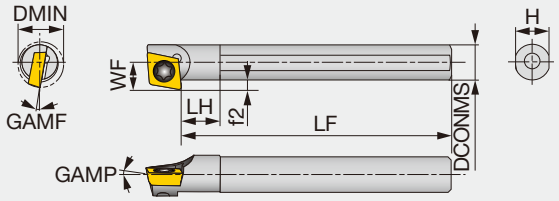
STREAMJETBAR

A/E-SEZPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A04F-SEZPR/L03-D055	Steel	5.5	4	3.2	80	4	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
A05F-SEZPR/L03-D065	Steel	6.5	5	3.7	80	5	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6
E04G-SEZPR/L03-D055	Carbide	5.5	4	3.2	90	5	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
E05G-SEZPR/L03-D065	Carbide	6.5	5	3.7	90	6	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SEZPR**) with right-hand inserts (R); and left-hand toolholders (SEZPL**) with left-hand inserts (L).

SPARE PARTS

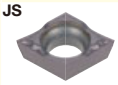
Designation	Clamping screw	Wrench
A**-SEZPR/L03-D...	CSTA-1.6	T-6F
E**-SEZPR/L03-D...	CSTA-1.6	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B016

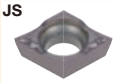
M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B018

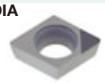
K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

S

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B024

N

Application	Precision finishing	Finishing
Grade	DX140	SH725
Breaker Shape	DIA 	JS 
Cutting conditions	B022	

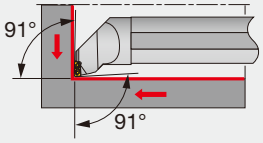
H

Application	Precision finishing
Grade	BX310
Breaker Shape	CBN 
Cutting conditions	B026

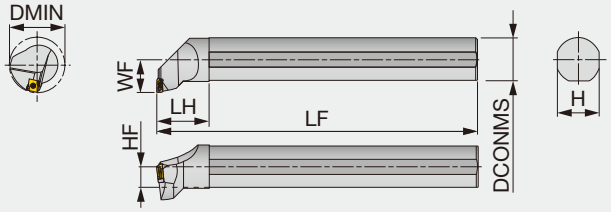
Reference pages: A/E-SEZPR/L: Insert → B128 -, CBN → B195, PCD → B214

S-TLANR/L

Screw-on boring bar for roughing, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	HF	Insert
S16-TLANR/L12-D34	Steel	2.090	1.000	0.670	12.000	1.500	0.920	0.460	LNMX1204**L/R...
S20-TLANR/L12-D34	Steel	2.090	1.250	0.870	14.000	1.750	1.140	0.570	LNMX1204**L/R...
S24-TLANR/L12-D34	Steel	2.090	1.500	1.060	16.000	2.000	1.340	0.670	LNMX1204**L/R...
S32-TLANR/L16-D54	Steel	3.350	2.000	1.460	16.000	2.360	1.810	0.905	LNMX1606**L/R...

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	HF	Insert
S25T-TLANR/L12-D530	Steel	53	25	17	300	40	23	11.5	LNMX1204**L/R...
S32U-TLANR/L12-D530	Steel	53	32	22	350	45	30	15	LNMX1204**L/R...
S40V-TLANR/L12-D530	Steel	53	40	27	400	53	37	18.5	LNMX1204**L/R...
S50U-TLANR/L16-D850	Steel	85	50	37	350	63	47	23.5	LNMX1606**L/R...

Note: Use right-hand toolholders (TLANR**) with left-hand inserts (L); and left-hand toolholders (TLANL**) with right-hand inserts (R).

SPARE PARTS

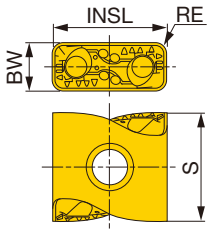
Designation	Clamping screw	Shim screw	Shim	Spring pin	Wrench 1	Wrench 2
S**-TLANR/L12-D34, S**-TLANR/L12-D530	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L/RI	-	KEYV-T10	T-6F-S
S32-TLANR16-D54, S50U-TLANR16-D850	CSTB-4L115-S	-	TSL16LI	PSP-16	KEYV-T15	-
S32-TLANL16-D54, S50U-TLANL16-D850	CSTB-4L115-S	-	TSL16RI	PSP-16	KEYV-T15	-

Reference pages: Standard cutting conditions → D097

INSERT

LNMX12/16/24





P	Steel	★	★	★			
M	Stainless	☆		☆			
K	Cast iron	☆	☆	☆			
N	Non-ferrous						
S	Superalloys						
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated										BW (in)	INSL (in)	S (in)
			T9115	T9125	AH725										
LNMX120408R-TDR	R	0.031	●	●									0.189	0.472	0.457
LNMX120408L-TDR	L	0.031	●	●									0.189	0.472	0.457
LNMX120412R-TDR	R	0.047	●	●									0.189	0.472	0.457
LNMX120412L-TDR	L	0.047	●	●									0.189	0.472	0.457
LNMX160608R-TDR	R	0.031	●	●									0.252	0.638	0.531
LNMX160608L-TDR	L	0.031	●	●									0.252	0.638	0.531
LNMX160612R-TDR	R	0.047	●	●									0.252	0.638	0.531
LNMX160612L-TDR	L	0.047	●	●									0.252	0.638	0.531
LNMX160616R-TDR	R	0.063	●	●									0.252	0.638	0.531
LNMX160616L-TDR	L	0.063	●	●									0.252	0.638	0.531
LNMX241016R-TDR	R	0.063	●	●									0.370	0.945	0.807
LNMX241016L-TDR	L	0.063	●	●									0.370	0.945	0.807
LNMX241024R-TDR	R	0.094	●	●									0.370	0.945	0.807
LNMX241024L-TDR	L	0.094	●	●									0.370	0.945	0.807
LNMX160608R-MDR	R	0.031	●		●								0.252	0.638	0.531
LNMX160608L-MDR	L	0.031	●		●								0.252	0.638	0.531
LNMX160612R-MDR	R	0.047	●		●								0.252	0.638	0.531
LNMX160612L-MDR	L	0.047	●		●								0.252	0.638	0.531
LNMX160608R-TWR	R	0.031	●										0.252	0.638	0.531
LNMX160608L-TWR	L	0.031	●	●									0.252	0.638	0.531
LNMX160612R-TWR	R	0.047	●	●									0.252	0.638	0.531
LNMX160612L-TWR	L	0.047	●	●									0.252	0.638	0.531

● : Line up

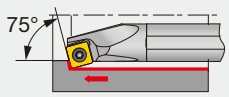
SP

Square
with hole
Positive 11°

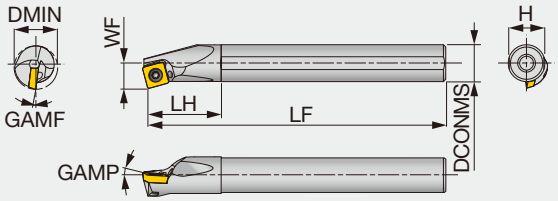
STREAMJETBAR

A-SSKPR

Screw-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A16Q-SSKPR09-D200	Steel	20	16	11	180	32	15	5°	-6°	0.8	SP**0903...	3
A20R-SSKPR09-D240	Steel	24	20	13	200	36	18	5°	-2°	0.8	SP**0903...	3
A25S-SSKPR12-D310	Steel	31	25	17	250	45	23	5°	-2°	0.8	SP**1204...	6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SSKPR**) with left-hand inserts (L); and left-hand toolholders (SSKPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SSKPR09-D2*0	CSTB-4L060	T-15F
A25S-SSKPR12-D310	CSTB-5S	T-20F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B016

M

Application	Finishing to medium cutting
Grade	AH6225
Breaker Shape	PS 
Cutting conditions	B018

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B020

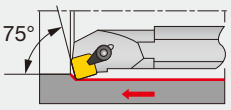
Reference pages: A-SSKPR: Insert → B135 -, CBN → B195 -

SP

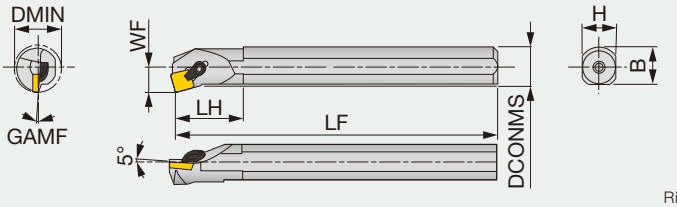
Square
without hole
Positive 11°

S/C-CSKPR/L

Clamp-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16Q-CSKPR09	Steel	20	16	11	180	30	15	15	-4°	0.8	SP**0903...
S20R-CSKPR/L09	Steel	25	20	13	200	40	18	18.5	-2°	0.8	SP**0903...
S25S-CSKPR12	Steel	32	25	17	250	45	23	22.5	0°	0.8	SP**1203...

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set	Wrench
S16Q-CSKPR09	CSG-5S	P-2.5
S20R-CSKPR/L09	CSG-5	P-2.5
S25S-CSKPR12	CSG-6	P-3

Reference pages: S/C-CSKPR/L: Insert → B135 -, CBN → B195 -, PCD → B215

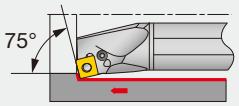
SN

Square with hole

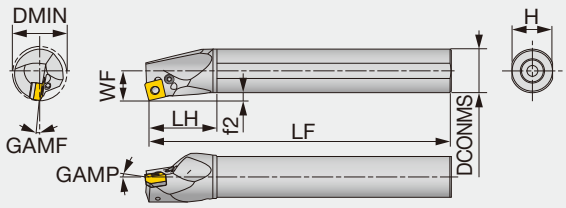
STREAMJETBAR

A-PSKNR/L

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A32S-PSKNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	SN**1204...	4.8
A40T-PSKNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	SN**1204...	4.8
A50U-PSKNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	SN**1204...	4.8

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (PSKNR**) with left-hand inserts (L); and left-hand toolholders (PSKNL**) with right-hand inserts (R).

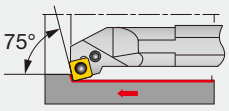
SPARE PARTS

Designation	Shim	Screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PSKNR/L12-D400	LSS42BR/L	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PSKNR/L12-D500	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PSKNR/L12-D630	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

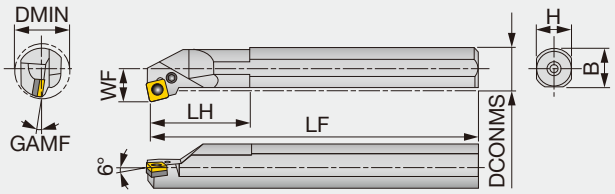
*Optional

S-PSKNR

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S32S-PSKNR12	Steel	40	32	22	250	50	30	29.5	-10°	0.8	SN**1204...
S40T-PSKNR12	Steel	50	40	27	300	55	37	37.5	-10°	0.8	SN**1204...
S50U-PSKNR12	Steel	63	50	35	350	65	47	47.5	-8°	0.8	SN**1204...

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

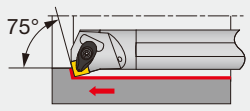
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S**-PSKNR12	LSS42BR	LCS4	P-3	LSP4	LCL4

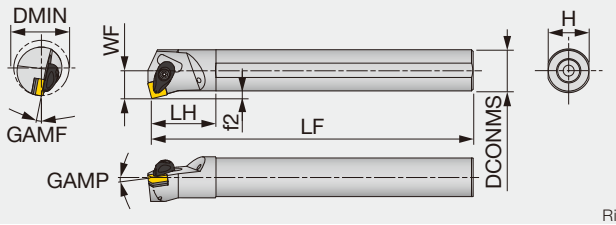
Reference pages: A-PSKNR/L, S-PSKNR: Insert → B077 -, CBN → B180, PCD → B211

A-ASKNR/L

Double-clamp boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ASKNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	SN** 43...	2.21
A20-ASKNR/L4-D25	Steel	1.500	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	SN** 43...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ASKNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	SN**1204...	3
A32S-ASKNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	SN**1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ASKNR/L...	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Breaker Shape	T-DIA	P
Cutting conditions	B010	

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B012		

Reference pages: A-ASKNR/L: Insert → B077 -, CBN → B180, PCD → B211

TC

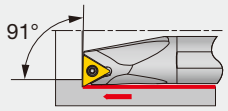


Triangular with hole Positive 7°

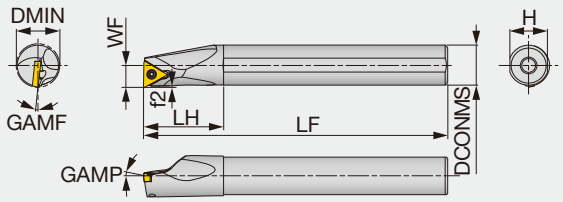
STREAMJETBAR

A/E-STFCR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
E06-STFCR/L2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-	0°	-9°	0.016	TC** 21.5...	0.89
E08-STFCR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	-	0°	-6°	0.016	TC** 21.5...	0.89
E10-STFCR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	-	0°	-5°	0.016	TC** 21.5...	0.89
E12-STFCR3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.750	-	0°	-5°	0.032	TC** 32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-STFCR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	0°	-13°	0.4	TC**1103...	1.2
A12M-STFCR/L1103-D140	Steel	14	12	7	150	24	11	0.5	0°	-10°	0.4	TC**1103...	1.2
A16Q-STFCR/L1103-D180	Steel	18	16	9	180	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2
E10M-STFCR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	0°	-13°	0.4	TC**1103...	1.2
E12Q-STFCR/L1103-D140	Carbide	14	12	7	180	27	11	0.5	0°	-10°	0.4	TC**1103...	1.2
E16R-STFCR/L1103-D180	Carbide	18	16	9	200	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (STFCR**) with left-hand inserts (L); and left-hand toolholders (STFCL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
E**-STFCR/L2-D...	CSTB-2.5	T-8F
E12-STFCR3-D16	CSTB-4S	T15-F
A**-STFCR/L1103-D...	CSTB-2.5	T-8F
E**-STFCR/L1103-D...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B016			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B018			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing to medium cutting
Grade	DX120	KS05F
Breaker Shape	DIA	AL (with rake)
Cutting conditions	B022	

S

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	AH6225	AH6225
Breaker Shape	JP	JS	PS	PM
Cutting conditions	B024			

Reference pages: A/E-STFCR/L: Insert → B138 -, PCD → B216

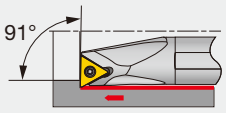
TP

Triangular
with hole
Positive 11°

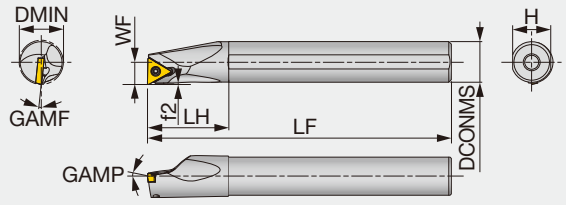
STREAMJETBAR

A/E-STFPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
E06-STFPR2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-	0°	-5°	0.016	TP** 21.5...	0.89
E08-STFPR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	-	0°	-3°	0.016	TP** 21.5...	0.89
E10-STFPR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.605	-	0°	-2°	0.016	TP** 21.5...	0.89
E12-STFPR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.725	-	0°	-2°	0.032	TP** 32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A08H-STFPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
A10K-STFPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...	1.2
A12M-STFPR/L1102-D140	Steel	14	12	7.0	150	24	11	0.6	5°	-4°	0.4	TP**1102...	1.2
A16Q-STFPR/L13-D180	Steel	18	16	9	180	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
A20R-STFPR13-D220	Steel	22	20	11	200	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4
A25S-STFPR16-D270	Steel	27	25	13.5	250	45	23	0.6	5°	-1°	0.4	TP**16T3...	3
E08K-STFPR/L09-D100	Carbide	10	8	5.5	125	22	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
E10M-STFPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-6°	0.4	TP**1102...	1.2
E12Q-STFPR/L1102-D140	Carbide	14	12	7	180	27	11	0.6	5°	-4°	0.4	TP**1102...	1.2
E16R-STFPR13-D180	Carbide	18	16	9	200	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
E20S-STFPR13-D220	Carbide	22	20	11	250	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (STFPR**) with left-hand inserts (L); and left-hand toolholders (STFPL**) with right-hand inserts (R).
TPGH, TPGM, and TPGA inserts cannot be used.

INCH SPARE PARTS

Designation	Clamping screw	Wrench
E06-STFPR2-D08	CSTB-2.5B	T-8F
E08/10-STFPR2-D1...	CSTB-2.5	T-8F
E12-STFPR/L3-D16	CSTB-4S	T-15F

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
A08H-STFPR/L09-D100	CSTB-2.2S	T-7F
A10K-STFPR/L1102-D120	CSTB-2.5B	T-8F
A12M-STFPR/L1102-D140	CSTB-2.5	T-8F
A16Q-STFPR/L13-D180	CSTB-3S	T-9F
A20R-STFPR13-D220	CSTB-3	T-9F
A25S-STFPR16-D270	CSTB-4M	T-15F
E08K-STFPR/L09-D100	CSTB-2.2S	T-7F
E10M-STFPR/L1102-D120	CSTB-2.5B	T-8F
E12Q-STFPR/L1102-D140	CSTB-2.5	T-8F
E16R-STFPR13-D180	CSTB-3S	T-9F
E20S-STFPR13-D220	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing
Grade	DX140
Breaker Shape	DIA (with rake)
Cutting conditions	B022

S

Application	Precision finishing
Grade	BX470
Breaker Shape	CBN
Cutting conditions	B024

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

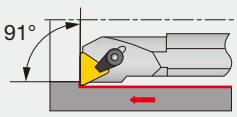
Reference pages: A/E-STFPR/L: Insert → B142 -, CBN → B199 -, PCD → B216 -

TP

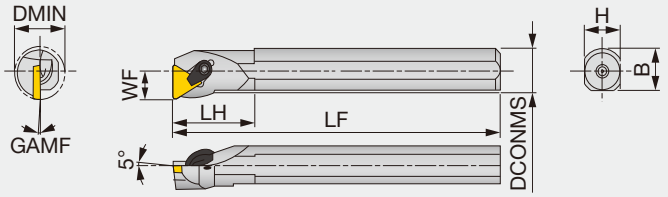
Triangular
without hole
Positive 11°

S/C-CTFPR/L

Clamp-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S12M-CTFPR/L11	Steel	16	12	9	150	25	11	11.5	-6°	0.4	TP**1103...
S16Q-CTFPR/L11	Steel	20	16	11	180	30	15	15	-4°	0.4	TP**1103...
S20R-CTFPR/L16	Steel	25	20	13	200	40	18	18.5	-2°	0.8	TP**1603...
S25S-CTFPR/L16	Steel	32	25	17	250	45	23	22.5	0°	0.8	TP**1603...
S32T-CTFPR/L16	Steel	40	32	22	300	50	30	29.5	0°	0.8	TP**1603...
C12Q-CTFPR/L11	Carbide	16	12	9	180	-	11	-	-6°	0.4	TP**1103...
C16R-CTFPR/L11	Carbide	20	16	11	200	-	15	-	-4°	0.4	TP**1103...

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set 1	Clamp set 2	Wrench	Shim	Shim screw
S12M-CTFPR/L11	CSW-00	-	P-2.5	-	-
S16Q-CTFPR/L11	-	CSG-5S	P-2.5	-	-
S20R-CTFPR/L16	-	CSG-6S	P-3	-	-
S25S-CTFPR/L16	-	CSG-6	P-3	-	-
S32T-CTFPR/L16	-	CSG-6	P-3	PAT-32	M3X0.5X6
C12Q-CTFPR/L11	CSW-00	-	P-2.5	-	-
C16R-CTFPR/L11	-	CSG-5S	P-2.5	-	-

Reference pages: S/C-CTFPR/L: Insert → B142 -, CBN → B199 -, PCD → B217 -

TP

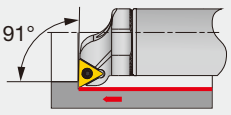


Triangular with hole Positive 11°

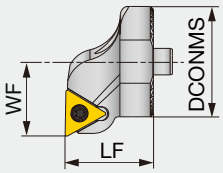
BOREMEISTER

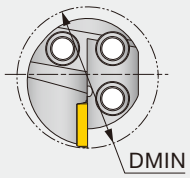
S-STFPR/L-H

Screw-on clamp exchangeable boring head, for positive 60° triangular inserts



Cutting edge style **F**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S16-STFPR/L09-H	0.787	0.630	0.433	0.787	D/G.625	TP** 73...
S16-STFPR/L11-H	0.787	0.630	0.433	0.787	D/G.625	TP** 21.5...
S20-STFPR/L11-H	0.984	0.787	0.512	0.787	D/G.750	TP** 21.5...
S25-STFPR/L11-H	1.260	0.984	0.669	0.787	D1.00	TP** 21.5...
S32-STFPR/L16-H	1.575	1.260	0.866	1.260	D1.25	TP** 32.5...
S40-STFPR/L16-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	TP** 32.5...

Note: Use right-hand toolholders (STFPR**) with left-hand inserts (L); and left-hand toolholders (STFPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
S16-STFPR/L09-H	CSTB-2.2S	T-7F
S16-STFPR/L11-H	CSTB-2.5	T-8F
S20-STFPR/L11-H	CSTB-2.5	T-8F
S25-STFPR/L11-H	CSTB-2.5	T-8F
S32-STFPR/L16-H	CSTB-4M	T-15F
S40-STFPR/L16-H	CSTB-4M	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing
Grade	DX140
Breaker Shape	DIA (with rake)
Cutting conditions	B022

S

Application	Precision finishing
Grade	BX470
Breaker Shape	CBN
Cutting conditions	B024

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: S-STFPR/L-H: Insert → B142 -, CBN → B199 -, PCD → B216 -
Shank → D090 - D092

TP

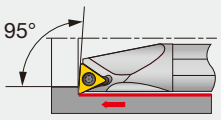


Triangular with hole Positive 11°

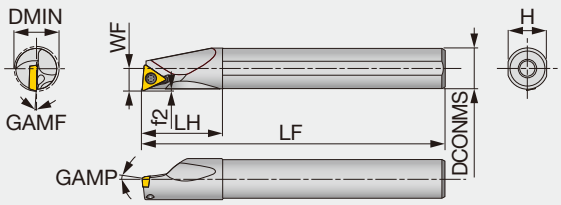
STREAMJETBAR

A/E-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A05-STUPR/L7-D07	Steel	0.438	0.313	0.250	5.00	0.625	2.880	-	5°	-7°	0.016	TP** 73...(1)	0.66
A06-STUPR/L2-D08	Steel	0.500	0.375	0.281	5.00	0.750	0.350	-	5°	-5°	0.016	TP** 21.5...(1)	0.89
A08-STUPR/L2-D11	Steel	0.688	0.500	0.406	5.00	1.000	0.475	-	5°	-3°	0.016	TP** 21.5...(1)	0.89
A10-STUPR/L2-D14	Steel	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP** 21.5...(1)	1.00
A10-STUPR/L2.5-D14	Steel	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP** 22...(1)	1.00
A12-STUPR/L3-D16	Steel	1.000	0.750	0.594	7.00	1.437	0.725	-	5°	-2°	0.032	TP** 32.5...(1)	1.00
A16-STUPR/L3-D20	Steel	1.250	1.000	0.688	7.00	1.750	0.975	-	5°	0°	0.032	TP** 32.5...(1)	2.20
E05-STUPR7-D07	Carbide	0.438	0.313	0.250	5.00	0.625	2.880	-	5°	-7°	0.016	TP** 73...(1)	0.66
E06-STUPR2-D08	Carbide	0.500	0.375	0.281	5.00	0.750	0.350	-	5°	-5°	0.016	TP** 21.5...(1)	0.89
E08-STUPR2-D11	Carbide	0.688	0.500	0.406	5.00	1.000	0.475	-	5°	-3°	0.016	TP** 21.5...(1)	0.89
E10-STUPR2.5-D14	Carbide	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP** 22...(1)	1.00

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A07G-STUPR/L07-D080	Steel	8	7	4	90	12	6.75	0.4	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L07-D080	Steel	8	8	4	100	19.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
A10F-STUPR1102-D120	Steel	12	10	6.5	80	20	9	1.4	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	5°	-10°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D140	Steel	14	12	7	100	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D140	Steel	14	12	7	150	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1103-D140	Steel	14	12	7	150	24	11	0.6	5°	-6°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D160	Steel	16	12	9	100	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D160	Steel	16	12	9	150	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A16K-STUPR13-D180	Steel	18	16	9	125	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L1103-D180	Steel	18	16	9	180	32	15	0.8	5°	-4°	0.4	TP**1103...(1)	1.4
A16Q-STUPR/L13-D180	Steel	18	16	9	180	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16K-STUPR13-D200	Steel	20	16	11	125	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L13-D200	Steel	20	16	11	180	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A20R-STUPR/L1103-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
A20R-STUPR/L13-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1303...(1)	1.4
A25S-STUPR/L16-D270	Steel	27	25	13.5	250	45	23	0.5	5°	-1°	0.8	TP**16T3...(1)	3
A32T-STUPR/L16-D340	Steel	34	32	17	300	50	30	0.7	5°	0°	0.8	TP**16T3...	3
E07H-STUPR/L07-D080	Carbide	8	7	4	100	14	6.75	0.3	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR07-D080	Carbide	8	8	4	90	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08K-STUPR/L07-D080	Carbide	8	8	4	125	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR09-D100	Carbide	10	8	5.5	90	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E08K-STUPR/L09-D100	Carbide	10	8	5.5	125	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E10F-STUPR1102-D120	Carbide	12	10	6.5	80	25	9	0.5	5°	-6°	0.4	TP**1102...(1)	1.2
E10H-STUPR1102-D120	Carbide	12	10	6.5	100	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-10°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D140	Carbide	14	12	7	90	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D140	Carbide	14	12	7	110	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1102-D140	Carbide	14	12	7	180	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1103-D140	Carbide	14	12	7	180	27	11	0.7	5°	-6°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D160	Carbide	16	12	9	90	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D160	Carbide	16	12	9	110	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
E12Q-STUPR/L1102-D160	Carbide	16	12	9	180	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E16H-STUPR13-D180	Carbide	18	16	9	100	32	15	0.9	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L1103-D180	Carbide	18	16	9	200	32	15	0.8	5°	-3°	0.4	TP**1103...(1)	1.4
E16L-STUPR13-D180	Carbide	18	16	9	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L13-D180	Carbide	18	16	9	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16H-STUPR13-D200	Carbide	20	16	11	100	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16L-STUPR13-D200	Carbide	20	16	11	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L13-D200	Carbide	20	16	11	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E20S-STUPR1103-D220	Carbide	22	20	11	250	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
E20S-STUPR13-D220	Carbide	22	20	11	250	36	18	0.6	5°	-2°	0.4	TP**1303...(1)	1.4
E25T-STUPR16-D270	Carbide	27	25	13.5	300	45	23	0.5	5°	-1°	0.8	TP**16T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).
(1) TPGH, TPGM, and TPGA inserts cannot be used.

INCH SPARE PARTS

Designation	Clamping screw	Wrench
A05-STUPR/L7-D07	CSTB-2.2S	T-7F
A06-STUPR/L2-D08	CSTB-2.5S	T-8F
A08-STUPR/L2-D11	CSTB-2.5B	T-8F
A10-STUPR/L2-D14	CSTB-2.5	T-8F
A10-STUPR/L2.5-D14	CSTB-2.5	T-8F
A12-STUPR/L3-D16	CSTB-4M	T-15F
A16-STUPR/L3-D20	CSTB-4M	T-15F
E05-STUPR7-D07	CSTB-2.2S	T-7F
E06-STUPR2-D08	CSTB-2.5S	T-8F
E08-STUPR2-D11	CSTB-2.5B	T-8F
E10-STUPR2.5-D14	CSTB-3	T-9F

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
A/E07*-STUPR/L07-...	CSTB-2.2L038	T-7F
A/E08*-STUPR/L07-...	CSTB-2.2L038	T-7F
A/E08*-STUPR/L09-...	CSTB-2.2L038	T-7F
A/E10*-STUPR/L1102-...	CSTB-2.5S	T-8F
A/E10*-STUPR/L1103-...	CSTB-3L050	T-9F
A/E12*-STUPR/L1102-...	CSTB-2.5B	T-8F
A/E12*-STUPR/L1103-...	CSTB-3L050	T-9F
A/E16*-STUPR/L1103-...	CSTB-3S	T-9F
A/E16*-STUPR/L13-...	CSTB-3S	T-9F
A/E20*-STUPR/L1103-...	CSTB-3S	T-9F
A/E20*-STUPR/L13-...	CSTB-3	T-9F
A/E25*-STUPR/L16-...	CSTB-4M	T-15F
A32*-STUPR/L16-...	CSTB-4M	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing
Grade	DX140
Breaker Shape	DIA (with rake)
Cutting conditions	B022

S

Application	Precision finishing
Grade	BX470
Breaker Shape	CBN
Cutting conditions	B024

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

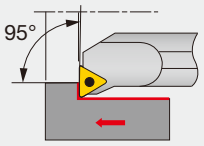
Reference pages: A/E-STUPR/L: Insert → B142 -, CBN → B199 -, PCD → B216 -

TP

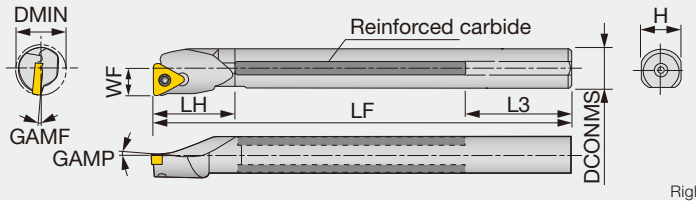
Triangular with hole Positive 11°

T-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque
T12M-STUPR11-D14	Reinforced	14	-	12	7	150	24	59	11	5°	-4°	0.4	TP**1102...	1.2
T12M-STUPR/L11	Reinforced	16	-	12	9	150	24	58	11	5°	-4°	0.4	TP**1102...	1.2
T16Q-STUPR13-D18	Reinforced	18	-	16	9	180	30	59	15	5°	-3.5°	0.4	TP**1303...	1.4
T16Q-STUPR/L13	Reinforced	20	-	16	11	180	30	59	15	5°	-3°	0.4	TP**1303...	1.4
T20R-STUPR13C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	5°	-2°	0.4	TP**1303...	1.4
T20R-STUPR/L13	Reinforced	24	-	20	13	200	40	49	18	5°	-2°	0.4	TP**1303...	1.4
T25S-STUPR16C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	5°	-1°	0.8	TP**16T3...	3
T25S-STUPR/L16	Reinforced	31	-	25	17	250	45	64	23	5°	0°	0.8	TP**16T3...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-STUPR11-D14	CSTB-2.5B	T-8F
T12M-STUPR/L11	CSTB-2.5	T-8F
T16Q-STUPR13-D18	CSTB-3S	T-9F
T16Q-STUPR/L13	CSTB-3	T-9F
T20R-STUPR13C-D22	CSTB-3S	T-9F
T20R-STUPR/L13	CSTB-3	T-9F
T25S-STUPR/L16...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH6225	AH6225	AH6225
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing
Grade	DX140
Breaker Shape	DIA (with rake)
Cutting conditions	B022

S

Application	Precision finishing
Grade	BX470
Breaker Shape	CBN
Cutting conditions	B024

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: T-STUPR/L: Insert → B142 -, CBN → B199 -, PCD → B216 -

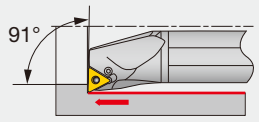
TN

Triangular with hole

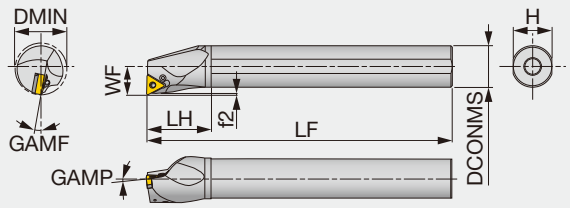
STREAMJETBAR

A-PTFNR/L

Lever-lock boring bar, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PTFNR/L1104-D320	Steel	32	25	17	200	45	23	1.31	-6°	-12°	0.8	TN**1104...	2
A32S-PTFNR/L1104-D400	Steel	40	32	22	250	50	30	1.25	-6°	-10°	0.8	TN**1104...	2
A25R-PTFNR/L16-D320	Steel	32	25	17	200	45	23	1.2	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTFNR/L16-D400	Steel	40	32	22	250	50	30	1.1	-6°	-10°	0.8	TN**1604...	2.7
A40T-PTFNR/L16-D500	Steel	50	40	27	300	60	37	1.1	-6°	-10°	0.8	TN**1604...	2.7
A50U-PTFNR/L16-D630	Steel	63	50	35	350	65	47	1.1	-6°	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
Note: Use right-hand toolholders (PTFNR**) with left-hand inserts (L); and left-hand toolholders (PTFNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L1104-D320	-	LCS23A	-	P-2.5	-	LCL23	EA-25	SSHM4-5
A32S-PTFNR/L1104-D400	-	LCS23A	-	P-2.5	-	LCL23	EA-32	SSHM4-5
A25R-PTFNR/L16-D320	ELST317BR/L	-	LCS3	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTFNR/L16-D400	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A40T-PTFNR/L16-D500	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6
A50U-PTFNR/L16-D630	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Breaker Shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

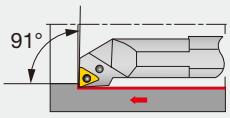
Reference pages: A-PTFNR/L: Insert → B087 -, CBN → B182 -, PCD → B212

TN

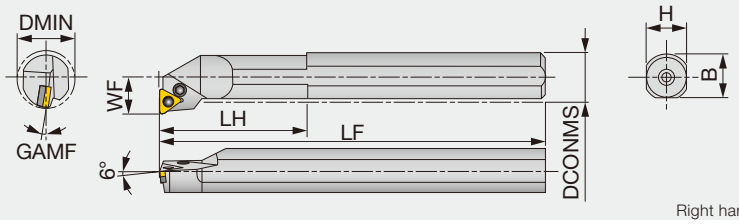
Triangular with hole

S-PTFNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque
S32S-PTFNR/L16	Steel	40	32	22	250	50	30	29.5	-10°	0.8	TN**1604...	2.7
S40T-PTFNR/L16	Steel	50	40	27	300	55	37	37.5	-10°	0.8	TN**1604...	2.7
S50U-PTFNR16	Steel	63	50	35	350	65	47	47.5	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

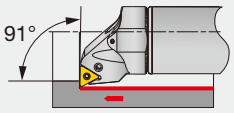
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S32S-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S32S-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S50U-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3

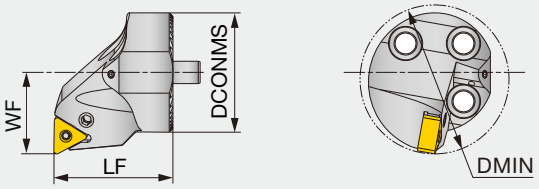
BOREMEISTER

S-PTFNR/L-H

Lever-lock clamp exchangeable boring head, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S32-PTFNR/L11-H	1.575	1.260	0.866	1.260	D1.25	TN** 23...
S40-PTFNR/L11-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	TN** 23...

Note: Use right-hand toolholders (PTFNR**) with left-hand inserts (L); and left-hand toolholders (PTFNL**) with right-hand inserts (R).

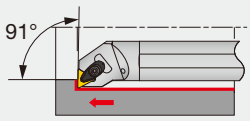
SPARE PARTS

Designation	Lever	Clamping screw	Wrench
S**-PTFNR/L11-H	LCL23	LCS23A	P-2.5

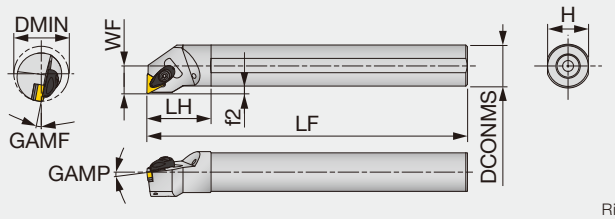
Reference pages: S-PTFNR/L: Insert → B087 -, CBN → B182 -, PCD → B212
S-PTFNR/L-H: Insert → B087 -
Shank → D090 - D092

A-ATFNR/L

Double-clamp boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ATFNR/L3-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	TN** 33...	2.21
A20-ATFNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	TN** 33...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ATFNR/L16-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	TN**1604...	3
A32S-ATFNR/L16-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	TN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ATFNR/L...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Breaker Shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA with rake	DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-ATFNR/L: Insert → B087 -, CBN → B182 -, PCD → B212

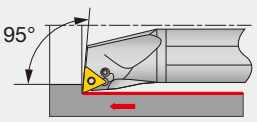
TN

Triangular with hole

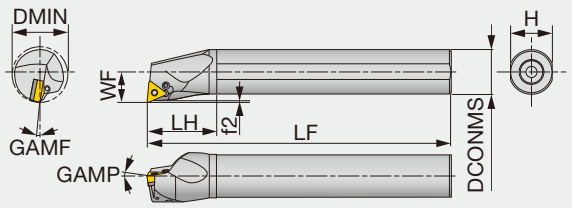
STREAMJETBAR

A-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PTUNR/L1104-D320	Steel	32	25	17	200	45	23	1.22	-6°	-12°	0.8	TN**1104...	2
A32S-PTUNR/L1104-D400	Steel	40	32	22	250	50	30	1.16	-6°	-10°	0.8	TN**1104...	2
A16M-PTUNR/L11-D200	Steel	20	16	11	150	32	15	1	-6°	-14°	0.4	TN**1103...	1.7
A20Q-PTUNR/L11-D250	Steel	25	20	13	180	36	18	1	-6°	-12°	0.4	TN**1103...	1.7
A25R-PTUNR/L16-D320	Steel	32	25	17	200	45	23	1.4	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16-D400	Steel	40	32	22	250	50	30	1.3	-6°	-10°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (PTUNR**) with left-hand inserts (L); and left-hand toolholders (PTUNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTUNR/L1104-D320	-	LCS23A	-	-	P-2.5	-	LCL23	EA-25	SSHM4-5
A32S-PTUNR/L1104-D400	-	LCS23A	-	-	P-2.5	-	LCL23	EA-32	SSHM4-5
A16M-PTUNR/L11-D200	-	LCS22A	-	P-2F	-	-	LCL22N	-	SSHM3-4
A20Q-PTUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL22N	EA-20	SSHM3-4
A25R-PTUNR/L16-D320	ELST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTUNR/L16-D400	LST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Breaker Shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	DIA	with rake T-DIA	P
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

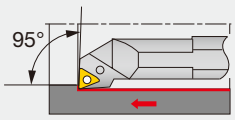
H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

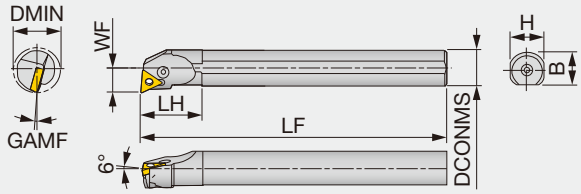
Reference pages: A-PTUNR/L: Insert → B087 -, CBN → B182 -, PCD → B212

A/S-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque
S16M-PTUNR/L11	Steel	20	16	11	150	30	15	15.5	-14°	0.4	TN**1103...	1.7
S20Q-PTUNR/L11	Steel	25	20	13	180	35	18	19	-12°	0.4	TN**1103...	1.7
S25R-PTUNR/L16	Steel	32	25	17	200	40	23	24	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16	Steel	40	32	22	250	50	30	29.5	-12°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

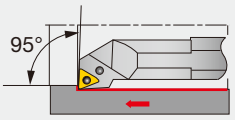
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*
S**-PTUNR/L11	-	LCS22A	-	P-2F	-	-	LCL22N	-
S25R-PTUNR16	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33	-
S25R-PTUNL16	ELST317BL	-	LCS3	-	P-2.5	LSP3	LCL33	-
A32S-PTUNR16	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32
A32S-PTUNL16	LST317BL	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32

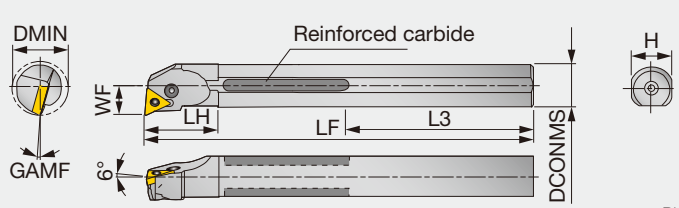
*Optional

T-PTUNR

Lever-lock boring bar, for negative 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	RE**	Insert	Torque
T16Q-PTUNR11	Reinforced	20	-	16	11	180	27	59	15	-14°	0.4	TN**1103...	1.7
T20R-PTUNR11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-12°	0.4	TN**1103...	1.7
T25S-PTUNR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-12°	0.8	TN**1604...	2.7
T32U-PTUNR16C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-10°	0.8	TN**1604...	2.7
T40V-PTUNR16C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-10°	0.8	TN**1604...	2.7
T50W-PTUNR16C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
T**-PTUNR11...	-	LCS22A	-	P-2F	-	-	LCL22N
T25S-PTUNR16C	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33
T**-PTUNR16C	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3

Reference pages: A/S-PTUNR/L, T-PTUNR: Insert → B087 -, CBN → B182 -, PCD → B212

VB

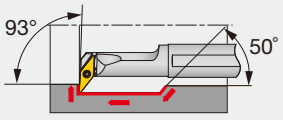


Rhombic, 35° with hole
Positive 5°

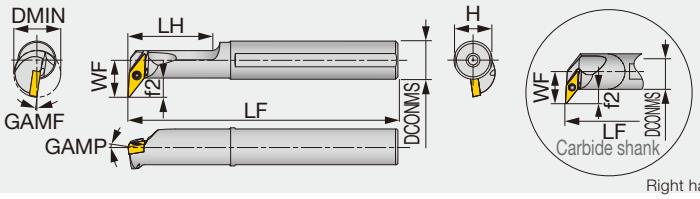
STREAMJETBAR

A/E-SVUBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

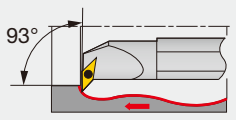
Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12-SVUBR2-D16	Steel	1.000	0.750	0.594	10.000	1.425	0.725	0.218	-0°	-6°	0.016	VB** 22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVUBR/L11-D250	Steel	25	20	17.5	200	40	19	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVUBR/L16-D320	Steel	32	25	20.5	250	50	23	8.5	0°	-6°	0.8	VB**1604...	3
E16R-SVUBR/L11-D245	Carbide	24.5	16	16	200	-	15	8	0°	-8°	0.4	VB**1103...	1.2
E20S-SVUBR/L11-D285	Carbide	28.5	20	18	250	-	19	8	0°	-7°	0.4	VB**1103...	1.2
E25T-SVUBR/L16-D340	Carbide	34	25	21	300	-	23	8.5	0°	-6°	0.8	VB**1604...	3

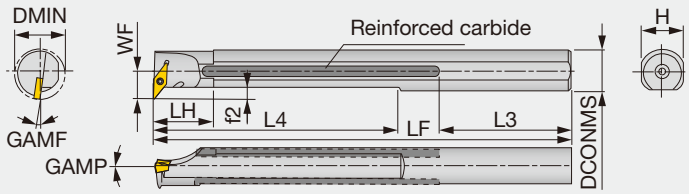
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUBR**) with left-hand inserts (L); and left-hand toolholders (SVUBL**) with right-hand inserts (R).

T-SVUBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	L4	H	f2	GAMP	GAMF	RE**	Insert	Torque
T20R-SVUBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	121	18	4	0°	-8°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUBR**) with left-hand inserts (L).

SPARE PARTS

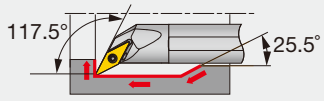
Designation	Clamping screw	Wrench
A12-SVUBR2-D16	CSTB-2.5	T-8F
A**-SVUBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVUBR/L16-D320	CSTB-3.5	T-15F
E**-SVUBR/L11-D2*5	CSTB-2.5	T-8F
E25T-SVUBR/L16-D340	CSTB-3.5	T-15F
T20R-SVUBR11C	CSTB-2.5	T-8F

Reference pages: A/E-SVUBR/L, T-SVUBR: Insert → B150 -, CBN → B207 -

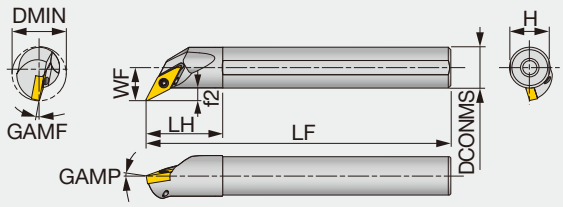
STREAMJETBAR

A/E-SVQBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SVQBR2-D16	Steel	1.000	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-6°	0.016	VB** 22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
A16Q-SVQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	VB**1103...	1.2
A20R-SVQBR/L11-D255	Steel	25.5	20	15	200	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
A25S-SVQBR/L16-D305	Steel	30.5	25	17.5	250	45	23	5	-5°	-8°	0.8	VB**1604...	3
E12Q-SVQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
E16R-SVQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	VB**1103...	1.2
E20S-SVQBR/L11-D255	Carbide	25.5	20	15	250	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
E25T-SVQBR/L16-D305	Carbide	30.5	25	17.5	300	45	23	5	-5°	-8°	0.8	VB**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (SVQBR**) with left-hand inserts (L); and left-hand toolholders (SVQBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A10-SVQBR2-D16	CSTB-2.5	T-8F
A**-SVQBR/L11-D...	CSTB-2.5	T-8F
A25S-SVQBR/L16-D305	CSTB-3.5	T-15F
E**-SVQBR/L11-D...	CSTB-2.5	T-8F
E25T-SVQBR/L16-D305	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B014			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Chipbreaker shape	JP	JS	PSS	PS
Cutting conditions	B016			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B014

M

Application	Medium cutting
Grade	AH6225
Chipbreaker shape	PS
Cutting conditions	B016

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: A/E-SVQBR/L: Insert → B150 -, CBN → B207 -

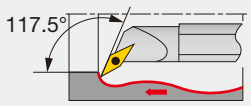
VB



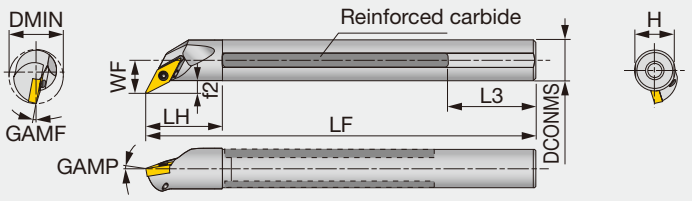
Rhombic, 35° with hole
Positive 5°

T-SVQBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

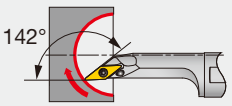
Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T20R-SVQBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	18	4	-5°	-7°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

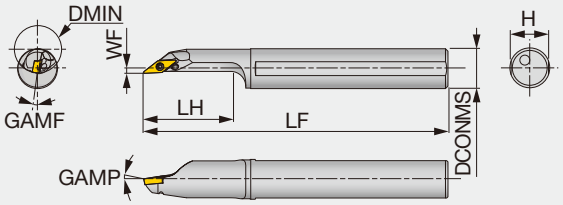
STREAMJETBAR

A-SVJBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A10-SVJBR/L2-D16	Steel	1.000	0.625	0.156	7.000	1.250	0.600	-5°	-6°	0.016	VB** 22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A20R-SVJBR/L11-D250	Steel	25	20	2	200	40	18	-5°	-5°	0.4	VB**1103...	1.2
A25S-SVJBR/L11-D300	Steel	30	25	3.5	250	50	23	-5°	-5°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVJBR**) with left-hand inserts (L); and left-hand toolholders (SVJBL**) with right-hand inserts (R).

SPARE PARTS

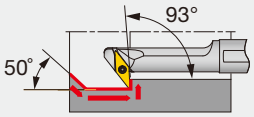
Designation	Clamping screw	Wrench
T20R-SVQBR11C	CSTB-2.5	T-8F
A**-SVJBR/L...	CSTB-2.5	T-8F

Reference pages: T-SVQBR, A-SVJBR/L: Insert → B150 -, CBN → B207 -

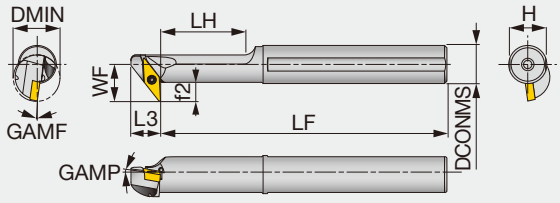
STREAMJETBAR

A-SVZBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12-SVZBR2-D16	Steel	1.000	0.750	0.594	10.000	1.425	0.500	0.725	0.219	0°	-5°	0.016	VB** 22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVZBR/L11-D200	Steel	20	16	15.5	180	35	12.5	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVZBR/L11-D250	Steel	25	20	17.5	200	40	12.5	18	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVZBR/L16-D320	Steel	32	25	24	250	50	17.5	23	12	0°	-6°	0.8	VB**1604...	3
A32T-SVZBR/L16-D400	Steel	40	32	27.5	300	72	17.5	30	12	0°	-5°	0.8	VB**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVZBR**) with right-hand inserts (R); and left-hand toolholders (SVZBL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A12-SVZBR2-D16	CSTB-2.5	T-8F
A**-SVZBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVZBR/L16-D320	CSTB-3.5	T-15F
A32T-SVZBR/L16-D400	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	T9215
Breaker Shape	JP	JS	PSS	PS
Cutting conditions	B014			

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH6225	AH6225
Chipbreaker shape	JP	JS	PSS	PS
Cutting conditions	B016			

P

Application	Medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B014

M

Application	Medium cutting
Grade	AH6225
Chipbreaker shape	PS
Cutting conditions	B016

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B026	

Reference pages: A-SVZBR/L: Insert → B150 -, CBN → B207 -

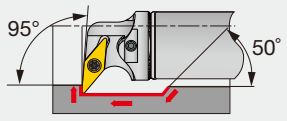
VC

Rhombic, 35° with hole
Positive 7°

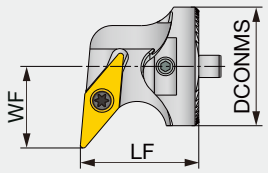
BOREMEISTER

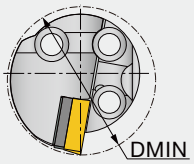
S-SVLCR/L-H

Screw-on clamp exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S32-SVLCR/L16T-H	1.575	1.260	0.866	1.260	D1.25	VC** 33...
S40-SVLCR/L16T-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	VC** 33...

Note: Use right-hand toolholders (SVLCR**) with left-hand inserts (L); and left-hand toolholders (SVLCL**) with right-hand inserts (R).

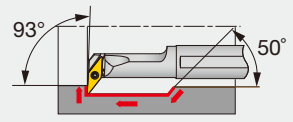
SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S32-SVLCR/L16T-H	SR16-236P	T-15/5	TVC 3-1P	SRTC-3P
S40-SVLCR/L16T-H	SR16-236P	T-15/5	TVC 3-1P	SRTC-3P

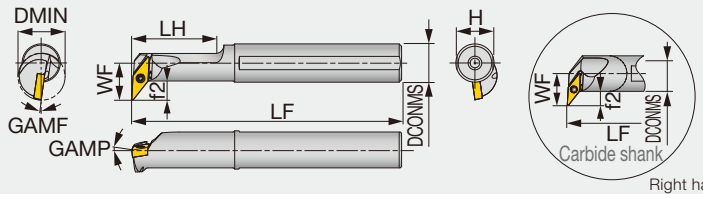
STREAMJETBAR

A/E-SVUCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SVUCR6-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-5°	0.016	VC** 63...	0.44
A12-SVUCR2-D16	Steel	1.000	0.750	0.594	10.000	1.420	0.725	0.218	0°	-5°	0.016	VC** 22...	1.0

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVUCR/L08-D160	Steel	16	12	11	150	30	11	5.5	0°	-8°	0.4	VC**0802...	0.6
A25S-SVUCR/L16-D320	Steel	32	25	19	250	45	23	6.5	0°	-5°	0.8	VC**1604...	3
E12Q-SVUCR/L08-D180	Carbide	18	12	11.5	180	-	11	5.5	0°	-8°	0.4	VC**0802...	0.6
E25T-SVUCR/L16-D320	Carbide	32	25	19	300	-	23	6.5	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L); and left-hand toolholders (SVUCL**) with right-hand inserts (R).

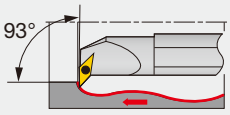
SPARE PARTS

Designation	Clamping screw	Wrench
A10-SVUCR6-D14	CSTB-2L	T-6F
A12-SVUCR2-D16	CSTB-2.5	T-8F
A12M-SVUCR/L08-D160	CSTB-2L	T-6F
A25S-SVUCR/L16-D320	CSTB-3.5	T-15F
E12Q-SVUCR/L08-D180	CSTB-2L	T-6F
E25T-SVUCR/L16-D320	CSTB-3.5	T-15F

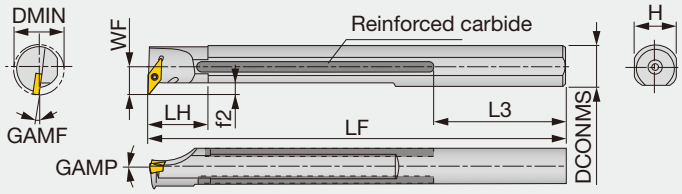
Reference pages: S-SVLCR/L-H: Insert → B152 -, CBN → B209, PCD → B220
Shank → D090 - D092
A/E-SVUCR/L: Insert → B152 -, CBN → B209, PCD → B220

T-SVUCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

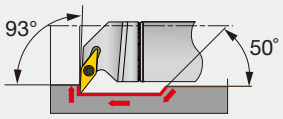
Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T25S-SVUCR16C	Reinforced	32	Rc1/4	25	19	250	40	64	23	6.5	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: N·m **RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L).

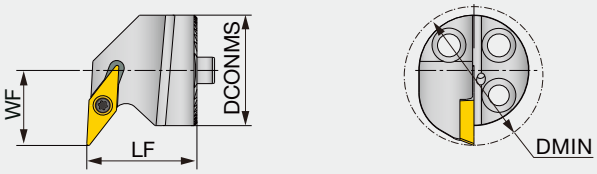
BOREMEISTER

S-SVUCR/L-H

Screw-on clamp exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S20-SVUCR/L11-H	1.063	0.787	0.630	0.787	D/G.750	VC** 22...
S25-SVUCR/L11-H	1.220	0.984	0.669	0.984	D1.00	VC** 22...

Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L); and left-hand toolholders (SVUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T25S-SVUCR16C	CSTB-3.5L	T-15F
S**-SVUCR/L11-H	SR14-560	T-8/5

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PS	PS
	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
	B026	

Reference pages: T-SVUCR: Insert → B152 -, CBN → B209, PCD → B220
S-SVUCR/L-H: Insert → B152 -, CBN → B209, PCD → B220
Shank → D090 - D092

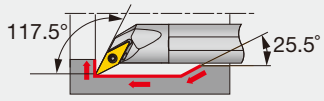
VC

Rhombic, 35° with hole
Positive 7°

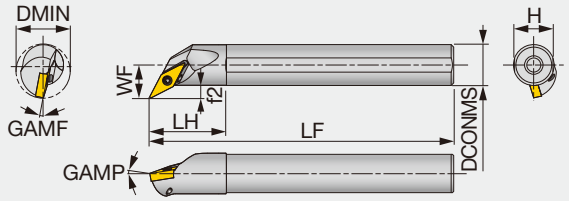
STREAMJETBAR

A/E-SVQCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

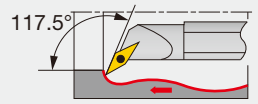
Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SVQCR6-D11	Steel	0.688	0.500	0.375	5.000	1.000	0.475	0.125	-5°	-8°	0.016	VC** 63...	0.44
A10-SVQCR2-D16	Steel	1.000	0.625	0.500	10.000	1.250	0.600	0.188	-5°	-8°	0.016	VC** 22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SVQCR/L08-D135	Steel	13.5	10	8	125	20	9	3	-5°	-8°	0.4	VC**0802...	0.6
A16Q-SVQCR/L11-D215	Steel	21.5	16	13	180	30	15	4.9	-5°	-8°	0.4	VC**1103...	1.2
E10M-SVQCR/L08-D135	Carbide	13.5	10	8	150	25	9	3	-5°	-8°	0.4	VC**0802...	0.6
E16R-SVQCR/L11-D215	Carbide	21.5	16	13	200	32	15	4.9	-5°	-8°	0.4	VC**1103...	1.2

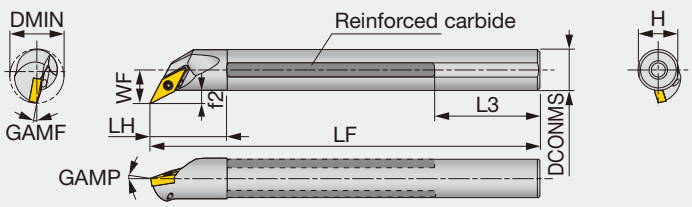
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVQCR**) with left-hand inserts (L); and left-hand toolholders (SVQCL**) with right-hand inserts (R).

T-SVQCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T25S-SVQCR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	4.5	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

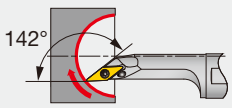
Designation	Clamping screw	Wrench
A08-SVQCR6-D11	CSTB-2L	T-6F
A10-SVQCR2-D16	CSTB-2.5	T-8F
A10K-SVQCR/L08-D135	CSTB-2L	T-6F
A16Q-SVQCR/L11-D215	CSTB-2.5	T-8F
E10M-SVQCR/L08-D135	CSTB-2L	T-6F
E16R-SVQCR/L11-D215	CSTB-2.5	T-8F
T25S-SVQCR16C	CSTB-3.5L	T-15F

Reference pages: A/E-SVQCR/L, T-SVQCR: Insert → B152 -, CBN → B209, PCD → B220

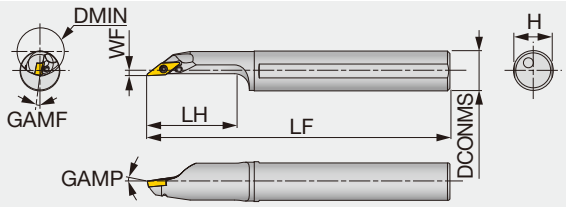
STREAMJETBAR

A-SVJCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A10-SVJCR2-D16	Steel	1.000	0.625	0.156	7.000	1.750	0.600	-5°	-6°	0.016	VC** 22..	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVJCR/L08-D160	Steel	16	12	2	150	28	11	-5°	-5°	0.4	VC**0802...	0.6
A16Q-SVJCR/L08-D200	Steel	20	16	2	180	35	15	-5°	-5°	0.4	VC**0802...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVJCR**) with left-hand inserts (L); and left-hand toolholders (SVJCL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
A**-SVJCR/L...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B014	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B016	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages: A-SVJCR/L: Insert → B152 -

VC

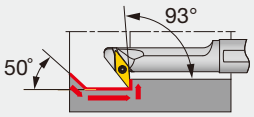


Rhombic, 35° with hole
Positive 7°

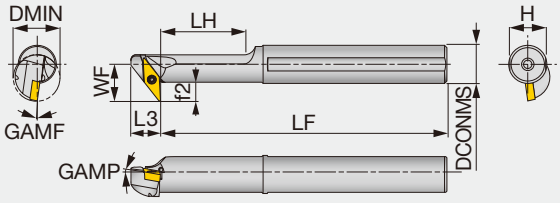
STREAMJETBAR

A-SVZCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SVZCR6-D12	Steel	0.750	0.500	0.438	5.000	1.000	0.395	0.475	0.188	0°	-6°	0.016	VC** 63...	0.44
A12-SVZCR2-D16	Steel	1.000	0.750	0.593	10.000	1.425	0.500	0.725	0.218	0°	-7°	0.016	VC** 22...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVZCR/L08-D160	Steel	16	12	11	150	30	10	11	5.5	0°	-8°	0.4	VC**0802...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVZCR**) with right-hand inserts (R); and left-hand toolholders (SVZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A08-SVZCR6-D12	CSTB-2L	T-6F
A12-SVZCR2-D16	CSTB-2.5	T-8F
A12M-SVZCR/L08-D160	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B016	

M

Application	Finishing	Finishing to medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	DIA with rake	DIA	AL
Cutting conditions	B022		

S

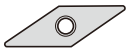
Application	Finishing	Finishing to medium cutting
Grade	AH8005	AH8015
Breaker Shape	PS	PS
Cutting conditions	B024	

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages: A-SVZCR/L: Insert → B152 -, CBN → B209, PCD → B220

VN YN

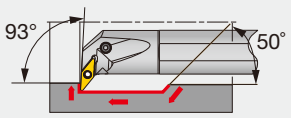
 Rhombic, 35° with hole

 Rhombic, 25° with hole

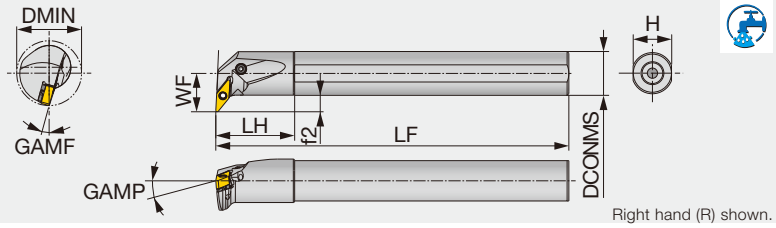
STREAMJETBAR

A-PVUNR/L

Lever-lock boring bar, for negative 35°/25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-PVUNR/L2.33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.197	-6°	-13°	0.031	VN** 2.33...	2.2
A16-PVUNR/L2.33-D24	Steel	1.500	1.000	0.859	12.000	1.750	0.906	0.315	-6°	-10°	0.031	VN** 2.33...	2.2
A20-PVUNR/L2.33-D26	Steel	1.650	1.250	0.859	14.000	2.000	1.188	0.217	-6°	-10°	0.031	VN** 2.33...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PVUNR/L1204-D320	Steel	32	25	18	200	45	23	5.0	-5°	-15°	0.8	VN**1204...	3
A25R-PVUNR/L1204-D370	Steel	37	25	22	200	45	23	8.0	-4°	-15°	0.8	VN**1204...	3
A32S-PVUNR/L1204-D400	Steel	40	32	22	250	50	30	5.5	-6°	-12°	0.8	VN**1204...	3
A25R-PVUNR/L16-D370	Steel	37	25	22	200	45	23	9.5	-5°	-14°	0.8	VN**/YN**1604...	2.7
A32S-PVUNR/L16-D400	Steel	40	32	22	250	50	30	6	-5°	-12°	0.8	VN**/YN**1604...	2.7
A40T-PVUNR/L16-D500	Steel	50	40	27	300	60	37	7	-5°	-10°	0.8	VN**/YN**1604...	2.7

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A16-PVUNR/L2.33-D..., A25R-PVUNR/L1204-D...	LSV212	LCS3V	P-2.5	LSP3	LCL3V	EA-25	SSHM4-5
A20-PVUNR/L2.33-D26, A32S-PVUNR/L1204-D400	LSV212	LCS3V	P-2.5	LSP3	LCL3V	EA-32	SSHM4-5
A25R-PVUNR/L16-D370	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-25	SSHM4-5
A32S-PVUNR/L16-D400	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-32	SSHM4-5
A40T-PVUNR/L16-D500	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	-	SSHM5-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	DIA with rake
Cutting conditions	B010

S

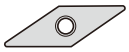
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-PVUNR/L: Insert → B098 -, B110, CBN → B186 -, PCD → B212

VN YN

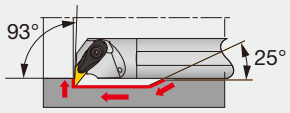
 Rhombic, 35° with hole

 Rhombic, 25° with hole

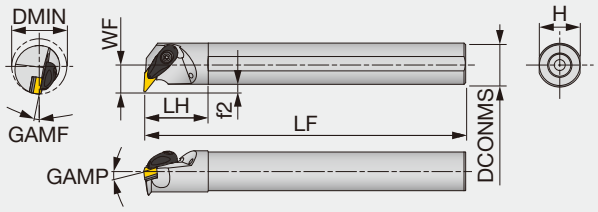
TURNING A

A-AVUNR/L

Double-clamp boring bar, for negative 35°/25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A20-AVUNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6	-10	0.031	VN**/YN** 33...	2.21
A24-AVUNR/L3-D32	Steel	2.000	1.500	1.060	14.000	2.160	1.440	0.275	-6	-8	0.031	VN**/YN** 33...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A32S-AVUNR/L16-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	VN**/YN**1604...	3
A40T-AVUNR/L16-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	VN**/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AVUNR/L...	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	DIA with rake
Cutting conditions	B010

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

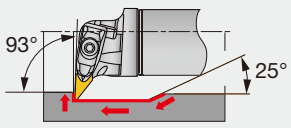
Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: A-AVUNR/L: Insert → B098 -, B110, CBN → B186 -, PCD → B212

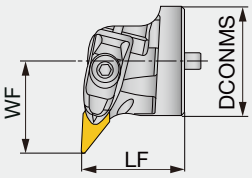
BOREMEISTER

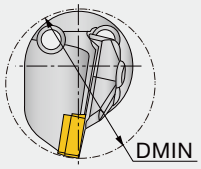
S-DVUNR/L-H

Double-clamp exchangeable boring head, for negative 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S40-DVUNR/L16T-H	2.205	1.575	1.339	1.496	D1.50, D2.00, D2.50	VN** 33...

SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
S40-DVUNR/L16T-H	ASV322	SR35080I	DLM3V	SR10402267	KSP5	HW4.0

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B004		

M

Application	Finishing	Medium cutting
Grade	T6215	AH6225
Chipbreaker shape	SF	SM
Cutting conditions	B006	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	DIA with rake
Cutting conditions	B010

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXA10	BXA20
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages: S-DVUNR/L-H: Insert → B098 -, B110, CBN → B186 -, PCD → B212
Shank → D090 - D092

WB

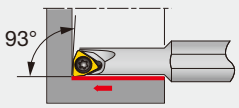


Trigon, 80°
with hole
Positive 5°

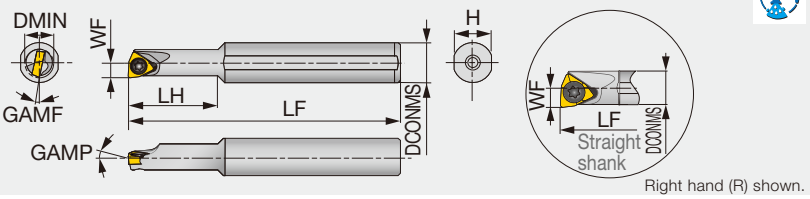
STREAMJETBAR

A/E-SWUBR/L

Screw-on boring bar, for positive 80° trigon inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A05F-SWUBR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.4	WB**0301...	0.6
A06G-SWUBR/L03-D070	Steel	7	6	3.5	90	11	5.75	0°	-12°	0.4	WB**0301...	0.6
A07G-SWUBR/L03-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.4	WB**0301...	0.6
A08H-SWUBR03-D060	Steel	6	8	3.1	100	18	7.5	0°	-12°	0.4	WB**0301...	0.6
A08H-SWUBR03-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	WB**0301...	0.6
E05G-SWUBR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.4	WB**0301...	0.6
E06H-SWUBR/L03-D070	Carbide	7	6	3.5	100	12	5.75	0°	-12°	0.4	WB**0301...	0.6
E07H-SWUBR/L03-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.4	WB**0301...	0.6
E08K-SWUBR03-D060	Carbide	6	8	3.1	125	30	7.5	0°	-12°	0.4	WB**0301...	0.6
E08K-SWUBR03-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	WB**0301...	0.6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUCR*) with left-hand inserts (L); and left-hand toolholders (SWUBL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
A/E**-SWUBR/L...	CSTB-2	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B016

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B018

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

N

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B022

Reference pages: A/E-SWUBR/L: Insert → B156

WX

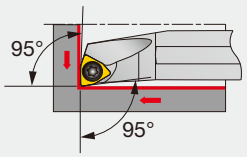


Trigon, 80°
with hole

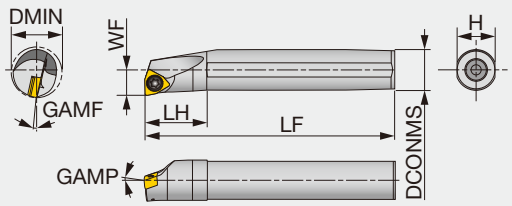
MINIFORCE TURN

A/E-SWLXR/L

Screw-on boring bar, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SWLXR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	-10°	-14°	0.016	WXGU 22**L/R...	0.66
A08-SWLXR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	-10°	-10°	0.016	WXGU 22**L/R...	0.66
A10-SWLXR/L2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	-10°	-8°	0.016	WXGU 22**L/R...	0.66
A12-SWLXR/L2-D16	Steel	1.000	0.750	0.593	7.000	1.438	0.725	-10°	-7°	0.016	WXGU 22**L/R...	0.66
A16-SWLXR/L2-D20	Steel	1.250	1.000	0.625	7.000	1.438	0.938	-10°	-7°	0.016	WXGU 22**L/R...	0.66
E06-SWLXR/L2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-10°	-14°	0.016	WXGU 22**L/R...	0.66
E08-SWLXR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.063	0.475	-10°	-10°	0.016	WXGU 22**L/R...	0.66
E10-SWLXR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	-10°	-8°	0.016	WXGU 22**L/R...	0.66
E12-SWLXR/L2-D16	Carbide	1.000	0.750	0.593	7.000	1.438	0.725	-10°	-7°	0.016	WXGU 22**L/R...	0.66
E16-SWLXR/L2-D20	Carbide	1.250	1.000	0.625	10.000	1.812	0.938	-10°	-7°	0.016	WXGU 22**L/R...	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A10K-SWLXR/L04-D120	Steel	12	10	6	125	20	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
A12M-SWLXR/L04-D140	Steel	14	12	7	150	24	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
A16Q-SWLXR/L04-D180	Steel	18	16	9	180	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
A20R-SWLXR/L04-D220	Steel	22	20	11	200	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9
E10M-SWLXR/L04-D120	Carbide	12	10	6	150	25	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
E12Q-SWLXR/L04-D140	Carbide	14	12	7	180	27	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
E16R-SWLXR/L04-D180	Carbide	18	16	9	200	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
E20S-SWLXR/L04-D220	Carbide	22	20	11	250	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SWLXR/L...	SR34-514	T-7F

Reference pages: A/E-SWLXR/L: Insert → B157 -, CBN → B210
Standard cutting conditions → D096

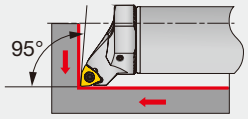
WX



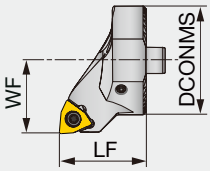
Trigon, 80°
with hole

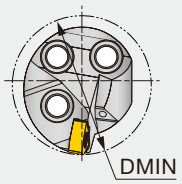
MINIFORCE TURN
S-SWLXR/L-H

Screw-on clamp exchangeable boring head, for WXGU inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SWLXR/L04-H	1.260	0.984	0.669	0.787	D1.00	WXGU…
S32-SWLXR/L04-H	1.575	1.260	0.866	1.260	D1.25	WXGU…
S40-SWLXR/L04-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	WXGU…

Note: Use right-hand toolholders (SWLXR**) with left-hand inserts (L); and left-hand toolholders (SWLXL**) with right-hand inserts (R).

SPARE PARTS





Designation	Clamping screw	Wrench
S**-SWLXR/L04-H	SR34-514	T-7F

INSERT SELECTION

P

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	AH8015
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

P

Application	Medium cutting
Grade	AH8015
Breaker Shape	TS
Cutting conditions	D096

K

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	NS9530	AH8015
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

K

Application	Medium cutting
Grade	AH8015
Breaker Shape	TS
Cutting conditions	D096

H

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	BXA10	BXA20	BXA20
Breaker Shape	HP	CBN	CBN
Cutting conditions	D096		

M

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH8015	AH8015
Chipbreaker shape	JS	JTS	SS	TS
Cutting conditions	D096			

M

Application	Medium cutting
Grade	AH8015
Chipbreaker shape	TS
Cutting conditions	D096

N

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	KS05F	KS05F	KS05F
Breaker Shape	SS	TS	TS
Cutting conditions	D096		

S

Application	Precision finishing	Finishing		Finishing to medium cutting
Grade	SH725	SH725	AH8015	AH8015
Breaker Shape	JS	JTS	SS	TS
Cutting conditions	D096			

S

Application	Medium cutting
Grade	AH8015
Breaker Shape	TS
Cutting conditions	D096

Reference pages: S-SWLXR/L-H: Insert → B157 -, CBN → B210, Shank → D090 - D092
Standard cutting conditions → D096

WN

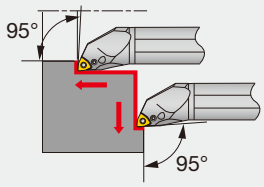


Trigon, 80°
with hole

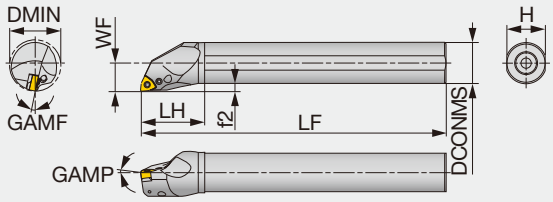
STREAMJETBAR

A-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PWLNR/L0604-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L0604-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7
A16M-PWLNR/L06-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L06-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7
A25R-PWLNR/L06-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	WN**0604...	2.7
A32S-PWLNR/L06-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0604...	2.7
A25R-PWLNR/L08-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0804...	2.7
A32S-PWLNR/L08-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0804...	4.8
A40T-PWLNR/L08-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	WN**0804...	4.8

Torque: Recommended clamping torque: N·m **RE: Standard corner radius
Note: Use right-hand toolholders (PWLNR**) with left-hand inserts (L); and left-hand toolholders (PWLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNR/L0604-D200	-	-	LCS33	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PWLNR/L0604-D250	-	-	LCS33	P-2F	-	-	LCL33N	EA-20	SSHM3-4
A16M-PWLNR/L06-D200	-	LCS33	-	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PWLNR/L06-D250	-	LCS33	-	P-2F	-	-	LCL33N	EA-20	SSHM3-4
A25R-PWLNR/L06-D320	LSW312BR/L	-	LCS3B	-	P-2.5	LSP3	LCL3	EA-25	SSHM4-5
A32S-PWLNR/L06-D400	LSW312BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A25R-PWLNR/L08-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-25	SSHM4-5
A32S-PWLNR/L08-D400	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PWLNR/L08-D500	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	CBN	CBN
Cutting conditions	B014	

Reference pages: A-PWLNR/L: Insert → B102 -, CBN → B187

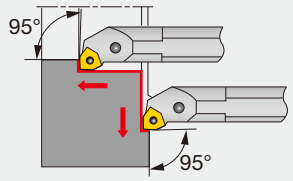
WN



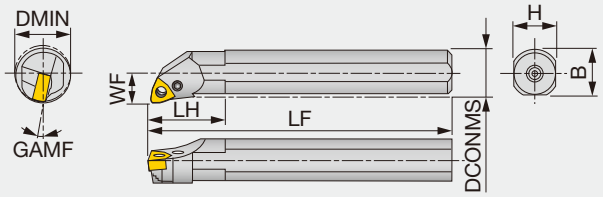
Trigon, 80°
with hole

S-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16M-PWLNR/L06	Steel	20	16	11	150	30	15	15.5	-17°	0.8	WN**0604...
S20Q-PWLNR/L06	Steel	25	20	13	180	35	18	19	-14°	0.8	WN**0604...
S25R-PWLNR/L06	Steel	32	25	17	200	40	23	24	-12°	0.8	WN**0604...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench	Spring pin	Lever
S**-PWLNR/L06	-	LCS33	-	P-2F	-	-	LCL33N
S25R-PWLNR06	LSW312BR	-	LCS3B	-	P-2.5	LSP3	LCL3
S25R-PWLNL06	LSW312BL	-	LCS3B	-	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF 	TM 
Cutting conditions	B004	

M

Application	Finishing	Medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	SS 	SM 
Cutting conditions	B006	

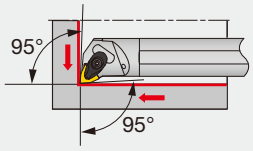
K

Application	Medium cutting
Grade	T515
Breaker Shape	TM 
Cutting conditions	B008

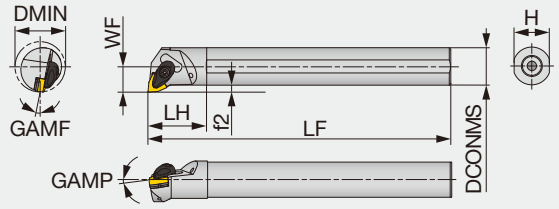
Reference pages: A-PWLNR/L: Insert → B102 -, CBN → B187

A-AWLNR/L

Double-clamp boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-AWLNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	0.031	WN** 33...	2.21
A20-AWLNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-10°	0.031	WN** 33...	2.21
A16-AWLNR/L3-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	WN** 33...	2.21
A20-AWLNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	WN** 33...	2.21
A16-AWLNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	WN** 43...	2.21
A20-AWLNR/L4-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	WN** 43...	2.21
A24-AWLNR/L4-D32	Steel	2.000	1.500	1.060	14.000	2.160	1.460	0.275	-6°	-8°	0.031	WN** 43...	2.21
A32-AWLNR/L4-D40	Steel	2.500	2.000	1.370	16.000	2.550	1.850	0.393	-6°	-7°	0.031	WN** 43...	2.21

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-AWLNR/L0604-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0604...	3
A32S-AWLNR/L0604-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0604...	3
A25R-AWLNR/L06-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0604...	3
A32S-AWLNR/L06-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0604...	3
A25R-AWLNR/L08-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0804...	3
A32S-AWLNR/L08-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0804...	3
A40T-AWLNR/L08-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	WN**0804...	3
A50U-AWLNR/L08-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	0.8	WN**0804...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AWLNR/L33-D..., A**-AWLNR/L0604-D...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
A**-AWLNR/L3-D..., A**-AWLNR/L06-D...	ACP3S	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
A**-AWLNR/L4-D..., A**-AWLNR/L08-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

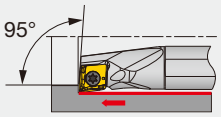
Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	CBN	CBN
Cutting conditions	B014	

Reference pages: A-AWLNR/L: Insert → B102 -, CBN → B187

Screw-on boring bar, for XOMU rhombic inserts



Cutting edge style **U**



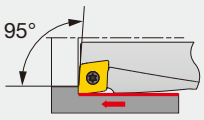
Metric	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	Insert
A08H-SXUOR/L05-D100	10	8	5	100	16	7.5	-7°	-0.8°	XOMU05X204-PS
A12M-SXUOR/L07-D140	14	12	7	150	24	11	-7.2°	3.2°	XOMU07H304-PS
E08K-SXUOR/L05-D100	10	8	5	125	22	7.5	-7°	-0.8°	XOMU05X204-PS
E12Q-SXUOR/L07-D140	14	12	7	180	27	11	-7.2°	3.2°	XOMU07H304-PS

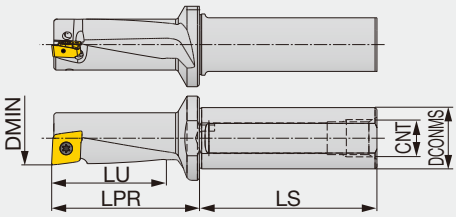
SPARE PARTS

Designation	Clamping screw	Wrench
A08H-SXUOR/L05-D100	CSTB-2L040	T-6F
A12M-SXUOR/L07-D140	CSPB-2.5	IP-8D
E08K-SXUOR/L05-D100	CSTB-2L040	T-6F
E12Q-SXUOR/L07-D140	CSPB-2.5	IP-8D

TBM

Maximum hole depth for LH/DC = 2.25





Metric	DMIN	DCONMS	LU	LS	LPR	CNT	Insert
TBM10R/LF12-2.25	10	12	22.5	41.5	28.45	UNF 5/16-24	XOMU05X204-PS
TBM12R/LF16-2.25	12	16	27	43.9	33.53	G1/8	XOMU06H204-PS
TBM14R/LF16-2.25	14	16	31.5	46.4	38.57	G1/8	XOMU07H304-PS
TBM16R/LF20-2.25	16	20	36	57.1	42.9	G1/8	XOMU08T304-PS

SPARE PARTS

Designation	Clamping screw	Wrench
TBM10R/LF12-2.25	CSTB-2L040	T-6D
TBM12R/LF16-2.25	CSPB-2.2	IP-7D
TBM14R/LF16-2.25	CSPB-2.5	IP-8D
TBM16R/LF20-2.25	CSTB-3	T-9D

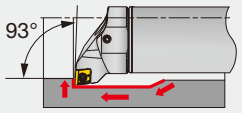
C
D
E
F
G
S
T
V
W
Y
OTHERS

Reference pages: Insert → D087
Standard cutting conditions → D098

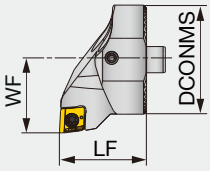
BOREMEISTER

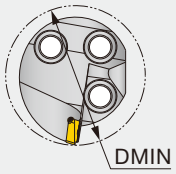
S-SXUOR05-H

Screw-on clamp exchangeable boring head, for XOMU inserts



Cutting edge style **U**





Right hand (R) shown.

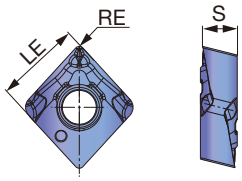
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S20-SXUOR05-H	0.984	0.787	0.512	0.787	D/G.750	XOMU05X204-PS
S25-SXUOR05-H	1.260	0.984	0.669	0.787	D1.00	XOMU05X204-PS

SPARE PARTS

Designation	Clamping screw	Wrench
S**-SXUOR05-H	CSTB-2L040	T-6F

INSERT

XOMU-PS



P	Steel	★					
M	Stainless	★					
K	Cast iron	★					
N	Non-ferrous	★					
S	Superalloys						
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated									S (in)	LE (in)
		AH725										
XOMU05X204-PS	0.016	●									0.091	0.219
XOMU06H204-PS	0.016	●									0.106	0.248
XOMU07H304-PS	0.016	●									0.130	0.287
XOMU08T304-PS	0.016	●									0.156	0.327

●: Line up

Reference pages: Shank → D090 - D092
Standard cutting conditions → D098

YW

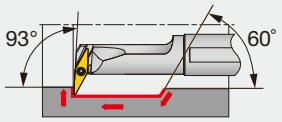


Rhombic, 25°
with hole
Positive 7°

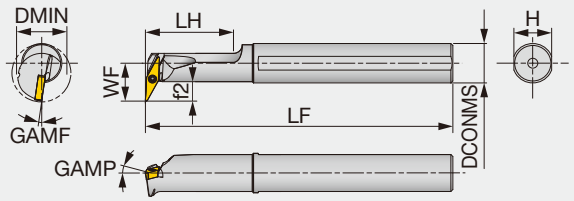
Y-PRO SERIES

A/E-SYUBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SYUBR/L2-D16	Steel	1.000	0.625	0.625	7.000	1.250	0.600	0.312	0°	-8°	0.016	YW**11T2...	0.44
E08-SYUBR/L2-D14	Carbide	0.875	0.500	0.563	5.000	1.060	0.475	0.307	0°	-8°	0.016	YW**11T2...	0.44
E10-SYUBR/L2-D16	Carbide	1.000	0.625	0.625	7.000	1.250	0.600	0.307	0°	-8°	0.016	YW**11T2...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SYUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	YW**11T2...	0.6
E12Q-SYUBR/L11-D200	Carbide	20	12	13.5	180	27	11	7.5	0°	-8°	0.4	YW**11T2...	0.6
E16R-SYUBR/L11-D245	Carbide	24.5	16	16	200	32	15	8	0°	-8°	0.4	YW**11T2...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SYUBR/L...	CSTB-2L	T-6F
E**-SYUBR/L...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	GT9215	T9215	T9215
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015	AH8015
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B018		

K

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	GT9530	T9215	T9215
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B020		

S

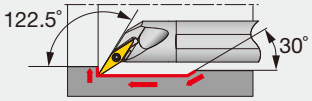
Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015	AH8015
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B024		

Reference pages: A/E-SYUBR/L: Insert → B159

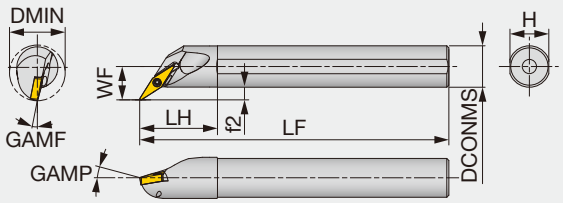
Y-PRO SERIES

A/E-SYQBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SYQBR2-D12	Steel	0.750	0.500	0.438	5.000	1.000	0.475	0.188	-5°	-10°	0.016	YW**11T2...	0.44
A10-SYQBR2-D14	Steel	0.875	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-8°	0.016	YW**11T2...	0.44
E08-SYQBR2-D12	Carbide	0.750	0.500	0.438	5.000	1.000	0.475	0.188	-5°	-10°	0.016	YW**11T2...	0.44
E10-SYQBR2-D14	Carbide	0.875	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-8°	0.016	YW**11T2...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SYQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
A16Q-SYQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	YW**11T2...	0.6
E12Q-SYQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
E16R-SYQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	YW**11T2...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
A/E**-SYQBR/L...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	GT9215	T9215	T9215
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B016		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015	AH8015
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B018		

K

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	GT9530	T9215	T9215
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B020		

S

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH8015	AH8015	AH8015
Breaker Shape	ZF	ZF	ZM
Cutting conditions	B024		

Reference pages: A/E-SYQBR/L: Insert → B159

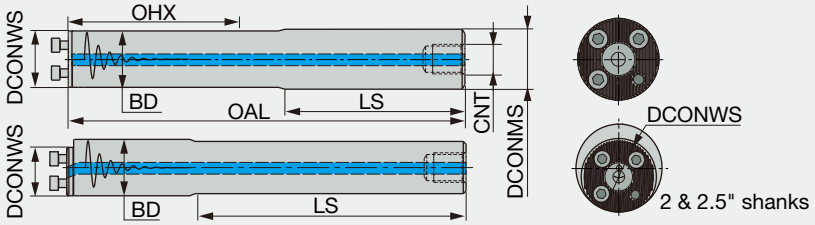
BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

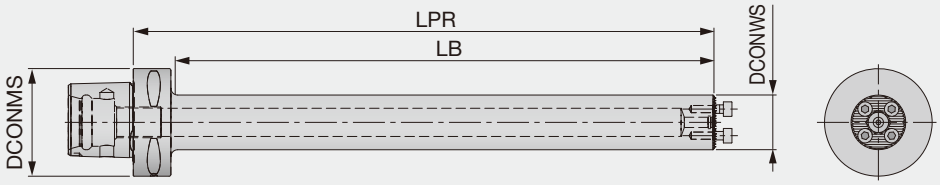
SPARE PARTS




Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SR55-2M3.5X10	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

C6-9D-C

PSC adapter with anti vibration, L/D = 9



Metric	Material	DCONWS	DCONMS	LPR	LB	WT (kg)
C6-D25-L230-9D-C	Steel	25	63	230.5	200.1	1.65
C6-D32-L288-9D-C	Steel	32	63	288.5	259.5	2.73
C6-D40-L368-9D-C	Steel	40	63	368.5	339	4.45

SPARE PARTS




Designation	Clamping screw	Wrench
C6-D25...	SRM4X12DIN912	HW3.0
C6-D32...	SRM5X12DIN912	HW4.0
C6-D40...	SRM6X16DIN912-12.9	HW5.0

BOREMEISTER

C#-SH-CHP / C#-SH-E-CHP

PSC compatible adapter with steel or carbide core

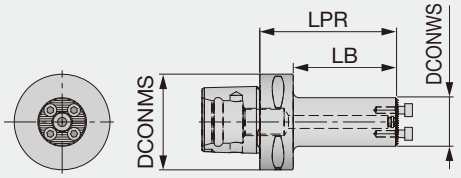


Fig. 1

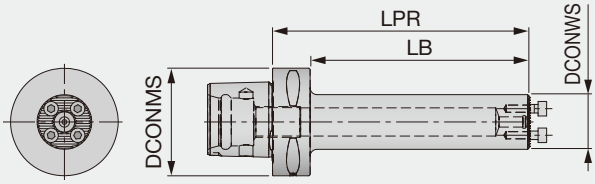


Fig. 2

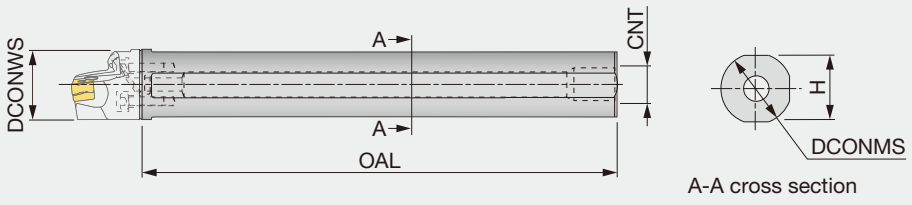
Metric	Material	DCONWS	DCONMS	LPR	LB	Fig.
C4-SH-D16-2.5D-CHP	Steel	16	40	40	20	1
C4-SH-D20-2.5D-CHP	Steel	20	40	50	30	1
C4-SH-D25-2.5D-CHP	Steel	25	40	55	35	1
C4-SH-D32-2.5D-CHP	Steel	32	40	75	55	1
C4-SH-D40-3D-CHP	Steel	40	40	80	80	1
C6-SH-D20-5D-E-CHP	Carbide	20	63	100	78	2
C6-SH-D25-5D-E-CHP	Carbide	25	63	115	93	2
C6-SH-D32-5D-E-CHP	Carbide	32	63	150	128	2
C6-SH-D40-5D-E-CHP	Carbide	40	63	185	163	2

SPARE PARTS

Designation	Clamping screw	Wrench
C4**D16...	SRM3X10DIN912	HW2.5
C4/C6**D20...	SR55-2M3.5X10	HW2.5
C4/C6**D25...	SRM4X12DIN912	HW3.0
C4/C6**D32...	SRM5X12DIN912	HW4.0
C4/C6**D40...	SRM6X16DIN912-12.9	HW5.0

D#4D-SH

Steel shank for internal turning, with through coolant



A-A cross section

Inch	Material	DCONWS	DCONMS	OAL	CNT	H
D1.00-L7.2-4D-SH	Steel	1.000	1.000	7.200	UNF-2B 1/2"-20	0.921
D1.25-L8.74-4D-SH	Steel	1.250	1.250	8.740	UNF-2B 1/2"-20	1.142
D1.50-L10.75-4D-SH	Steel	1.575	1.500	10.75	UNF-2B 1/2"-20	1.339
D2.00-L14.72-4D-SH	Steel	1.575	2.000	14.72	UNF-2B 1/2"-20	1.811
D2.50-L18.74-4D-SH	Steel	1.575	2.500	18.74	UNF-2B 1/2"-20	2.283

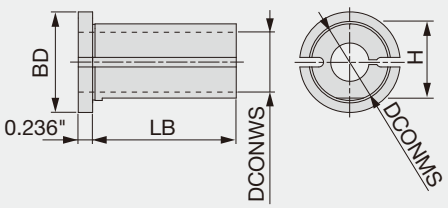
SPARE PARTS

Designation	Clamping screw	Wrench
D1.00-L7.2-4D-SH	SR M4X12DIN912	HW 3.0
D1.25-L8.74-4D-SH	SR M5X12 DIN912	HW 4.0
D1.50-L10.75-4D-SH	SRM6X16DIN912-12.9	HW 5.0
D2.00-L14.72-4D-SH	SRM6X16DIN912-12.9	HW 5.0
D2.50-L18.74-4D-SH	SRM6X16DIN912-12.9	HW 5.0

BOREMEISTER

RSL sleeve

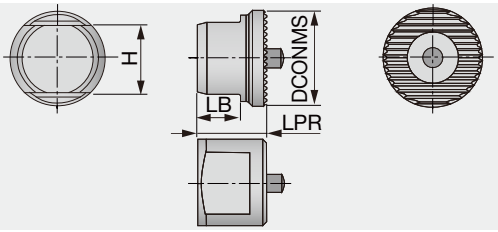
Split sleeve for anti-vibration bar



Inch	DCONWS	DCONMS	BD	LB	H
RSL-31.8-15.9-L66	0.625	1.250	1.654	2.362	1.210
RSL-31.8-19-L66	0.750	1.250	1.654	2.362	1.210
RSL-31.8-25.4-L66	1.000	1.250	1.654	2.362	1.210
RSL-38.1-15.9-L106	0.625	1.500	1.969	3.937	1.461
RSL-38.1-19-L106	0.750	1.500	1.969	3.937	1.461
RSL-38.1-25.4-L106	1.000	1.500	1.969	3.937	1.461
RSL-38.1-31.8-L106	1.250	1.500	1.969	3.937	1.461
RSL-50.8-19-L126	0.750	2.000	2.362	4.724	1.941
RSL-50.8-25.4-L126	1.000	2.000	2.362	4.724	1.941
RSL-50.8-31.8-L126	1.250	2.000	2.362	4.724	1.941
RSL-50.8-38.1-L126	1.500	2.000	2.362	4.724	1.941
RSL-63.5-31.8-L156	1.250	2.500	2.756	5.906	2.441
RSL-63.5-38.1-L156	1.500	2.500	2.756	5.906	2.441
RSL-63.5-50.8-L156	2.000	2.500	2.756	5.906	2.441

AVC-SET

Center height set up device

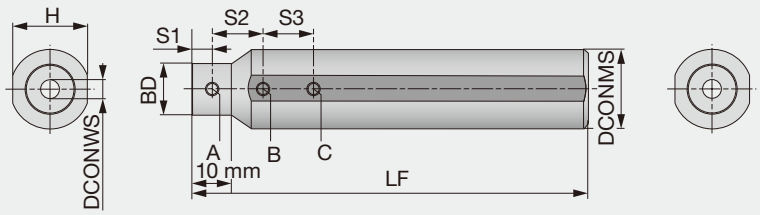


Inch	DCONMS	H	LPR	LB	Applicable shank
AVC-SET16-25	0.787	0.591	0.571	0.350	D/G.625, D/G.750, D1.00
AVC-SET32-60	1.142	0.630	0.689	0.450	D1.25, D1.50, D2.00, D2.50

STREAMJETBAR

BLM sleeve

Round shank sleeve for StreamJetBar-Mini series



Metric	DCONMS	DCONWS	BD	LF	H	S1	S2	S3
BLM159-04	15.875 (0.625")	4	15	100	15	5	15	15
BLM159-05	15.875 (0.625")	5	15	100	15	5	15	15
BLM159-06	15.875 (0.625")	6	15	100	15	5	20	20
BLM159-07	15.875 (0.625")	7	15	100	15	5	20	20
BLM16-04	16	4	15	100	15	5	15	15
BLM16-05	16	5	15	100	15	5	15	15
BLM16-06	16	6	15	100	15	5	20	20
BLM16-07	16	7	15	100	15	5	20	20
BLM19-04	19.05 (0.750")	4	18	100	18	5	15	15
BLM19-05	19.05 (0.750")	5	18	100	18	5	15	15
BLM19-06	19.05 (0.750")	6	18	100	18	5	20	20
BLM19-07	19.05 (0.750")	7	18	100	18	5	20	20
BLM20-04	20	4	13	100	19	5	15	15
BLM20-05	20	5	14	100	19	5	15	15
BLM20-06	20	6	15	100	19	5	20	20
BLM20-07	20	7	16	100	19	5	20	20
BLM22-04	22	4	13	125	21	5	15	15
BLM22-05	22	5	14	125	21	5	15	15
BLM22-06	22	6	15	125	21	5	20	20
BLM22-07	22	7	16	125	21	5	20	20
BLM25-04	25	4	13	125	24	5	15	15
BLM25-05	25	5	14	125	24	5	15	15
BLM25-06	25	6	15	125	24	5	20	20
BLM25-07	25	7	16	125	24	5	20	20
BLM254-04	25.4 (1.000")	4	13	125	24	5	15	15
BLM254-05	25.4 (1.000")	5	14	125	24	5	15	15
BLM254-06	25.4 (1.000")	6	15	125	24	5	20	20
BLM254-07	25.4 (1.000")	7	16	125	24	5	20	20

SPARE PARTS





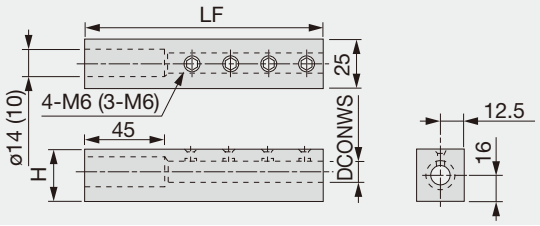

Designation	Clamping screw A	Clamping screw B, C	Wrench	Seal cap* (inner screw)
BLM159, 16...	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM19-04	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM19-05, 06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM20-04, 05	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM20-06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM22-...	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM25-04, 05	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM254-04, 05, 06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM254-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)

*Optional

STREAMJETBAR

BLS sleeve

Square shank sleeve for boring bars (regular length)



(Unit: mm)

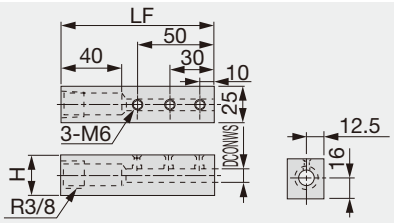
Metric	DCONWS	LF	H
BLS16-08	8	125	28
BLS16-10	10	125	28
BLS16-12	12	125	28

SPARE PARTS

Designation	Wrench
BLS16-...	P-3

BLS-C sleeve

Square shank sleeve for boring bars (short type)



(Unit: mm)

Metric	DCONWS	LF	H
BLS16-08C	8	100	28
BLS16-10C	10	100	28
BLS16-12C	12	100	28

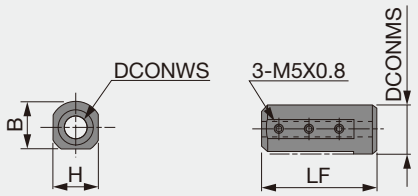
SPARE PARTS

Designation	Wrench
BLS16-**C	P-3

STREAMJETBAR

BLM sleeve

Round shank sleeve for boring bars



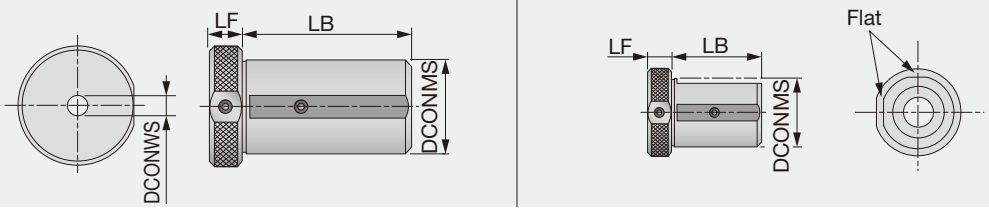
Metric	DCONWS	DCONMS	LF	H	B
BLM19-08	8	19.05	100	18	18
BLM20-08	8	20	100	18	19
BLM22-08	8	22	125	21	21
BLM254-08	8	25.4	125	24	24
BLM25-08C	8	25	55	23	24
BLM25-10C	10	25	55	23	24
BLM25-12C	12	25	55	23	24

SPARE PARTS

Designation	Wrench
BLM...	P-2.5

BLC sleeve

Round shank sleeve for boring bars



Metric	DCONWS	LB	LF	DCONMS
BLC40-8	8	73	13	40
BLC40-10	10	73	13	40
BLC40-12	12	73	13	40
BLC40-16	16	73	13	40
BLC32-8C	8	45	20	32
BLC32-10C	10	45	20	32
BLC32-12C	12	45	20	32
BLC40-8C	8	55	13	40
BLC40-10C	10	55	13	40
BLC40-12C	12	55	13	40
BLC40-16C	16	55	13	40

SPARE PARTS

Designation	Wrench
BLC40-8	P-3
BLC40-1...	P-4
BLC32-8C	P-3
BLC32-1*C	P-4
BLC40-8C	P-3
BLC40-1*C	P-4

MINIFORCE TURN

STANDARD CUTTING CONDITIONS

FOR INTERNAL TURNING

ISO	Workpiece material	Grade		Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
		First choice	Second choice			
P	Low carbon steel / Low alloy steel	T9215	-	394 - 1148	0.012 - 0.079	0.003 - 0.012
		T9225	-	328 - 984	0.012 - 0.079	0.003 - 0.012
		AH8015	-	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	NS9530	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	262 - 984	0.012 - 0.079	0.003 - 0.012
	Carbon steel / Alloy steel	T9215	-	262 - 1148	0.012 - 0.079	0.003 - 0.012
		T9225	-	262 - 984	0.012 - 0.079	0.003 - 0.012
		AH8015	-	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	NS9530	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	262 - 984	0.012 - 0.079	0.003 - 0.012
M	Stainless steel (Austenitic)	AH8015	-	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	T9215	164 - 656	0.012 - 0.079	0.003 - 0.012
	Stainless steel (Martensitic and ferritic)	AH8015	-	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	T9215	164 - 656	0.012 - 0.079	0.003 - 0.012
	Stainless steel (Precipitation hardening)	AH8015	-	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 492	0.012 - 0.079	0.003 - 0.012
		-	T9215	164 - 656	0.012 - 0.079	0.003 - 0.012
K	Gray cast iron	T9215	-	328 - 1148	0.012 - 0.079	0.003 - 0.012
		T9225	-	328 - 1148	0.012 - 0.079	0.003 - 0.012
		-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	NS9530	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	262 - 984	0.012 - 0.079	0.003 - 0.012
	Ductile cast iron	T9215	-	328 - 1148	0.012 - 0.079	0.003 - 0.012
		T9225	-	328 - 1148	0.012 - 0.079	0.003 - 0.012
		-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	AH725	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	NS9530	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	262 - 984	0.012 - 0.079	0.003 - 0.012
N	Aluminum alloys	KS05F	-	328 - 984	0.012 - 0.079	0.003 - 0.012
	Copper alloys	KS05F	-	328 - 984	0.012 - 0.079	0.003 - 0.012
S	Titanium alloys	AH8015	-	66 - 262	0.012 - 0.079	0.003 - 0.012
	Nickel-based alloys	AH8015	-	66 - 262	0.012 - 0.079	0.003 - 0.012
H	Hardened steel	BXA20	-	164 - 722	0.005 - 0.031	0.004 - 0.012
		-	BXA10	164 - 722	0.005 - 0.031	0.004 - 0.012

Reference pages: A/E-SCLXR/L → D025, S-SCLXR/L-H → D026
A/E-SWLXR/L → D081, S-SWLXR/L-H → D082
A/E-SDXXR/L → D040, A/E-SDZXR/L → D041

TURNTEC

STANDARD CUTTING CONDITIONS

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.031	RE : 0.047	RE : 0.031	RE : 0.047
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.195 0.020 - .086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)			Feed: *f* (ipr)		
					RE : 0.031	RE : 0.047	RE : 0.063	RE : 0.031	RE : 0 .047	RE : 0.063
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.197 0.020 - .126	0.031 - 0.236 .031 - .126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - .126	0.031 - 0.236 .031 - .126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TWR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		MDR	T9115	330 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		MDR	AH725	160 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		TWR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-

LNMX2410

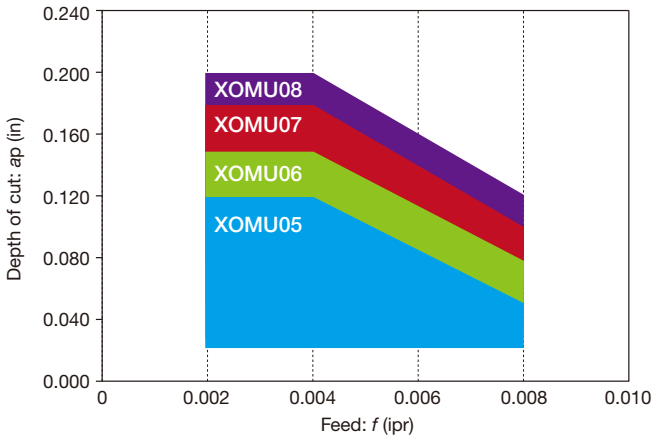
ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.063	RE : 0.094	RE : 0.063	RE : 0.094
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043

Reference pages: S-TLANR/L → D050

TUNGBORE MINI

STANDARD CUTTING CONDITIONS

DMIN	Description Insert	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Carbon steel, Alloy steel	Cutting speed: *Vc* (sfm) Stainless steel
ø10 mm (ø0.394")	XOMU05X204-PS	0.020 - 0.118	0.002 - 0.008	164 - 591	164 - 525
ø12 mm (ø0.472")	XOMU06H204-PS	0.020 - 0.138			
ø14 mm (ø0.551")	XOMU07H304-PS	0.020 - 0.177			
ø16 mm (ø0.630")	XOMU08T304-PS	0.020 - 0.197			



Reference pages: A/E-SXUOR/L → D086, D087

Threading Tool

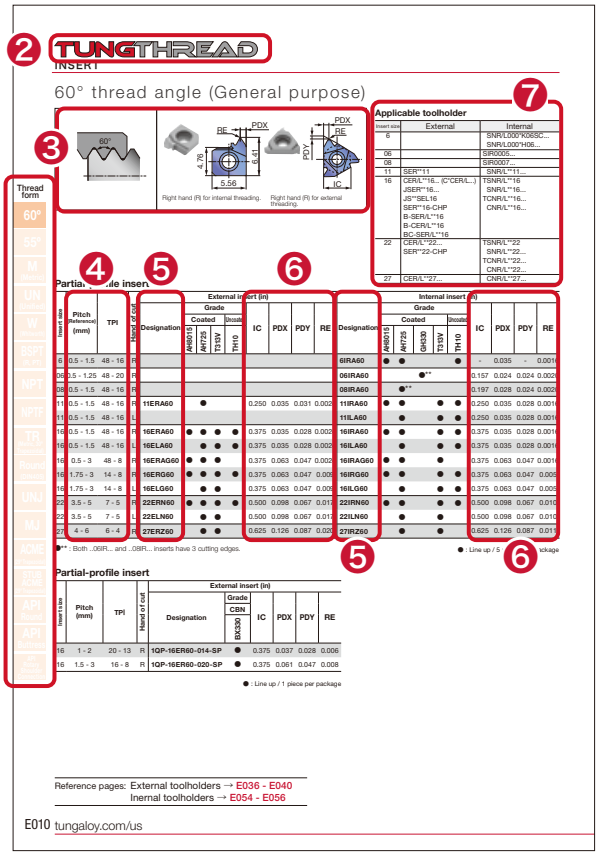


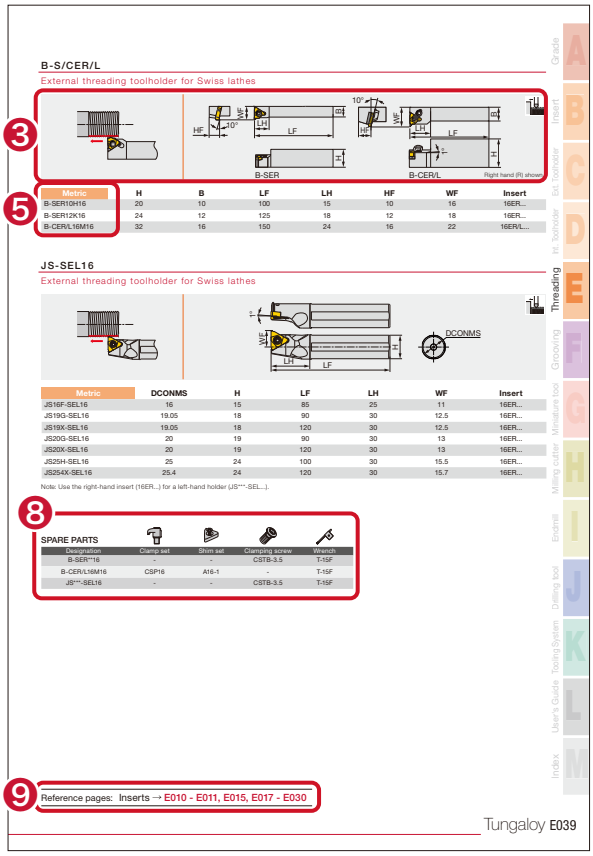
Threading Tool - Content structure

- Products are listed by product series and thread to be consistent with wording throughout.
- Inserts and toolholders in the catalog are our standard items.

Select the Thread form

Method ① Select the screw shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❻). Applicable toolholders are shown in (❼).
Method ② Select the series name on E003 and check the details on the product page.
Method ③ Select an item from Quick Guide on E004 - E007.





❶ : Screw shape
❷ : Series name
❸ : Drawing of thread, threading insert, threading toolholder
❹ : Applicable pitch and the number of threads
❺ : Designation (for external, for internal)
❻ : Dimension table (conforming to ISO13399)
❼ : Applicable toolholder
❽ : Spare parts
❾ : Reference page

When ordering
- Please specify the designation and quantity for threading toolholders.
  e.g. **TSNR0020R22 ...** 1 (one threading toolholder per package)
- Please specify the designation, grade, and quantity for threading inserts.
  e.g. **16IR175ISO AH725 ...** 5 (five threading inserts per package)

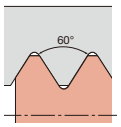
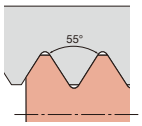
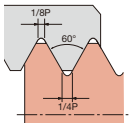
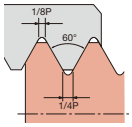
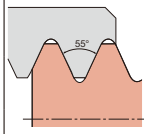
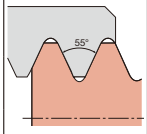
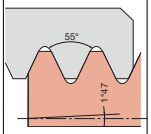
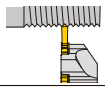
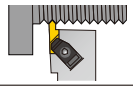
Main products

Thread form

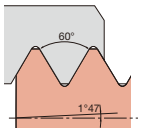
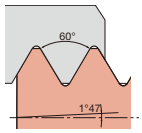
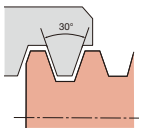
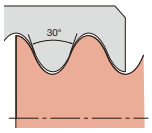
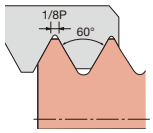
60° E010
55° E015
M (Metric) E017
UN (Unified) E021
W (Whitworth) E023
BSPT (R, PT) E024
NPT E025
NPTF E026
TR (Metric, 30° Trapezoidal) E027
Round (DIN405) E027
UNJ E028
MJ E028
ACME (29° Trapezoidal) E029
STUB ACME (29° Trapezoidal) E030
API Round E030
API Buttress E032
API Rotary Shoulder Connection E035

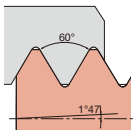
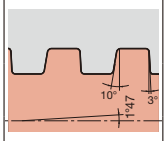
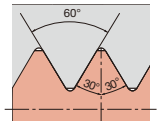
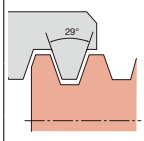
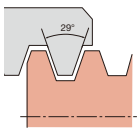
		Inch	Metric
	**TUNGTHREAD** **Lay down insert, toolholder** Standard items cover a wide variety of threading inserts. Standard tool series with double-clamp system for excellent insert stability in machining API-standard threads.	E004 -, E010 - E065	✓	✓
	**TETRAMINICUT** Standard tool with 4 corners for threading on Swiss lathes. In small diameter threading it is less likely that interference will occur with the center on general NC lathes.	E004 -, E008	✓	✓
	**DUOJUSTCUT** Standard tool suitable for all types of threading on Swiss lathes. The incomplete thread part from the workpiece face to the thread groove can be the shortest thanks to the excellent accessibility to the workpiece face.	E004 -, E009	✓	
	**J-SERIES** Tool series with 3-cornered inserts. Subselection for threading on Swiss lathes. Standard tool also suitable for radial Swiss lathes.	E004, E013 E016, E048	✓	✓
	**TUNGT-CLAMP** Tool with high clamp rigidity that firmly holds the insert. Grooving insert and threading insert can be used with the same toolholder.	E004 -, E014 E064 -, E069	✓	
	**On edge insert, toolholder** ACME and STUB ACME inserts can be used for the range of 16 to 3TPI with 2 types of toolholders. The special full-profile insert realizes both the fine adjustment of thread height and the minimum burr on the crest.	E004 -, E029 - E052, E066	✓	✓
	**Chaser** Threading tool with multiple cutting edges for highly efficient machining of API-standard round, buttress, and NPT.	E005 -, E026 E031 -, E053 E067	✓	✓
	**BOREMEISTER** Boring heads for deep hole threading. All 16-size inserts of TungThread Internal series are applicable, allowing for a large variety of threads type.	E056 -	✓	✓
	**TINYMINITURN** Internal threading tool suitable for a minimum machining diameter ø4. All tools have oil holes that can supply coolant to the cutting edge.	E060 -, E069		✓
	**Other tool** TT type	E004 -, E014 E016, E053, E067	✓	✓

Applicable tool for each external thread type

Applicable tool for each external thread type			General purpose, Machine parts for machine and automotive parts				For valve and pump parts; pneumatic, hydraulic, oil and gas pipes		
Thread types			60°	55°	ISO metric threads, coarse and fine	Unified national threads series, 60° inch threads	- British standard whitworth - British standard fine	- British standard parallel pipe - British standard pipe - Parallel pipe thread (JIS B 9912) - 55° inch thread	- JIS tapered pipe thread - British standard pipe taper
Thread symbols			M, UN, UNC, UNF, UNEF, UNS	G, BSP, PF, BSPP	M	UN, UNR, UNC, UNRC, UNF, UNRF, UNEF, UNREF, UNS, UNRS	BSW, BSF, W	G, BSP, PF, BSPP	R, PT, BSPT
Thread form									
Tool type	Full profile With	Full profile Without							
ST type  E036	○		—	—	0.5 ~ 6 mm E017	32 ~ 5TPI E021	28 ~ 5TPI E023	28 ~ 5TPI E023	28 ~ 11TPI E024
		○	0.5 ~ 6 mm 48 ~ 4TPI E010	0.5 ~ 5 mm 48 ~ 5TPI E015	—	—	—	—	—
TETRAMCUT  E041	○		—	—	0.5 ~ 1.5 mm E020	—	—	—	—
		○	0.4 ~ 3 mm 64 ~ 8TPI E012	—	—	—	—	—	—
DUOJCUT  E047		○	0.2 ~ 1.5 mm 127 ~ 16TPI E012	—	—	—	—	—	—
J-SERIES  E048		○	0.5 ~ 1 mm 48 ~ 25TPI E013	0.5 ~ 1 mm 48 ~ 25TPI E016	—	—	—	—	—
TUNGT-CLAMP  E050		○	1.27 ~ 4.23 mm 20 ~ 6TPI E014	—	—	—	—	—	—
TT type  E053		○	~ 3 mm ~ 8TPI E014	~ 3 mm ~ 8TPI E016	—	—	—	—	—

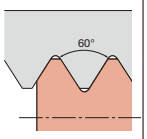
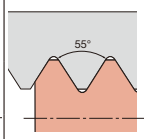
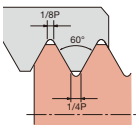
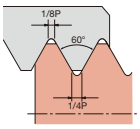
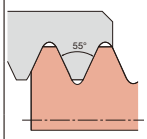
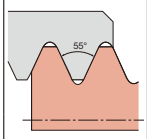
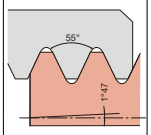
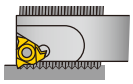
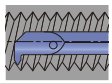
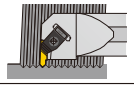
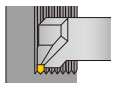
Please see page E*** for the product details.

Applicable tool for each external thread type		For valve and pump parts; pneumatic, hydraulic, oil and gas pipes		Machine parts		Aerospace threads
Thread types		National pipe taper thread	National pipe taper fuel thread	- TR - 30° trapezoidal - ISO trapezoidal	Knuckle thread	Unified inch screw threads
Thread symbols		NPT	NPTF	TR	Rd	UNJ, UNJC, UNJF, UNUEF, UNJS
Thread form						
Tool type	Full profile					
	With / Without					
ST type  E036	○	27 ~ 8TPI E025	27 ~ 8TPI E026	1.5 ~ 6 mm (0.059" - 0.236") E027	8TPI, 6TPI E027	32 ~ 8TPI E028
Chaser  E053	○	11.5TPI, 8TPI E026	—	—	—	—

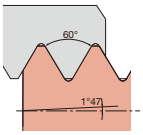
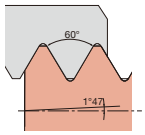
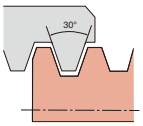
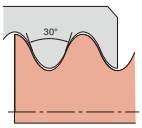
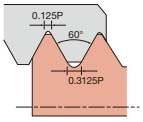
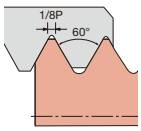
Applicable tool for each external thread type		Oil and gas fields and OCTG drill pipes							Machine parts, Pipe	
Thread types		- API round - API casing - Short casing - API tubing	API buttress casing	- API rotary shoulder connection for drill pipe and collar connections					- ACME - 29° trapezoidal thread	- STUB ACME - 29° trapezoidal thread
				V-0.038R 2TPF	V-0.038R 3TPF	V-0.040R 3TPF	V-0.050R 2TPF	V-0.050R 3TPF		
Thread symbols		CSG, LCSG, TBG, UPTBG	BCSG	NC	NC	REG	REG, FH	REG	—	—
Thread form										
Tool type	Full profile									
	With / Without									
ST type  E036	○	10TPI, 8TPI E030	5TPI (0.75TPF) E032	—	—	—	—	—	12 ~ 5TPI E029	—
Chaser  E053	○	10TPI, 8TPI E031	5TPI (0.75TPF) E033	—	—	—	—	—	—	—
Other  E051	○	10TPI, 8TPI E031	5TPI (0.75TPF) 5TPI (1TPF) E032	4TPI (2TPF) 4TPI (3TPF) 5TPI (3TPF) E035					16 ~ 3TPI E029	16 ~ 3TPI E030

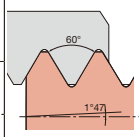
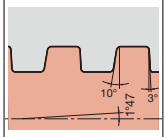
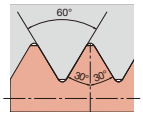
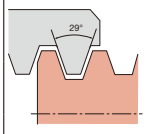
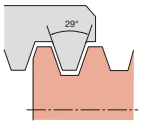
Please see page E*** for the product details.

Applicable tool for each internal thread type

Applicable tool for each external thread type			General purpose, Machine parts for machine and automotive parts				For valve and pump parts; pneumatic, hydraulic, oil and gas pipes		
Thread types			60°	55°	ISO metric threads, coarse and fine	Unified national threads series, 60° inch threads	- British standard whitworth - British standard fine	- British standard parallel pipe - British standard pipe - Parallel pipe thread (JIS B 9912) - 55° inch thread	- JIS tapered pipe thread - British standard pipe taper
Thread symbols			M, UN, UNC, UNF, UNEF, UNS	G, BSP, PF, BSPP	M	UN, UNR, UNC, UNRC, UNF, UNRF, UNEF, UNREF, UNS, UNRS	BSW, BSF, W	G, BSP, PF, BSPP	R, PT, BSPT
Thread form									
Tool type	Full profile	With							
		Without							
ST type  E054	○		—	—	0.5 ~ 6 mm E017	32 ~ 5TPI E021	28 ~ 5TPI E023	28 ~ 5TPI E023	19 ~ 11TPI E024
		○	0.5 ~ 6 mm (0.020" - 0.250") 48 ~ 4TPI E010	0.020" - 0.200" 48 ~ 5TPI E015	—	—	—	—	—
TINYMTURN  E060		○	0.5 ~ 1.5 mm (0.021" - 0.0625") 48 ~ 16TPI E060	—	—	—	—	—	—
TUNGT-CLAMP  E064		○	1.27 ~ 4.23 mm 12 ~ 5TPI E014	—	—	—	—	—	—
TT type  E066		○	~ 3 mm (~ 0.125") ~ 8TPI E014	~ 0.125" ~ 8TPI E016	—	—	—	—	—

Please see page E*** for the product details.

Applicable tool for each external thread type		For valve and pump parts; pneumatic, hydraulic, oil and gas pipes		Machine parts		Aerospace threads	
Thread types		National pipe taper thread	National pipe taper fuel thread	- TR - 30° trapezoidal - ISO trapezoidal	Knuckle thread	Aerospace standard MJ threads	Unified inch screw threads
Thread symbols		NPT	NPTF	TR	Rd	MJ	UNJ, UNJC, UNJF, UNUEF, UNJS
Thread form							
Tool type	Full profile With / Without						
ST type E054	○	27 ~ 8TPI E025	14 ~ 8TPI E026	1.5 ~ 5 mm (0.059" - 0.197") E027	6TPI E027	0.039" E028	—
Chaser E066	○	11.5TPI, 8TPI E026	—	—	—	—	—

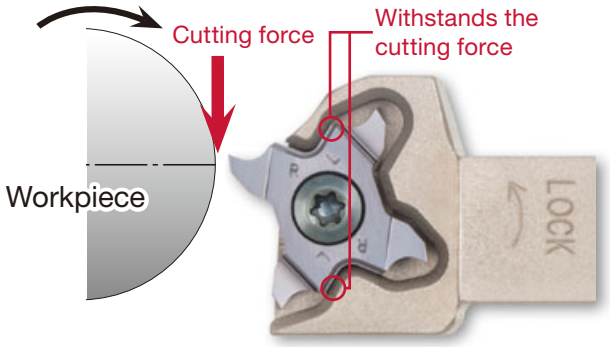
Applicable tool for each external thread type		Oil and gas fields and OCTG drill pipes						Machine parts, Pipe	
Thread types		- API round - API casing - API tubing - Short casing	API buttress casing	- API rotary shoulder connection for drill pipe and collar connections				ACME 29° trapezoidal thread	STUB ACME 29° trapezoidal thread
				V-0.038R 2TPF	V-0.038R 3TPF	V-0.040R 3TPF	V-0.050R 2TPF / V-0.050R 3TPF		
Thread symbols		CSG, LCSG, TBG, UPTBG	BCSG	NC	NC	REG	REG, FH / REG	—	—
Thread form									
Tool type	Full profile With / Without								
ST type E054	○	10TPI, 8TPI E030	5TPI (0.75TPF) E032	—	—	—	— / —	12 ~ 5TPI E029	—
Chaser E066	○	10TPI, 8TPI E031	5TPI (0.75TPF) E033	—	—	—	— / —	—	—
Other E065	○	10TPI, 8TPI E031	5TPI (0.75TPF) 5TPI (1TPF) E032	4TPI (2TPF) 4TPI (3TPF) 5TPI (3TPF) E035				—	—

Please see page E*** for the product details.



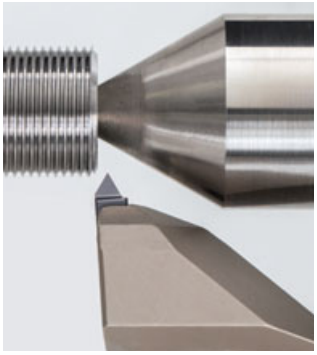
Unique clamping system

The unique pocket design provides accurate indexing repeatability of the cutting edge height.



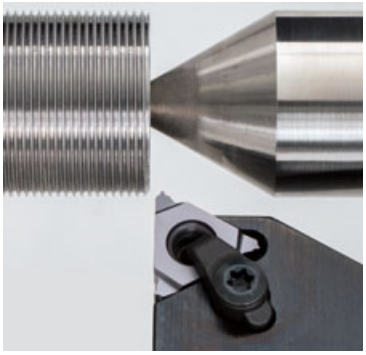
No tool interference with the lathe center when machining small parts

TETRAMINI CUT
M16x1



Insert: TCT18R-60N-020

Conventional
M24x1



Insert: 16ER10ISO

Reference pages: Inserts → E012, External toolholders → E041 - E044, Standard cutting conditions → E068

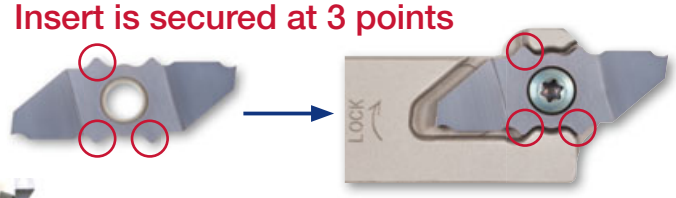
DUOJCUT UST



Unique highly rigid clamping system

The unused cutting edge is always protected due to the innovative clamping system.
Even if the first cutting edge is chipped, the other unused cutting edge can be used because the insert is clamped in the center.

Insert is secured at 3 points



Excellent accessibility to the workpiece face

Utilizing various tools minimizes the incomplete thread part.



	Type A	Type B	Type N
Right hand	a b a > b	a b a < b	a b a = b
Left hand	a b a > b	a b a < b	a b a = b



DUOJCUT UST

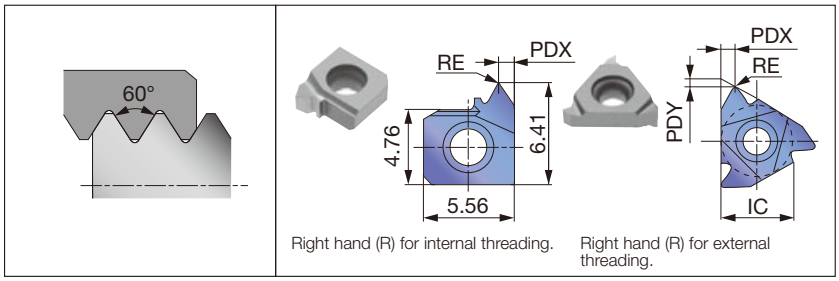
Insert designation	Cutting edge geometry (mm)	PDX mm (in)	Pitch: mm (in) 0.2 (0.008) / 0.25 (0.010) / 0.35 (0.014) / 0.4 (0.016) / 0.5 (0.020) / 0.6 (0.024) / 0.8 (0.031) / 1 (0.039) / 1.25 (0.049) / 1.5 (0.059)
JXTG12FR-60A-000	0.05 (flat)	0.25 (0.010)	Applicable area
JXTG12FL-60A-000			
JXTG12FR-60B-000	0.05 (flat)	2.25 (0.089)	
JXTG12FL-60B-000			
JXTG12FR-60A-005	R0.05	0.6 (0.024)	Applicable area
JXTG12FL-60A-005			
JXTG12FR-60B-005	R0.05	1.9 (0.075)	
JXTG12FL-60B-005			
JXTG12FR-60N-010	R0.1	1.25 (0.049)	Applicable area
JXTG12FL-60N-010			

127 / 72 / 52 / 32 / 16

Threads per inch (TPI)

Reference pages: Inserts → E012, External toolholders → E047 - E048,
Standard cutting conditions → E068

60° thread angle (General purpose)



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
06		SIR0005...
08		SIR0007...
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Partial-profile insert

Insert size	Pitch (Reference) (mm)	TPI	Hand of cut	External insert (in)									Internal insert (in)								
				Designation	Grade				IC	PDX	PDY	RE	Designation	Grade					IC	PDX	PDY	RE
					Coated			Uncoated						Coated				Uncoated				
					AH8015	AH725	T313V	TH10						AH8015	AH725	GH330	T313V	TH10				
6	0.5 - 1.5	48 - 16	R										6IRA60	●	●			●	-	0.035	-	0.0016
06	0.5 - 1.25	48 - 20	R										06IRA60			●**			0.157	0.024	0.024	0.0020
08	0.5 - 1.5	48 - 16	R										08IRA60		●**				0.197	0.028	0.024	0.0020
11	0.5 - 1.5	48 - 16	R	11ERA60		●			0.250	0.035	0.031	0.0024	11IRA60	●	●		●	●	0.250	0.035	0.028	0.0016
11	0.5 - 1.5	48 - 16	L										11ILA60		●		●	●	0.250	0.035	0.028	0.0016
16	0.5 - 1.5	48 - 16	R	16ERA60	●	●	●	●	0.375	0.035	0.028	0.0024	16IRA60	●	●		●	●	0.375	0.035	0.028	0.0016
16	0.5 - 1.5	48 - 16	L	16ELA60		●	●	●	0.375	0.035	0.028	0.0024	16ILA60		●		●	●	0.375	0.035	0.028	0.0016
16	0.5 - 3	48 - 8	R	16ERAG60	●	●	●		0.375	0.063	0.047	0.0024	16IRAG60	●	●		●		0.375	0.063	0.047	0.0016
16	1.75 - 3	14 - 8	R	16ERG60	●	●	●	●	0.375	0.063	0.047	0.009	16IRG60	●	●		●	●	0.375	0.063	0.047	0.005
16	1.75 - 3	14 - 8	L	16ELG60		●	●		0.375	0.063	0.047	0.009	16ILG60		●		●	●	0.375	0.063	0.047	0.005
22	3.5 - 5	7 - 5	R	22ERN60	●	●	●	●	0.500	0.098	0.067	0.017	22IRN60	●	●		●	●	0.500	0.098	0.067	0.010
22	3.5 - 5	7 - 5	L	22ELN60		●	●		0.500	0.098	0.067	0.017	22ILN60		●		●		0.500	0.098	0.067	0.010
27	4 - 6	6 - 4	R	27ERZ60		●	●		0.625	0.126	0.087	0.020	27IRZ60		●		●		0.625	0.126	0.087	0.011

●** : Both ..06IR... and ..08IR... inserts have 3 cutting edges.

● : Line up / 5 pieces per package

Partial-profile insert

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in)						
				Designation	Grade	IC	PDX	PDY	RE
					CBN				
					BX330				
16	1 - 2	20 - 13	R	1QP-16ER60-014-SP	●	0.375	0.037	0.028	0.006
16	1.5 - 3	16 - 8	R	1QP-16ER60-020-SP	●	0.375	0.061	0.047	0.008

● : Line up / 1 piece per package

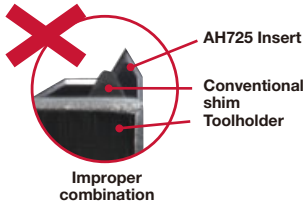
Reference pages: External toolholders → E036 - E040
Inernal toolholders → E054 - E056

Partial-profile insert with chipbreaker

Insert size	Pitch (Reference) (mm)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Cermet						Coated		Cermet				
					AH8015	AH725	NS9530						AH8015	AH725	NS9530				
11	0.5 - 1.5	48 - 16	R									11IRA60-B		●		0.250	0.035	0.028	0.0016
11	0.5 - 1.5	48 - 16	R									11IRA60-M	●		●	0.250	0.035	0.028	0.0016
16	0.5 - 1.5	48 - 16	R	16ERA60-B		●*		0.375	0.035	0.031	0.0020	16IRA60-B		●*		0.375	0.035	0.031	0.0020
16	0.5 - 1.5	48 - 16	R	16ERA60-M	●		●	0.375	0.035	0.028	0.0024	16IRA60-M	●		●	0.375	0.035	0.028	0.0016
16	0.5 - 3	48 - 8	R	16ERAG60-B		●*		0.375	0.067	0.047	0.0031	16IRAG60-B		●*		0.375	0.067	0.047	0.0020
16	0.5 - 3	48 - 8	R	16ERAG60-M	●	●	●	0.375	0.063	0.047	0.0024	16IRAG60-M	●	●	●	0.375	0.063	0.047	0.0016
16	1.75 - 3	14 - 8	R	16ERG60-B		●*		0.375	0.067	0.047	0.010	16IRG60-B		●*		0.375	0.067	0.047	0.004
16	1.75 - 3	14 - 8	R	16ERG60-M	●		●	0.375	0.063	0.047	0.009	16IRG60-M	●		●	0.375	0.063	0.047	0.006
22	3.5 - 5	7 - 5	R	22ERN60-B		●		0.500	0.098	0.067	0.013	22IRN60-B		●		0.500	0.098	0.067	0.007

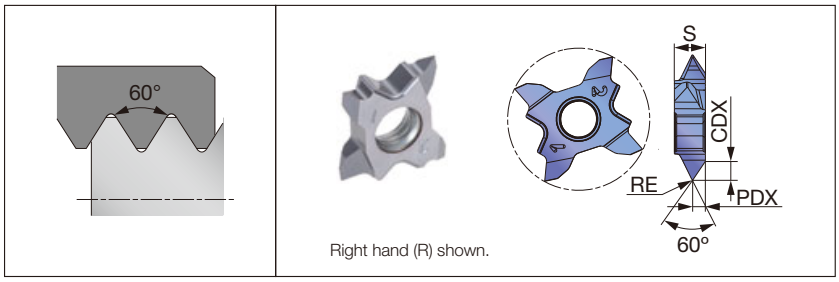
● : Line up / 5 pieces per package

- ●* : The cutting edge position needs adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- requires the use of dedicated shim.
  When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
  Please refer to the page E070.



Reference pages: External toolholders → E036 - E040
Inernal toolholders → E054 - E056

60° thread angle (General purpose)



Applicable toolholder

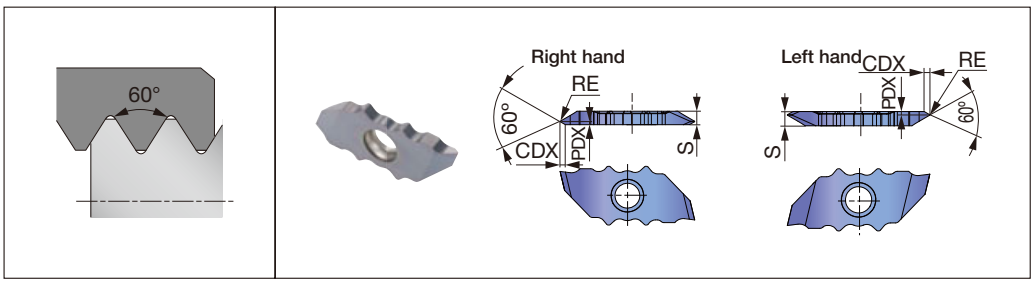
External
STCR/L**-18
STCR/L**18-CHP
JS**-STCL18
C*STCFL**18-CHP
C*STCR/L**18-CHP
QC**STCR/L18 (-Y)
QC**STCR/L18 (-Y)-CHP

Partial-profile insert

Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade Coated SH725	Grade Coated AH725	PDX	CDX	RE	S
0.4 - 1	25 - 64	R	**TCT18FR-60A-005**	●		0.024	0.039	0.0020	0.157
1 - 2	25 - 12	R	**TCT18FR-60A-010**	●		0.039	0.064	0.004	0.157
0.8 - 3	8 - 32	R/L	**TCT18R/L-60N-010**		●	0.063	0.105	0.004	0.157
1.5 - 3	8 - 16	R/L	**TCT18R/L-60N-020**		●	0.063	0.101	0.008	0.157

● : Line up / 5 pieces per package

60° thread angle (General purpose)



Applicable toolholder

External
JSXXR/L**09
JSXXR/L**09-CHP
JS**-SXXL09

Partial-profile insert

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade Coated SH725 R	Grade Coated SH725 L	PDX	CDX	RE	S
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60A-000**	●	●	0.010	0.016	0.0020 max flat	0.098
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60B-000**	●	●	0.089	0.016	0.0020 max flat	0.098
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60A-005**	●	●	0.024	0.039	0.0020	0.098
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60B-005**	●	●	0.075	0.039	0.0020	0.098
12	1 - 1.5	16 - 25	R/L	**JXTG12FR/L-60N-010**	●	●	0.049	0.081	0.004	0.098

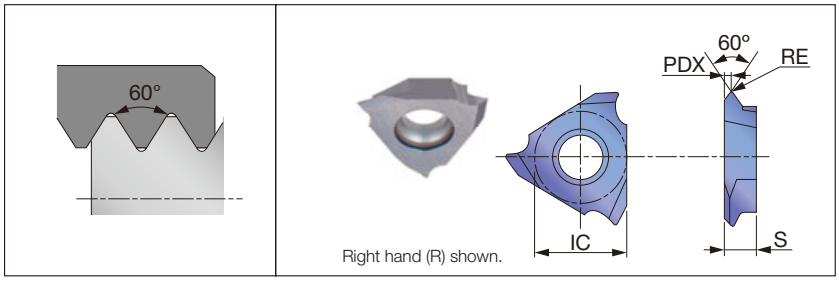
● : Line up / 5 pieces per package

	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

Thread form
60°
55°
M (Metric)
UN (Unified)
W (Whitworth)
BSPT (R, PT)
NPT
NPTF
TR (Metric, 30° Trapezoidal)
Round (DIN405)
UNJ
MJ
ACME (29° Trapezoidal)
STUB ACME (29° Trapezoidal)
API Round
API Buttress
API Rotary Shoulder Connection

Reference pages: TetraMini-Cut : External toolholders → E041 - E044
DuoJust-cut : External toolholders → E047 - E048

60° thread angle (General purpose)



Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch (mm)	TPI	Hand of cut	Designation	External insert (in)								IC	PDX	S	RE
				Grade											
				Coated						Cermet		Uncoated			
				SH725		J740				NS9530		TH10			
				R	L	R	L			R	L	R	L				
0.5 - 1	25 - 48	R/L	**JTTR3005F**	●	●	●				●		●		0.375	0.024	0.125	0.0020
0.5 - 1	25 - 48	R/L	**JTTL3010F**	●	●	●				●		●		0.375	0.043	0.125	0.004

● : Line up / 10 pieces per package

J-SERIES
INSERT

60° thread angle (General purpose)



Applicable toolholder

External
JSXBR**K8
JSXBR**K8-C

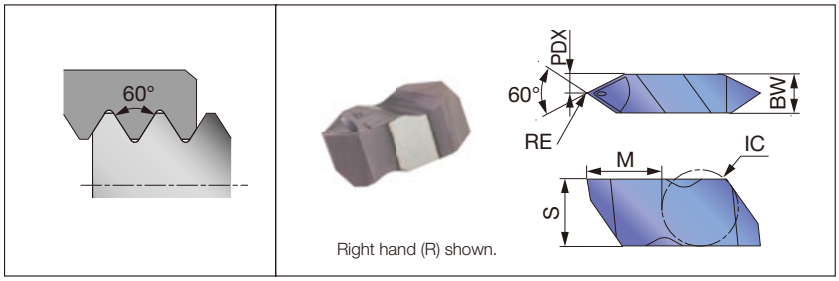
Partial-profile insert

Pitch (mm)	TPI	Hand of cut	Designation	External insert (in)					
				Grade					
				Coated	Uncoated				
				J740	TH10	IC	S	RE	
0.5 - 1	25 - 48	R	**JXT1R6000F**	●	●	0.315	0.156	0.0012	
0.5 - 1	25 - 48	R	**JXT2R6000F**	●	●	0.315	0.156	0.0012	

● : Line up / 10 pieces per package

Reference pages: J-Series : External toolholders → E048 - E049

60° thread angle (General purpose)



Applicable toolholder

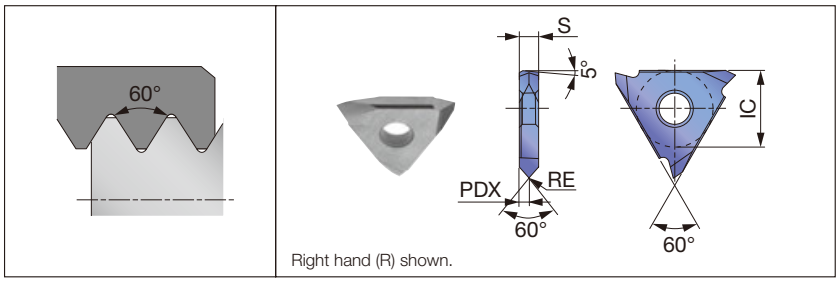
External	Internal
FLASR/L-1616M3	A**M-FLER/L3
FLSR/L-**M3	HS**-FLER3W

Partial-profile insert for external and internal threads

TPI	Hand of cut	External Pitch (mm)	Internal Pitch (mm)	Designation	Grade Coated AH725	IC (in)	PDX (in)	BW (in)	RE (in)	S (in)	M (in)
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	**FLT-3R/L-HCB**	●	0.375	0.098	0.195	0.007	0.344	0.400
11 - 20	R/L	2.31 - 4.23	3.175 - 5.08	**FLT-3R/LC-HCB**	●	0.375	0.098	0.195	0.014	0.344	0.400
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	**FLT-3R/L-CB**	●	0.375	0.098	0.195	0.007	0.344	0.400

● : Line up / 10 pieces per package

TT type / 60° thread angle (General purpose)



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

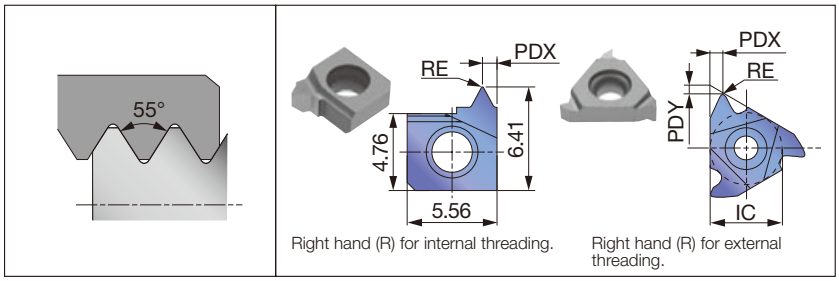
Partial-profile insert for external and internal threads

Pitch (mm)	TPI	Hand of cut	Designation	Grade Cermet NS9530	Grade Uncoated TH10	IC (in)	PDX (in)	S (in)	RE (in)
≤ 3	≥ 8	R	**TTR42M-005**	●	●	0.500	0.063	0.126	0.0020
≤ 3	≥ 8	L	**TTL42M-005**	●	●	0.500	0.063	0.126	0.0020

● : Line up / 5 pieces per package

Reference pages: TungT-Clamp : External toolholders → E050,
Internal toolholders → E064 - E065
TT type : External toolholders → E053
Internal toolholders → E067

55° thread angle (General purpose)



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
06		SIR0005...
08		SIR0007...
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Partial-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated GH330	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	0.020 - 0.059	48 - 16	R										6IRA55		●			●	-	0.035	-	0.0028
06	0.020 - 0.049	48 - 20	R										06IRA55			●**			0.157	0.020	0.020	0.0031
08	0.020 - 0.059	48 - 16	R										08IRA55		●**				0.197	0.028	0.024	0.0031
11	0.020 - 0.059	48 - 16	R	11ERA55		●			0.250	0.035	0.031	0.0020	11IRA55	●	●		●	●	0.250	0.035	0.028	0.0028
16	0.020 - 0.059	48 - 16	R	16ERA55		●	●	●	0.375	0.035	0.028	0.0028	16IRA55		●		●	●	0.375	0.035	0.028	0.0028
16	0.020 - 0.118	48 - 8	R	16ERAG55		●			0.375	0.067	0.047	0.0028	16IRAG55		●				0.375	0.067	0.047	0.0028
16	0.069 - 0.118	14 - 8	R	16ERG55	●	●	●	●	0.375	0.063	0.047	0.010	16IRG55	●	●		●	●	0.375	0.067	0.047	0.010
22	0.138 - 0.197	7 - 5	R	22ERN55		●	●	●	0.500	0.098	0.067	0.020	22IRN55		●		●	●	0.500	0.098	0.067	0.020

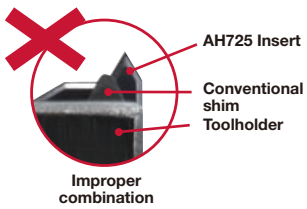
● : Line up / 5 pieces per package

Partial-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	IC	PDX	PDY	RE
16	0.020 - 0.118	48 - 16	R	16ERAG55-B	●*	0.375	0.067	0.047	0.0028	16IRAG55-B	●*	0.375	0.067	0.047	0.0020
16	0.069 - 0.118	14 - 8	R	16ERG55-B	●*	0.375	0.067	0.047	0.009	16IRG55-B	●*	0.375	0.067	0.047	0.008

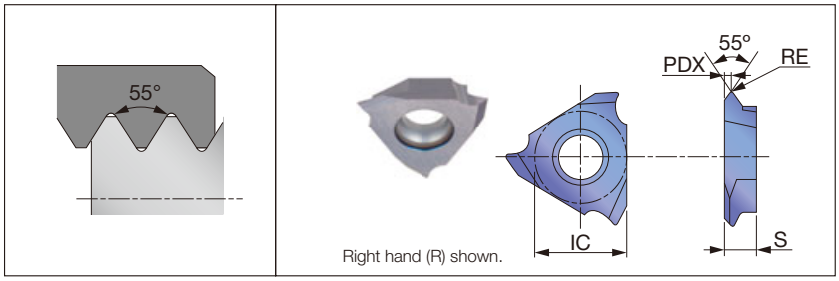
● : Line up / 5 pieces per package

- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- ●** : Both ..06IR... and ..08IR... inserts have 3 cutting edges.
- requires the use of dedicated shim.
  When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
  Please refer to the page E070.



Reference pages: External toolholders → E036 - E040
Inernal toolholders → E054 - E056

55° thread angle (General purpose)



Applicable toolholder

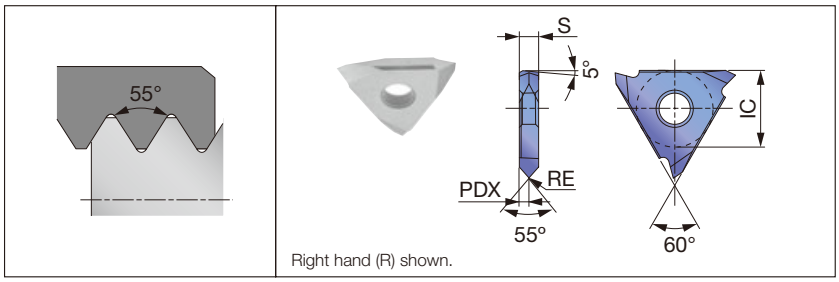
External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch (in)	TPI	Hand of cut	Designation	External insert (in)							
				Grade							
				Coated							
				SH725		J740		IC	PDX	S	RE
				R	L	R	L				
0.020 - 0.039	25 - 48	R/L	**JTTR/L3005F-55**	●		●		0.375	0.024	0.125	0.0020

● : Line up / 5 pieces per package

TT type / 55° thread angle (General purpose)



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

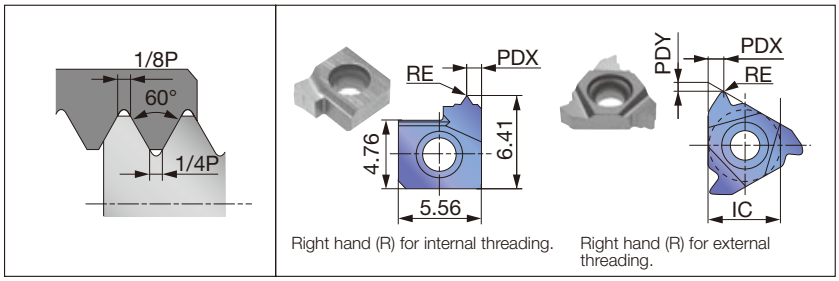
Partial-profile insert for external and internal threads

Pitch (mm)	TPI	Hand of cut	Designation	Grade		IC (in)	PDX (in)	S (in)	RE (in)
				Cermet	Uncoated				
				NS9530	TH10				
≤ 3	≥ 8	R	**TTR42W-005**	●	●	0.500	0.063	0.126	0.0020
≤ 3	≥ 8	L	**TTL42W-005**	●	●	0.500	0.063	0.126	0.0020

● : Line up / 5 pieces per package

Reference pages: J-Series: External toolholders → E048 - E049
TT type: External toolholders → E053
Inernal toolholders → E067

ISO metric (General purpose)



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
06		SIR0005...
08		SIR0007...
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Full-profile insert

Insert size	Pitch (Reference) (mm)	Hand of cut	External insert (in)									Internal insert (in)								
			Designation	Grade				IC	PDX	PDY	RE	Designation	Grade				IC	PDX	PDY	RE
				Coated			Uncoated						Coated			Uncoated				
				AH8015	AH725	T313V	TH10						AH8015	AH725	T313V	TH10				
6	0.75	R										6IR075ISO		●		●	-	0.020	-	0.0020
6	1	R										6IR10ISO	●	●		●	-	0.035	-	0.0028
6	1.25	R										6IR125ISO	●	●		●	-	0.035	-	0.0035
6	1.5	R										6IR15ISO	●	●		●	-	0.035	-	0.004
6	1.75	R										6IR175ISO	●	●		●	-	0.035	-	0.005
6	2	R										6IR20ISO	●	●		●	-	0.035	-	0.006
06	0.5	R										06IR05ISO		●**			0.157	0.016	0.024	0.0016
06	0.75	R										06IR075ISO		●**			0.157	0.020	0.024	0.0024
06	1	R										06IR10ISO		●**			0.157	0.024	0.024	0.0020
06	1.25	R										06IR125ISO		●**			0.157	0.024	0.024	0.0028
08	1	R										08IR10ISO		●**			0.197	0.024	0.024	0.0028
08	1.25	R										08IR125ISO		●**			0.197	0.028	0.028	0.0035
08	1.5	R										08IR15ISO		●**			0.197	0.028	0.028	0.004
08	1.75	R										08IR175ISO		●**			0.197	0.031	0.024	0.006
11	0.35	R	11ER035ISO		●			0.250	0.016	0.024	0.0016									
11	0.5	R	11ER05ISO		●			0.250	0.024	0.024	0.0024	11IR05ISO		●		●	0.250	0.020	0.047	0.0016
11	0.7	R	11ER07ISO		●			0.250	0.024	0.024	0.004									
11	0.75	R	11ER075ISO		●			0.250	0.024	0.024	0.004	11IR075ISO	●	●			0.250	0.020	0.047	0.0020
11	0.8	R	11ER080ISO		●			0.250	0.024	0.024	0.005									
11	1	R	11ER10ISO		●			0.250	0.028	0.028	0.006	11IR10ISO	●	●	●	●	0.250	0.035	0.028	0.0028
11	1	L										11IL10ISO	●	●			0.250	0.035	0.028	0.0028
11	1.25	R	11ER125ISO		●			0.250	0.035	0.031	0.006	11IR125ISO		●			0.250	0.035	0.028	0.0035
11	1.25	L										11IL125ISO		●			0.250	0.035	0.028	0.0035
11	1.5	R	11ER15ISO		●			0.250	0.031	0.039	0.007	11IR15ISO	●	●	●	●	0.250	0.035	0.028	0.004
11	1.5	L										11IL15ISO	●	●			0.250	0.035	0.028	0.004
11	1.75	R										11IR175ISO		●	●		0.250	0.035	0.028	0.005
11	1.75	L										11IL175ISO		●			0.250	0.035	0.028	0.005
11	2	R										11IR20ISO	●	●	●		0.250	0.035	0.028	0.006
11	2	L										11IL20ISO	●	●			0.250	0.035	0.028	0.006

●** : Both ..06IR... and ..08IR... inserts have 3 cutting edges.

● : Line up / 5 pieces per package

Reference pages: External toolholders → E036 - E040
Inernal toolholders → E054 - E056

Insert size	Pitch (Reference) (mm)	Hand of cut	External insert (in)									Internal insert (in)								
			Designation	Grade				IC	PDX	PDY	RE	Designation	Grade				IC	PDX	PDY	RE
				Coated			Uncoated						Coated			Uncoated				
				AH8015	AH725	T313V	TH10						AH8015	AH725	T313V	TH10				
16	0.5	R	**16ER05ISO**	●	●		●	0.375	0.020	0.047	0.0024	**16IR05ISO**		●			0.375	0.020	0.047	0.0016
16	0.75	R	**16ER075ISO**	●	●	●	●	0.375	0.020	0.047	0.0035	**16IR075ISO**		●			0.375	0.020	0.047	0.0020
16	1	R	**16ER10ISO**	●	●	●	●	0.375	0.035	0.028	0.005	**16IR10ISO**	●	●	●	●	0.375	0.035	0.028	0.0028
16	1	L						0.000	0.000	0.000	0.000	**16IL10ISO**	●	●			0.375	0.035	0.028	0.0028
16	1.25	R	**16ER125ISO**	●	●	●		0.375	0.035	0.028	0.006	**16IR125ISO**		●			0.375	0.035	0.028	0.0035
16	1.25	L						0.000	0.000	0.000	0.000	**16IL125ISO**		●			0.375	0.035	0.028	0.0035
16	1.5	R	**16ER15ISO**	●	●	●	●	0.375	0.035	0.028	0.007	**16IR15ISO**	●	●	●	●	0.375	0.035	0.028	0.004
16	1.5	L	**16EL15ISO**	●				0.375	0.035	0.028	0.007	**16IL15ISO**	●	●			0.375	0.035	0.028	0.004
16	1.75	R	**16ER175ISO**	●	●	●		0.375	0.063	0.047	0.009	**16IR175ISO**		●	●		0.375	0.063	0.047	0.005
16	2	R	**16ER20ISO**	●	●	●	●	0.375	0.063	0.047	0.010	**16IR20ISO**	●	●	●	●	0.375	0.063	0.047	0.006
16	2	L	**16EL20ISO**	●	●			0.375	0.063	0.047	0.010	**16IL20ISO**		●			0.375	0.063	0.047	0.006
16	2.5	R	**16ER25ISO**	●	●	●	●	0.375	0.063	0.047	0.012	**16IR25ISO**	●	●	●	●	0.375	0.063	0.047	0.007
16	3	R	**16ER30ISO**	●	●	●	●	0.375	0.063	0.047	0.015	**16IR30ISO**	●	●	●	●	0.375	0.063	0.047	0.008
16	3	L						0.000	0.000	0.000	0.000	**16IL30ISO**		●			0.375	0.063	0.047	0.008
22	3.5	R	**22ER35ISO**	●	●	●		0.500	0.098	0.067	0.017	**22IR35ISO**	●	●	●		0.500	0.098	0.067	0.010
22	4	R	**22ER40ISO**	●	●	●		0.500	0.098	0.067	0.020	**22IR40ISO**	●	●	●		0.500	0.098	0.067	0.011
22	4.5	R	**22ER45ISO**	●	●			0.500	0.098	0.067	0.022	**22IR45ISO**	●	●			0.500	0.098	0.067	0.013
22	5	R	**22ER50ISO**		●	●		0.500	0.098	0.067	0.025	**22IR50ISO**		●	●		0.500	0.098	0.067	0.014
27	6	R	**27ER60ISO**		●	●		0.625	0.126	0.087	0.030	**27IR60ISO**		●	●		0.625	0.126	0.087	0.017

● : Line up / 5 pieces per package

Thread form
60°
55°
M (Metric)
UN (Unified)
W (Whitworth)
BSPT (R, PT)
NPT
NPTF
TR (Metric, 30° Trapezoidal)
Round (DIN405)
UNJ
MJ
ACME (29° Trapezoidal)
STUB ACME (29° Trapezoidal)
API Round
API Buttress
API Rotary Shoulder Connection

Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (mm)	Hand of cut	External insert (in)								Internal insert (in)							
			Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
				Coated		Cermet						Coated		Cermet				
				AH8015	AH725	NS9530						AH8015	AH725	NS9530				
11	0.5	R									11IR05ISO-B		●		0.250	0.020	0.047	0.0016
11	0.5	R									11IR05ISO-M			●	0.250	0.020	0.047	0.0016
11	0.75	R									11IR075ISO-B		●		0.250	0.020	0.047	0.0020
11	0.75	R									11IR075ISO-M			●	0.250	0.020	0.047	0.0020
11	1	R									11IR10ISO-B		●		0.250	0.035	0.028	0.0031
11	1	R									11IR10ISO-M	●		●	0.250	0.035	0.028	0.0031
11	1.25	R									11IR125ISO-B		●		0.250	0.035	0.028	0.004
11	1.25	R									11IR125ISO-M	●		●	0.250	0.035	0.028	0.004
11	1.5	R									11IR15ISO-B		●		0.250	0.035	0.028	0.005
11	1.5	R									11IR15ISO-M	●		●	0.250	0.035	0.028	0.005
11	1.75	R									11IR175ISO-B		●		0.250	0.035	0.028	0.005
11	1.75	R									11IR175ISO-M			●	0.250	0.035	0.028	0.005
11	2	R									11IR20ISO-B		●		0.250	0.035	0.028	0.006
11	2	R									11IR20ISO-M	●		●	0.250	0.035	0.028	0.006
16	0.5	R	16ER05ISO-M			●	0.375	0.020	0.047	0.0024								
16	0.75	R	16ER075ISO-B		●*		0.375	0.024	0.024	0.0031								
16	0.75	R	16ER075ISO-M	●		●	0.375	0.020	0.047	0.0035								
16	1	R	16ER10ISO-B		●*		0.375	0.028	0.028	0.004	16IR10ISO-B		●*		0.375	0.028	0.024	0.0020
16	1	R	16ER10ISO-M	●	●	●	0.375	0.035	0.028	0.005	16IR10ISO-M	●		●	0.375	0.035	0.028	0.0031
16	1.25	R	16ER125ISO-B		●*		0.375	0.035	0.031	0.006	16IR125ISO-B		●*		0.375	0.035	0.031	0.0024
16	1.25	R	16ER125ISO-M	●		●	0.375	0.035	0.028	0.006	16IR125ISO-M			●	0.375	0.035	0.028	0.004
16	1.5	R	16ER15ISO-B		●*		0.375	0.039	0.031	0.007	16IR15ISO-B		●*		0.375	0.039	0.031	0.0031
16	1.5	R	16ER15ISO-M	●	●	●	0.375	0.035	0.028	0.007	16IR15ISO-M	●	●	●	0.375	0.035	0.028	0.005
16	1.75	R	16ER175ISO-B		●*		0.375	0.047	0.035	0.010	16IR175ISO-B		●*		0.375	0.047	0.035	0.004
16	1.75	R	16ER175ISO-M	●		●	0.375	0.063	0.047	0.009	16IR175ISO-M			●	0.375	0.063	0.047	0.006
16	2	R	16ER20ISO-B		●*		0.375	0.051	0.039	0.011	16IR20ISO-B		●*		0.375	0.051	0.039	0.004
16	2	R	16ER20ISO-M	●	●	●	0.375	0.063	0.047	0.010	16IR20ISO-M	●		●	0.375	0.063	0.047	0.006
16	2.5	R	16ER25ISO-B		●*		0.375	0.059	0.043	0.012	16IR25ISO-B		●*		0.375	0.059	0.043	0.006
16	2.5	R	16ER25ISO-M	●		●	0.375	0.063	0.047	0.012	16IR25ISO-M			●	0.375	0.063	0.047	0.007
16	3	R	16ER30ISO-B		●*		0.375	0.063	0.047	0.015	16IR30ISO-B		●*		0.375	0.059	0.043	0.009
16	3	R	16ER30ISO-M	●		●	0.375	0.063	0.047	0.015	16IR30ISO-M	●		●	0.375	0.063	0.047	0.008
22	3.5	R	22ER35ISO-B		●		0.500	0.091	0.063	0.019								
22	4	R	22ER40ISO-B		●		0.500	0.091	0.063	0.020								

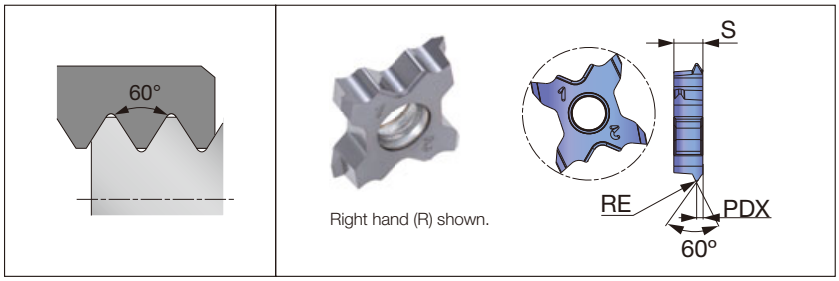
- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- requires the use of dedicated shim.
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E070.

● : Line up / 5 pieces per package



Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

ISO metric (General purpose)



Applicable toolholder

External
STCR/L**-18
STCR/L**18-CHP
JS**-STCL18
C*STCFL**18-CHP
C*STCR/L**18-CHP
QC**STCR/L18 (-Y)
QC**STCR/L18 (-Y)-CHP

Partial-profile insert

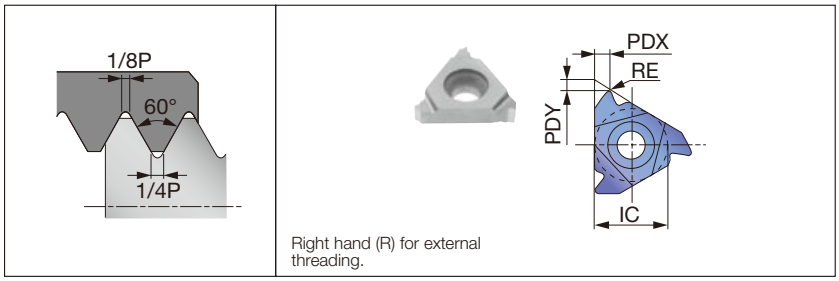
Pitch (mm)	Hand of cut	External insert (in) Designation	Grade: Coated SH725	Grade: Coated AH725	PDX	RE	S
0.5	R	**TCT18FR-05ISO**	●		0.014	0.0024	0.157
0.7	R	**TCT18FR-07ISO**	●		0.018	0.0035	0.157
0.75	R	**TCT18FR-075ISO**	●		0.020	0.0035	0.157
0.8	R	**TCT18FR-08ISO**	●		0.020	0.004	0.157
1	R	**TCT18R-10ISO**		●	0.024	0.005	0.157
1.25	R	**TCT18R-125ISO**		●	0.028	0.007	0.157
1.5	R	**TCT18R-15ISO**		●	0.031	0.008	0.157

● : Line up / 5 pieces per package

Thread form
60°
55°
M (Metric)
UN (Unified)
W (Whitworth)
BSPT (R, PT)
NPT
NPTF
TR (Metric, 30° Trapezoidal)
Round (DIN405)
UNJ
MJ
ACME (29° Trapezoidal)
STUB ACME (29° Trapezoidal)
API Round
API Buttress
API Rotary Shoulder Connection

Reference pages: External toolholders → E041 - E044

Unified (General purpose)



Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated								Coated						
					AH8015	AH725	T313V						AH8015	AH725	T313V				
11	(0.031)	32	R									11IR32UN		●		0.250	0.020	0.047	0.0024
11	(0.036)	28	R									11IR28UN		●		0.250	0.020	0.047	0.0024
11	(0.042)	24	R									11IR24UN		●		0.250	0.035	0.028	0.0028
11	(0.050)	20	R									11IR20UN		●		0.250	0.035	0.028	0.0035
11	(0.056)	18	R									11IR18UN		●		0.250	0.035	0.028	0.004
11	(0.063)	16	R									11IR16UN	●	●		0.250	0.035	0.028	0.004
11	(0.071)	14	R									11IR14UN		●		0.250	0.035	0.028	0.005
16	(0.031)	32	R	16ER32UN	●	●		0.375	0.020	0.047	0.004	16IR32UN		●		0.375	0.020	0.047	0.0024
16	(0.036)	28	R	16ER28UN	●	●		0.375	0.020	0.047	0.004	16IR28UN		●		0.375	0.020	0.047	0.0024
16	(0.042)	24	R	16ER24UN	●	●		0.375	0.035	0.028	0.005	16IR24UN		●		0.375	0.035	0.028	0.0028
16	(0.050)	20	R	16ER20UN	●	●		0.375	0.035	0.028	0.006	16IR20UN		●		0.375	0.035	0.028	0.0035
16	(0.056)	18	R	16ER18UN	●	●		0.375	0.035	0.028	0.007	16IR18UN		●		0.375	0.035	0.028	0.004
16	(0.063)	16	R	16ER16UN	●	●	●	0.375	0.035	0.028	0.008	16IR16UN		●	●	0.375	0.035	0.028	0.004
16	(0.071)	14	R	16ER14UN	●	●	●	0.375	0.063	0.047	0.009	16IR14UN		●	●	0.375	0.063	0.047	0.005
16	(0.077)	13	R	16ER13UN		●		0.375	0.063	0.047	0.009	16IR13UN		●		0.375	0.063	0.047	0.006
16	(0.083)	12	R	16ER12UN	●	●	●	0.375	0.063	0.047	0.011	16IR12UN		●	●	0.375	0.063	0.047	0.006
16	(0.091)	11	R	16ER11UN		●		0.375	0.063	0.047	0.011	16IR11UN		●		0.375	0.063	0.047	0.006
16	(0.100)	10	R	16ER10UN	●	●		0.375	0.063	0.047	0.013	16IR10UN		●		0.375	0.063	0.047	0.007
16	(0.111)	9	R	16ER9UN		●		0.375	0.063	0.047	0.014	16IR9UN		●		0.375	0.063	0.047	0.008
16	(0.125)	8	R	16ER8UN	●	●	●	0.375	0.063	0.047	0.016	16IR8UN		●	●	0.375	0.063	0.047	0.009
22	(0.143)	7	R	22ER7UN		●		0.500	0.098	0.067	0.018	22IR7UN		●		0.500	0.098	0.067	0.010
22	(0.167)	6	R	22ER6UN		●		0.500	0.098	0.067	0.021	22IR6UN		●		0.500	0.098	0.067	0.012
22	(0.200)	5	R	22ER5UN		●		0.500	0.098	0.067	0.025	22IR5UN		●		0.500	0.098	0.067	0.014

● : Line up / 5 pieces per package

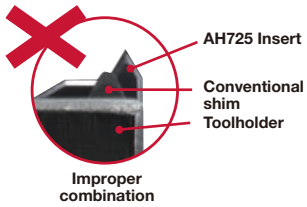
Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE
16	(0.042)	24	R	**16ER24UN-B**		●*		0.375	0.031	0.028	0.004								
16	(0.042)	24	R	**16ER24UN-M**			●	0.375	0.035	0.028	0.005								
16	(0.050)	20	R	**16ER20UN-B**		●*		0.375	0.035	0.031	0.006	**16IR20UN-B**		●*		0.375	0.035	0.031	0.0024
16	(0.050)	20	R	**16ER20UN-M**	●		●	0.375	0.035	0.028	0.006	**16IR20UN-M**			●	0.375	0.035	0.028	0.0035
16	(0.056)	18	R	**16ER18UN-B**		●*		0.375	0.039	0.031	0.006	**16IR18UN-B**		●*		0.375	0.039	0.031	0.0031
16	(0.056)	18	R	**16ER18UN-M**	●		●	0.375	0.035	0.028	0.007	**16IR18UN-M**	●		●	0.375	0.035	0.028	0.004
16	(0.063)	16	R	**16ER16UN-B**		●*		0.375	0.043	0.035	0.007	**16IR16UN-B**		●*		0.375	0.043	0.035	0.0035
16	(0.063)	16	R	**16ER16UN-M**	●		●	0.375	0.035	0.028	0.008	**16IR16UN-M**			●	0.375	0.035	0.028	0.004
16	(0.071)	14	R	**16ER14UN-B**		●*		0.375	0.047	0.039	0.009	**16IR14UN-B**		●*		0.375	0.047	0.035	0.004
16	(0.071)	14	R	**16ER14UN-M**	●		●	0.375	0.063	0.047	0.009	**16IR14UN-M**			●	0.375	0.063	0.047	0.005
16	(0.077)	13	R	**16ER13UN-B**		●*		0.375	0.051	0.039	0.009								
16	(0.083)	12	R	**16ER12UN-B**		●*		0.375	0.055	0.043	0.010	**16IR12UN-B**		●*		0.375	0.055	0.043	0.005
16	(0.083)	12	R	**16ER12UN-M**	●		●	0.375	0.063	0.047	0.011	**16IR12UN-M**	●		●	0.375	0.063	0.047	0.006
16	(0.125)	8	R	**16ER8UN-B**		●*		0.375	0.063	0.047	0.016	**16IR8UN-B**		●*		0.375	0.059	0.043	0.008
16	(0.125)	8	R	**16ER8UN-M**			●	0.375	0.063	0.047	0.016	**16IR8UN-M**			●	0.375	0.063	0.047	0.009

● : Line up / 5 pieces per package

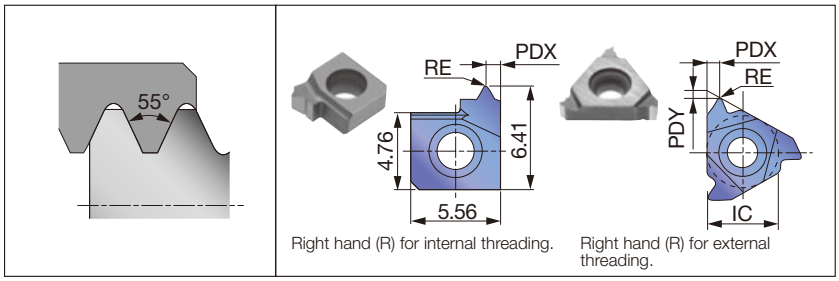
- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- requires the use of dedicated shim.
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
Please refer to the page E070.



Thread form
60°
55°
M (Metric)
UN (Unified)
W (Whitworth)
BSPT (R, PT)
NPT
NPTF
TR (Metric, 30° Trapezoidal)
Round (DIN405)
UNJ
MJ
ACME (29° Trapezoidal)
STUB ACME (29° Trapezoidal)
API Round
API Buttress
API Rotary Shoulder Connection

Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

Whitworth, Parallel pipe thread



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

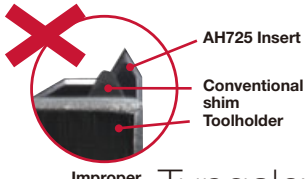
Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	(0.053)	19	R										6IR19W	●	●		●	-	0.035	-	0.007
11	(0.053)	19	R										11IR19W	●	●	●	●	0.250	0.035	0.028	0.007
11	(0.071)	14	R										11IR14W	●	●	●	●	0.250	0.035	0.028	0.009
16	(0.036)	28	R	16ER28W		●	●		0.375	0.035	0.028	0.004	16IR28W		●			0.375	0.035	0.028	0.004
16	(0.038)	26	R	16ER26W		●			0.375	0.035	0.028	0.005	16IR26W		●			0.375	0.035	0.028	0.005
16	(0.050)	20	R	16ER20W		●			0.375	0.035	0.028	0.006	16IR20W		●			0.375	0.035	0.028	0.006
16	(0.053)	19	R	16ER19W	●	●	●		0.375	0.035	0.028	0.007	16IR19W		●			0.375	0.035	0.028	0.007
16	(0.056)	18	R	16ER18W		●			0.375	0.035	0.028	0.007	16IR18W		●			0.375	0.035	0.028	0.007
16	(0.063)	16	R	16ER16W		●	●		0.375	0.035	0.028	0.008	16IR16W		●	●		0.375	0.035	0.028	0.008
16	(0.071)	14	R	16ER14W	●	●	●	●	0.375	0.063	0.047	0.009	16IR14W	●	●	●	●	0.375	0.063	0.047	0.009
16	(0.071)	14	L	16EL14W		●			0.375	0.063	0.047	0.009									
16	(0.083)	12	R	16ER12W		●	●		0.375	0.063	0.047	0.011	16IR12W		●	●		0.375	0.063	0.047	0.011
16	(0.091)	11	R	16ER11W	●	●	●	●	0.375	0.063	0.047	0.011	16IR11W	●	●	●	●	0.375	0.063	0.047	0.011
16	(0.100)	10	R	16ER10W		●	●		0.375	0.063	0.047	0.013	16IR10W		●	●		0.375	0.063	0.047	0.013
16	(0.111)	9	R	16ER9W		●			0.375	0.063	0.047	0.014	16IR9W		●			0.375	0.063	0.047	0.014
16	(0.125)	8	R	16ER8W		●	●		0.375	0.063	0.047	0.016	16IR8W		●	●		0.375	0.063	0.047	0.016
22	(0.143)	7	R	22ER7W		●			0.500	0.098	0.067	0.018	22IR7W		●			0.500	0.098	0.067	0.018
22	(0.167)	6	R	22ER6W		●			0.500	0.098	0.067	0.021	22IR6W		●			0.500	0.098	0.067	0.021
22	(0.200)	5	R	22ER5W		●			0.500	0.098	0.067	0.025	22IR5W		●			0.500	0.098	0.067	0.025

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Coated AH725	Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Coated AH725	Cermet NS9530	IC	PDX	PDY	RE
16	(0.053)	19	R	16ER19W-B		●*		0.375	0.039	0.031	0.006								
16	(0.053)	19	R	16ER19W-M	●		●	0.375	0.035	0.028	0.007	16IR19W-M			●	0.375	0.035	0.028	0.007
16	(0.063)	16	R	16ER16W-B		●*		0.375	0.043	0.035	0.008	16IR16W-B		●*		0.375	0.043	0.035	0.007
16	(0.071)	14	R	16ER14W-B		●*		0.375	0.047	0.039	0.009	16IR14W-B		●*		0.375	0.047	0.039	0.008
16	(0.071)	14	R	16ER14W-M	●		●	0.375	0.063	0.047	0.009	16IR14W-M	●		●	0.375	0.063	0.047	0.009
16	(0.091)	11	R	16ER11W-B		●*		0.375	0.059	0.043	0.011	16IR11W-B		●*		0.375	0.059	0.043	0.011
16	(0.091)	11	R	16ER11W-M	●		●	0.375	0.063	0.047	0.011	16IR11W-M	●		●	0.375	0.063	0.047	0.011

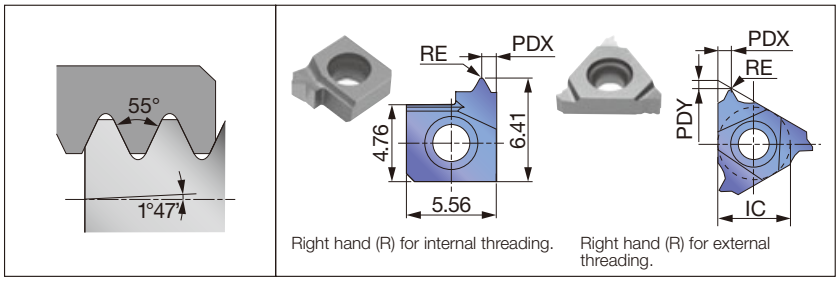
- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- ▭ requires the use of dedicated shim.
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
Please refer to the page E070.

● : Line up / 5 pieces per package



Reference pages: External toolholders → E036 - E040
Inernal toolholders → E054 - E056

BSPT (for Pipe)



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11	SER**11	SNR/L**11...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Thread form

60°
55°
M (Metric)
UN (Unified)
W (Whitworth)
BSPT (R, PT)
NPT
NPTF
TR (Metric, 30° Trapezoidal)
Round (DIN405)
UNJ
MJ
ACME (29° Trapezoidal)
STUB ACME (29° Trapezoidal)
API Round
API Buttress
API Rotary Shoulder Connection

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	(0.053)	19	R										6IR19PT	●	●		●	-	0.035	-	0.006
11	(0.053)	19	R										11IR19PT	●	●	●	●	0.250	0.035	0.028	0.006
11	(0.071)	14	R										11IR14PT	●	●	●	●	0.250	0.035	0.028	0.006
16	(0.036)	28	R	16ER28PT		●	●		0.375	0.035	0.028	0.0035									
16	(0.053)	19	R	16ER19PT	●	●	●		0.375	0.035	0.028	0.006	16IR19PT		●			0.375	0.035	0.028	0.006
16	(0.071)	14	R	16ER14PT	●	●	●		0.375	0.063	0.047	0.006	16IR14PT	●	●	●	●	0.375	0.063	0.047	0.006
16	(0.091)	11	R	16ER11PT	●	●	●		0.375	0.063	0.047	0.010	16IR11PT	●	●	●	●	0.375	0.063	0.047	0.010

● : Line up / 5 pieces per package

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH8015	Coated AH725	Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH8015	Coated AH725	Cermet NS9530	IC	PDX	PDY	RE
16	(0.053)	19	R	16ER19PT-M			●	0.375	0.035	0.028	0.007	16IR19PT-M			●	0.375	0.035	0.028	0.007
16	(0.071)	14	R	16ER14PT-B		●*		0.375	0.047	0.039	0.009	16IR14PT-B		●*		0.375	0.047	0.039	0.008
16	(0.071)	14	R	16ER14PT-M	●		●	0.375	0.063	0.047	0.010	16IR14PT-M	●		●	0.375	0.063	0.047	0.010
16	(0.091)	11	R	16ER11PT-B		●*		0.375	0.059	0.043	0.011	16IR11PT-B		●*		0.375	0.059	0.043	0.012
16	(0.091)	11	R	16ER11PT-M	●		●	0.375	0.063	0.047	0.013	16IR11PT-M	●		●	0.375	0.063	0.047	0.013

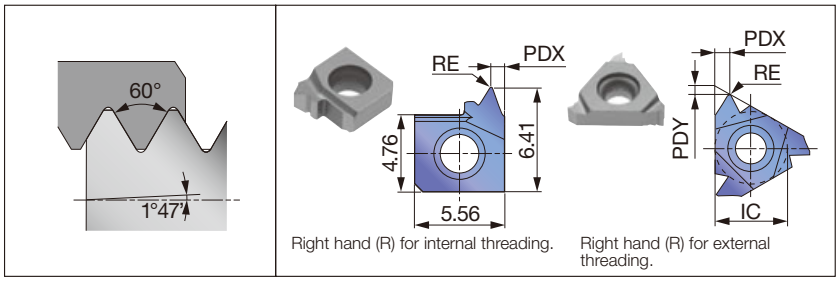
- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- requires the use of dedicated shim.
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
Please refer to the page E070.

● : Line up / 5 pieces per package



Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

NPT (for Pipe)



Right hand (R) for internal threading.

Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)									Internal insert (in)								
				Designation	Grade				IC	PDX	PDY	RE	Designation	Grade				IC	PDX	PDY	RE
					Coated			Uncoated						Coated			Uncoated				
					AH8015	AH725	T313V	TH10						AH8015	AH725	T313V	TH10				
6	(0.056)	18	R										6IR18NPT		●		●	-	0.035	-	0.0012
16	(0.037)	27	R	16ER27NPT		●			0.375	0.020	0.047	0.0008	16IR27NPT		●			0.375	0.020	0.047	0.0008
16	(0.056)	18	R	16ER18NPT		●	●		0.375	0.035	0.028	0.0012	16IR18NPT		●			0.375	0.035	0.028	0.0012
16	(0.071)	14	R	16ER14NPT		●			0.375	0.063	0.047	0.0016	16IR14NPT	●	●		●	0.375	0.063	0.047	0.0016
16	(0.087)	11.5	R	16ER115NPT		●			0.375	0.063	0.047	0.0020	16IR115NPT		●		●	0.375	0.063	0.047	0.0020
16	(0.125)	8	R	16ER8NPT		●			0.375	0.063	0.047	0.0028	16IR8NPT		●		●	0.375	0.063	0.047	0.0028

● : Line up / 5 pieces per package

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Cermet						Coated		Cermet				
					AH8015	AH725	NS9530						AH8015	AH725	NS9530				
16	(0.056)	18	R	16ER18NPT-B		●*		0.375	0.039	0.031	0.0020								
16	(0.056)	18	R	16ER18NPT-M	●		●	0.375	0.035	0.028	0.0028	16IR18NPT-M			●	0.375	0.035	0.028	0.0028
16	(0.071)	14	R	16ER14NPT-B		●*		0.375	0.047	0.035	0.0020	16IR14NPT-B		●*		0.375	0.047	0.035	0.0020
16	(0.071)	14	R	16ER14NPT-M	●		●	0.375	0.063	0.047	0.0031	16IR14NPT-M	●		●	0.375	0.063	0.047	0.0031
16	(0.087)	11.5	R	16ER115NPT-B		●*		0.375	0.059	0.043	0.0035	16IR115NPT-B		●*		0.375	0.059	0.043	0.0035
16	(0.087)	11.5	R	16ER115NPT-M			●	0.375	0.063	0.047	0.0035	16IR115NPT-M	●		●	0.375	0.063	0.047	0.0035
16	(0.125)	8	R	16ER8NPT-B		●*		0.375	0.071	0.051	0.005	16IR8NPT-B		●*		0.375	0.071	0.051	0.005

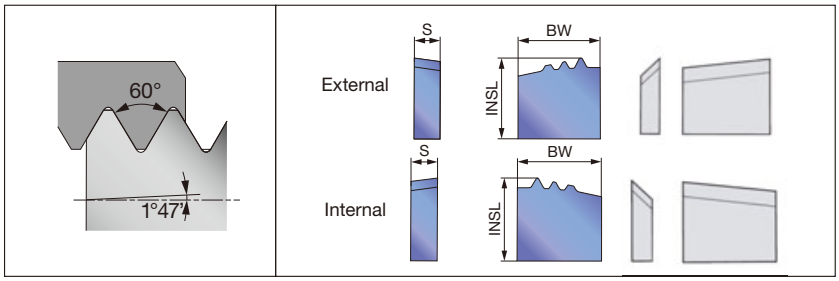
- ●* : The cutting edge position needs re-adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).
- requires the use of dedicated shim.
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.
Please refer to the page E070.

● : Line up / 5 pieces per package



Reference pages: External toolholders → E036 - E040, Inernal toolholders → E054 - E056

NPT (for Pipe)



Applicable toolholder

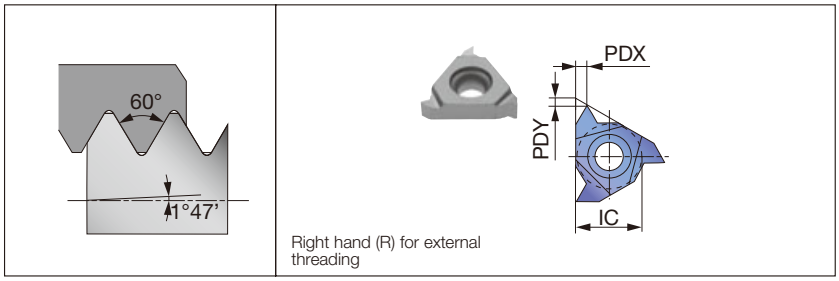
External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (in)						Internal insert (in)					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment
(2.209)	11.5	1/16	0.75	**CR-11.5NPT-4E**	●	0.630	0.618	0.205	CR-8R / 10R-3E / 4E-CB	**CR-11.5NPT-4I**	●	0.630	0.618	0.205	CR-8R / 10R-3I / 4I-CB
(3.175)	8	1/16	0.75	**CR-8NPT-4E**	●	0.630	0.618	0.205	CR-8R / 10R-3E / 4E-CB	**CR-8NPT-4I**	●	0.630	0.618	0.205	CR-8R / 10R-3I / 4I-CB

● : Line up / 5 pieces per package

NPTF (for Pipe)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... (C*CER/L...)	TSNR/L**16
	JSER**16...	SNR/L**16...
	JS**SEL16	TCNR/L**16...
	SER**16-CHP	CNR/L**16...
	B-SER/L**16	
	B-CER/L**16	
	BC-SER/L**16	

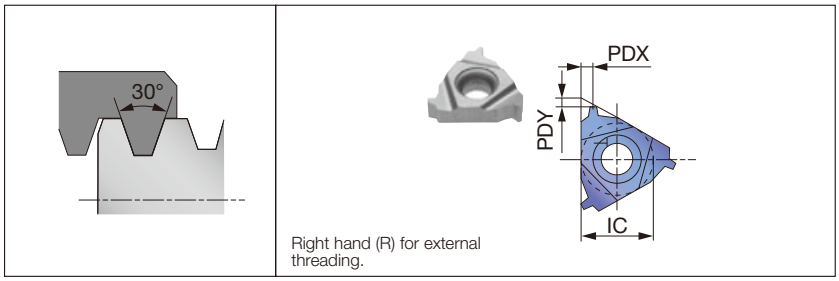
Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	IC	PDX	PDY	RE	Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.037)	27	R	**16ER27NPTF**	●	0.375	0.020	0.047	-						
16	(0.056)	18	R	**16ER18NPTF**	●	0.375	0.035	0.028	-						
16	(0.071)	14	R	**16ER14NPTF**	●	0.375	0.063	0.047	-	**16IR14NPTF**	●	0.375	0.063	0.047	-
16	(0.087)	11.5	R	**16ER115NPTF**	●	0.375	0.063	0.047	-	**16IR115NPTF**	●	0.375	0.063	0.047	-
16	(0.125)	8	R	**16ER8NPTF**	●	0.375	0.063	0.047	-	**16IR8NPTF**	●	0.375	0.063	0.047	-

● : Line up / 5 pieces per package

Reference pages: NPT: External toolholders → E053, Internal toolholders → E067
NPTF: External toolholders → E036 - E040, Inernal toolholders → E055 - E056

30° Trapezoidal / DIN103 (for Machine parts)



Right hand (R) for external threading.

Applicable toolholder

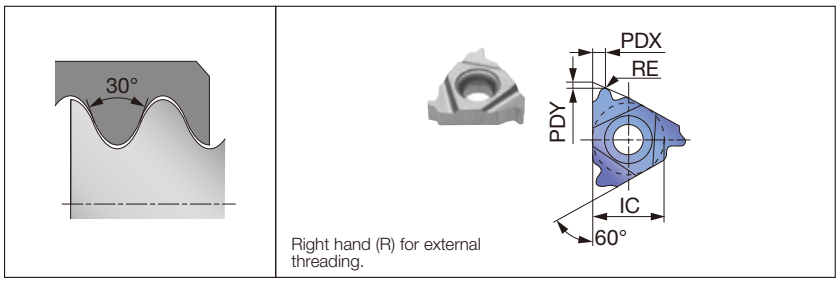
Insert size	External	Internal
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

With the special full-profile insert

Insert size	Pitch (Reference) (mm)	Hand of cut	External insert (in)						Internal insert (in)					
			Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY
16	1.5	R	**16ER15TR**	●		0.375	0.035	0.028	**16IR15TR**	●		0.375	0.035	0.028
16	2	R	**16ER20TR**	●	●	0.375	0.063	0.051	**16IR20TR**	●	●	0.375	0.063	0.051
16	3	R	**16ER30TR**	●	●	0.375	0.063	0.051	**16IR30TR**	●	●	0.375	0.063	0.051
22	4	R	**22ER40TR**	●	●	0.500	0.098	0.079	**22IR40TR**	●	●	0.500	0.098	0.079
22	5	R	**22ER50TR**	●	●	0.500	0.098	0.079	**22IR50TR**	●	●	0.500	0.098	0.079
27	6	R	**27ER60TR**	●	●	0.625	0.126	0.098						

● : Line up / 5 pieces per package

Round / DIN405 (for Machine parts)



Right hand (R) for external threading.

Applicable toolholder

Insert size	External	Internal
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

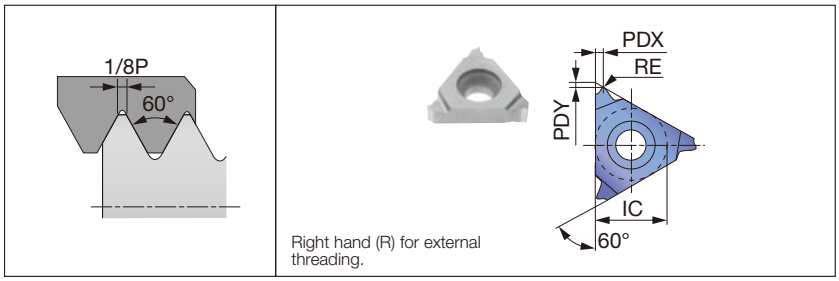
Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	IC	PDX	PDY	RE	Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.125)	8	R	**16ER8RD-B**	●	0.375	0.051	0.055	0.030						
16	(0.167)	6	R	**16ER6RD-B**	●	0.375	0.067	0.059	0.040	**16IR6RD-B**	●	0.375	0.059	0.055	0.037

● : Line up / 5 pieces per package

Reference pages: External toolholders → E036 - E040, Inernal toolholders → E055 - E056

UNJ (for Aerospace industry)



Right hand (R) for external threading.

Applicable toolholder

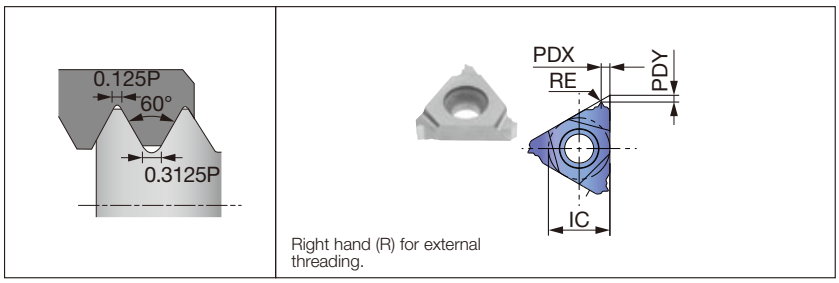
Insert size	External
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH8015	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.031)	32	R	**16ER32UNJ**	●	●	0.375	0.020	0.047	0.005
16	(0.036)	28	R	**16ER28UNJ**	●	●	0.375	0.020	0.047	0.006
16	(0.042)	24	R	**16ER24UNJ**	●	●	0.375	0.035	0.028	0.007
16	(0.050)	20	R	**16ER20UNJ**	●	●	0.375	0.035	0.028	0.008
16	(0.056)	18	R	**16ER18UNJ**	●	●	0.375	0.035	0.028	0.009
16	(0.063)	16	R	**16ER16UNJ**	●	●	0.375	0.035	0.028	0.010
16	(0.071)	14	R	**16ER14UNJ**	●	●	0.375	0.063	0.047	0.012
16	(0.083)	12	R	**16ER12UNJ**	●	●	0.375	0.063	0.047	0.014
16	(0.100)	10	R	**16ER10UNJ**	●	●	0.375	0.063	0.047	0.017
16	(0.125)	8	R	**16ER8UNJ**	●	●	0.375	0.063	0.047	0.021

● : Line up / 5 pieces per package

MJ (for Aerospace industry)



Right hand (R) for external threading.

Applicable toolholder

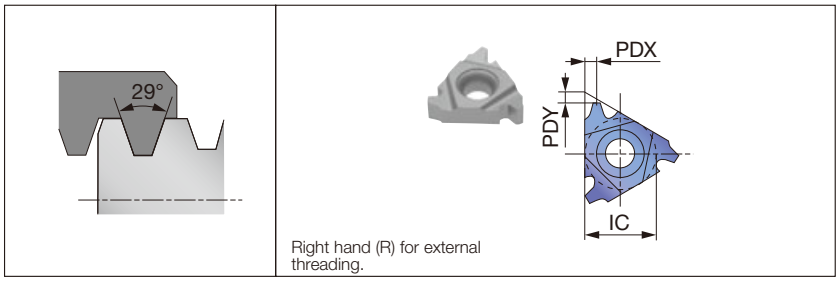
Insert size	Internal
11	SNR/L**11...

Insert size	Pitch (Reference) (in)	Hand of cut	Internal insert (in) Designation	Grade Coated AH8015	IC	PDX	PDY	RE
11	0.039	R	**11IR10MJ**	●	0.250	0.035	0.028	0.0020

● : Line up / 5 pieces per package

Reference pages: UNJ : External toolholders → E036 - E040
MJ : Internal toolholders → E055

29° Trapezoidal / ACME (for Machine parts, Pipe)



Right hand (R) for external threading.

Applicable toolholder

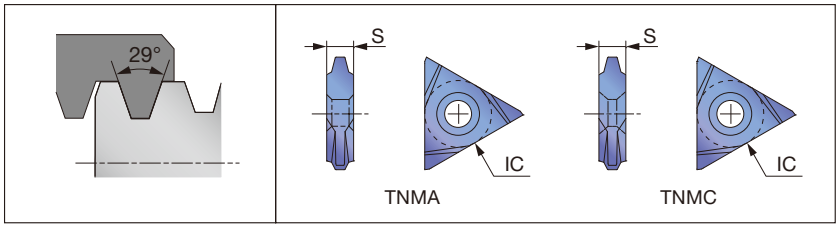
Insert size	External	Internal
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

With the special full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY
16	(0.083)	12	R	**16ER12ACME**	●		0.375	0.063	0.051	**16IR12ACME**	●		0.375	0.063	0.051
16	(0.100)	10	R	**16ER10ACME**	●		0.375	0.063	0.051	**16IR10ACME**	●		0.375	0.063	0.051
16	(0.125)	8	R	**16ER8ACME**	●	●	0.375	0.063	0.051	**16IR8ACME**	●	●	0.375	0.063	0.051
22	(0.167)	6	R	**22ER6ACME**	●	●	0.500	0.098	0.079	**22IR6ACME**	●	●	0.500	0.098	0.079
22	(0.200)	5	R	**22ER5ACME**	●	●	0.500	0.098	0.079	**22IR5ACME**	●	●	0.500	0.098	0.079

● : Line up / 5 pieces per package

29° Trapezoidal / ACME (for Machine parts, Pipe)



Applicable toolholder

External
MTVOR-**M..
STVOR-**M...

On edge

Pitch	TPI	Taper mm/mm	Taper TPF	External insert (in) Designation	Grade Coated AH725	IC	S
(1.588)	16	-	-	**TNMA43NT16PEXT-PT**	●	0.500	0.189
(1.814)	14	-	-	**TNMA43NT14PEXT-PT**	●	0.500	0.189
(2.117)	12	-	-	**TNMA43NT12PEXT-PT**	●	0.500	0.189
(2.54)	10	-	-	**TNMA43NT10PEXT-PT**	●	0.500	0.189
(3.175)	8	-	-	**TNMA43NT8PEXT-PT**	●	0.500	0.189
(4.233)	6	-	-	**TNMA43NT6PEXT-PT**	●	0.500	0.189
(5.08)	5	-	-	**TNMA54NT5PEXT-PT**	●	0.625	0.252
(6.35)	4	-	-	**TNMA54NT4PEXT-PT**	●	0.625	0.252
(8.47)	3	-	-	**TNMA54NT3PEXT-PT**	●	0.625	0.252
(1.588)	16	-	-	**TNMC43NT16PEXT-PT**	●	0.500	0.189
(1.814)	14	-	-	**TNMC43NT14PEXT-PT**	●	0.500	0.189
(2.117)	12	-	-	**TNMC43NT12PEXT-PT**	●	0.500	0.189
(2.54)	10	-	-	**TNMC43NT10PEXT-PT**	●	0.500	0.189
(3.175)	8	-	-	**TNMC43NT8PEXT-PT**	●	0.500	0.189
(4.233)	6	-	-	**TNMC43NT6PEXT-PT**	●	0.500	0.189
(5.08)	5	-	-	**TNMC54NT5PEXT-PT**	●	0.625	0.252
(6.35)	4	-	-	**TNMC54NT4PEXT-PT**	●	0.625	0.252
(8.47)	3	-	-	**TNMC54NT3PEXT-PT**	●	0.625	0.252

● : Line up / 10 pieces per package

Reference pages: 29° Trapezoidal With the special full-profile insert : External toolholders → E036 - E040, Internal toolholders → E055 - E056
29° Trapezoidal On edge : External toolholders → E052

29° Trapezoidal/ STUB ACME (for Machine parts, Pipe)

On edge

Pitch (Reference) (in)	TPI	Taper mm/mm	Taper TPF	External insert (in) Designation	Grade Coated AH725	IC	S
(0.063)	16	-	-	**TNMA43NT16PSTUBE-PT**	●	0.500	0.189
(0.071)	14	-	-	**TNMA43NT14PSTUBE-PT**	●	0.500	0.189
(0.083)	12	-	-	**TNMA43NT12PSTUBE-PT**	●	0.500	0.189
(0.100)	10	-	-	**TNMA43NT10PSTUBE-PT**	●	0.500	0.189
(0.125)	8	-	-	**TNMA43NT8PSTUBE-PT**	●	0.500	0.189
(0.167)	6	-	-	**TNMA43NT6PSTUBE-PT**	●	0.500	0.189
(0.200)	5	-	-	**TNMA54NT5PSTUBE-PT**	●	0.625	0.252
(0.250)	4	-	-	**TNMA54NT4PSTUBE-PT**	●	0.625	0.252
(0.333)	3	-	-	**TNMA54NT3PSTUBE-PT**	●	0.625	0.252
(0.063)	16	-	-	**TNMC43NT16PSTUBE-PT**	●	0.500	0.189
(0.071)	14	-	-	**TNMC43NT14PSTUBE-PT**	●	0.500	0.189
(0.083)	12	-	-	**TNMC43NT12PSTUBE-PT**	●	0.500	0.189
(0.100)	10	-	-	**TNMC43NT10PSTUBE-PT**	●	0.500	0.189
(0.125)	8	-	-	**TNMC43NT8PSTUBE-PT**	●	0.500	0.189
(0.167)	6	-	-	**TNMC43NT6PSTUBE-PT**	●	0.500	0.189
(0.200)	5	-	-	**TNMC54NT5PSTUBE-PT**	●	0.625	0.252
(0.250)	4	-	-	**TNMC54NT4PSTUBE-PT**	●	0.625	0.252
(0.333)	3	-	-	**TNMC54NT3PSTUBE-PT**	●	0.625	0.252

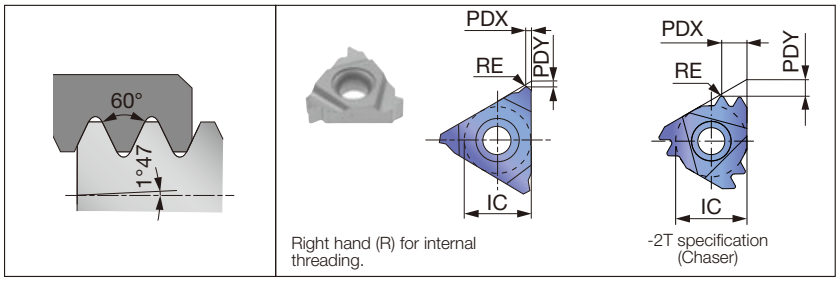
Note: ACME and STUB ACME can cut crest radius. Crest flat of ACME and STUB ACME need to be cut by another tool.

● : Line up / 10 pieces per package

Applicable toolholder

External
MTVOR-**M..
STVOR-**M...

API Round (for Energy industry)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... (C*CER/L...)	TSNR/L**16
	JSER**16...	SNR/L**16...
	JS**SEL16	TCNR/L**16...
	SER**16-CHP	CNR/L**16...
	B-SER/L**16	
	B-CER/L**16	
	BC-SER/L**16	
22	CER/L**22...	TSNR/L**22
	SER**22-CHP	SNR/L**22...
		TCNR/L**22...
		CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH725	T313V	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade Coated AH8015	AH725	T313V	IC	PDX	PDY	RE
16	(0.100)	10	R	**16ER10RAPI**	●		0.375	0.063	0.047	0.014	**16IR10RAPI**		●	●	0.375	0.063	0.047	0.014
16	(0.125)	8	R	**16ER8RAPI**	●		0.375	0.063	0.047	0.017	**16IR8RAPI**	●	●	●	0.375	0.063	0.047	0.017
22	(0.125)	8	R								**22IR8RAPI-2T**		●		0.500	0.177	0.118	0.017

● : Line up / 5 pieces per package

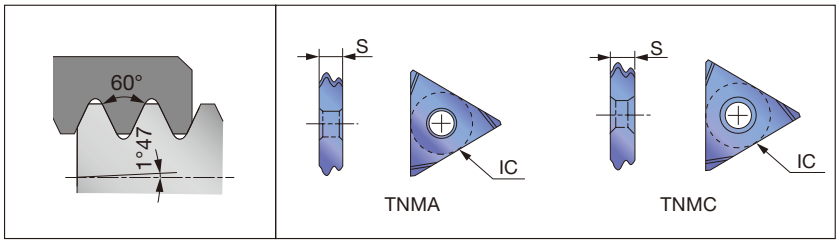
Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH725	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.100)	10	R	**16ER10RD-CB**	●	0.375	0.047	0.059	0.014	**16IR10RD-CB**	●	0.375	0.047	0.059	0.014
16	(0.125)	8	R	**16ER8RD-CB**	●	0.375	0.051	0.059	0.017	**16IR8RD-CB**	●	0.375	0.051	0.059	0.017

● : Line up / 10 pieces per package

Reference pages: 29° Trapezoidal : External toolholders → E052
API Round : External toolholders → E036 - E040, Internal toolholders → E055 - E056

API Round (for Energy)



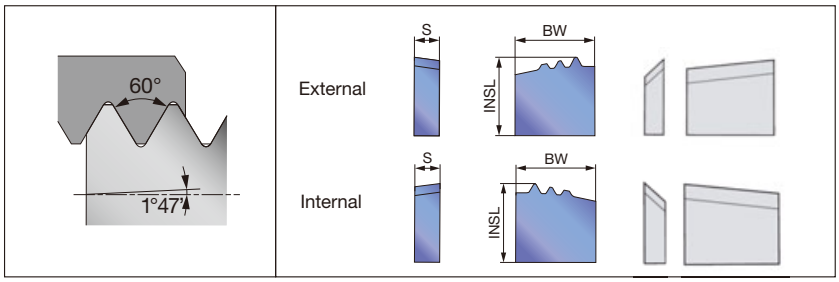
Applicable toolholder

External	Internal
MTVOR-**M.. STVOR-**M...	HS**-MTHOR...

On edge

Pitch (Reference) (in)	TPI	Taper		External insert (in)				Internal insert (in)			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(0.100)	10	1/16	0.75	**TNMA4310RDEXT**	●	0.500	0.189	**TNMA4310RDINT**	●	0.500	0.189
(0.125)	8	1/16	0.75	**TNMA438RDEXT**	●	0.500	0.189	**TNMA438RDINT**	●	0.500	0.189
(0.100)	10	1/16	0.75	**TNMC4310RDEXT**	●	0.500	0.189	**TNMC4310RDINT**	●	0.500	0.189
(0.125)	8	1/16	0.75	**TNMC438RDEXT**	●	0.500	0.189	**TNMC438RDINT**	●	0.500	0.189

● : Line up / 10 pieces per package



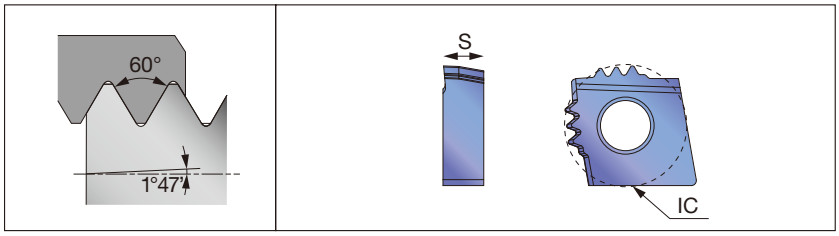
Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (mm)						Internal insert (mm)					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment
(3.175)	8	1/16	0.75	**CR-8R-3E**	●	16	15	5.2	CR-8R / 10R-3E / 4E-CB	**CR-8R-3I**	●	16	15	5.2	CR-8R / 10R-3I / 4I-CB
(2.54)	10	1/16	0.75	**CR-10R-3E**	●	16	15.9	5.2	CR-8R / 10R-3E / 4E-CB	**CR-10R-3I**	●	16	15.9	5.2	CR-8R / 10R-3I / 4I-CB

● : Line up / 10 pieces per package



Full-profile insert (chaser)

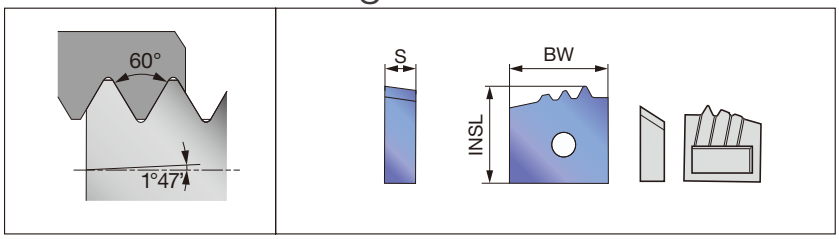
Pitch (Reference) (mm)	TPI	Taper		External insert (mm)			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S
(2.54)	10	1/16	0.75	**CNGA-10R-3E**	●	19.05	6.4
(3.175)	8	1/16	0.75	**CNGA-8R-3E**	●	19.05	6.4

Note: Toolholders need to be customized for these types of inserts.

● : Line up / 10 pieces per package

Reference pages: API Round On edge : External toolholders → E052, Internal toolholders → E066
API Round Full-profile insert : External toolholders → E053, Internal toolholders → E067

API Round (for Energy industry)
For tool-rotating machines



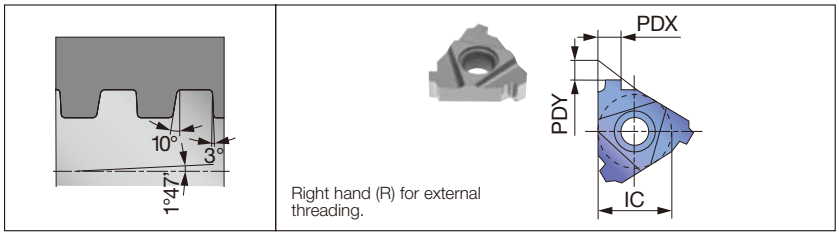
Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (mm)					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment
(3.175)	8	1/16	0.75	**CR-8R-3E#1**	●	16	14.7	5.2	TD39318R-1-CBW/CAVITY
(3.175)	8	1/16	0.75	**CR-8R-3E#2**	●	16	14.9	5.2	TD39328R-2-CBW/CAVITY
(3.175)	8	1/16	0.75	**CR-8R-3E#3**	●	16	15	5.2	TD39338R-3-CBW/CAVITY

Note: Toolholders need to be customized for these types of inserts.

● : Line up / 10 pieces per package

API Buttress (for Energy industry)



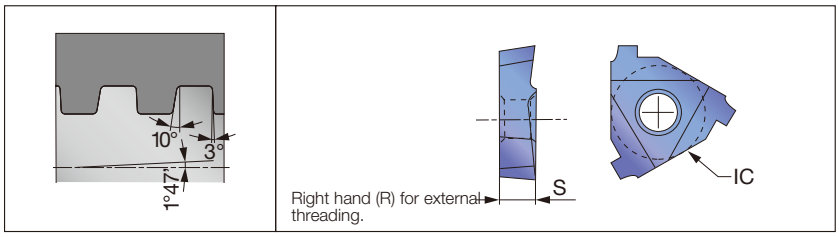
Applicable toolholder

Insert size	External	Internal
22	CER/L**22... SER**22-CHP	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)					Internal insert (in)				
				Designation	Grade Coated AH725	IC	PDX	PDY	Designation	Grade Coated AH725	IC	PDX	PDY
22	(0.200)	5	R	**22ER5BAPI**	●	0.500	0.146	0.087	**22IR5BAPI**	●	0.500	0.136	0.087

● : Line up / 5 pieces per package



Applicable toolholder

External	Internal
MTVNR**M5	HS**-LNFR...

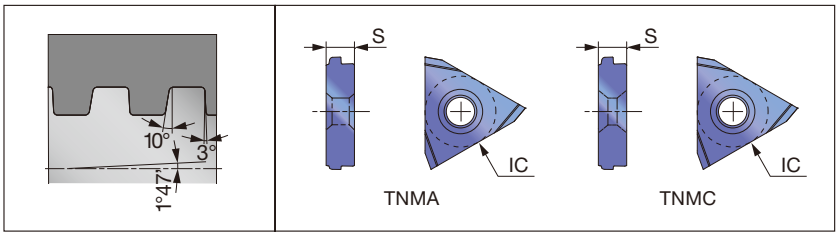
Full-profile insert (single side)

Pitch (Reference) (mm)	TPI	Taper		External insert (mm)				Internal insert (mm)			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(5.08)	5	1/16	0.75	**L535B75EXT-FC**	●	15.875	4.8	**L535B75INT-FC**	●	15.875	4.8
(5.08)	5	1/12	1	**L535B1EXT-FC**	●	15.875	4.8	**L535B1INT-FC**	●	15.875	4.8

● : Line up / 10 pieces per package

Reference pages: API Buttress Full-profile insert : External toolholders → E036, E039, Internal toolholders → E055 - E056
API Buttress Full-profile insert (single side) : External toolholders → E051, Internal toolholders → E065

API Buttress (for Energy industry)



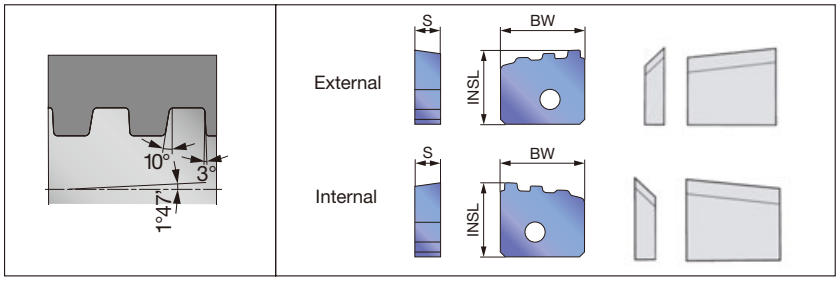
Applicable toolholder

External	Internal
MTVOR-**M.. STVOR-**M...	HS**-MTHOR...

On edge

Pitch (Reference) (in)	TPI	Taper		External insert (in)				Internal insert (in)				
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S	
(0.200)	5	1/12	1	**TNMA545B1EXT-FC**	●	0.625	0.252	**TNMA545B1INT-FC**	●	0.625	0.252	
(0.200)	5	1/16	0.75	**TNMA545B75EXT-FC**	●	0.625	0.252	**TNMA545B75INT-FC**	●	0.625	0.252	
(0.200)	5	1/12	1	**TNMC545B1EXT-FC**	●	0.625	0.252	**TNMC545B1INT-FC**	●	0.625	0.252	
(0.200)	5	1/16	0.75	**TNMC545B75EXT-FC**	●	0.625	0.252	**TNMC545B75INT-FC**	●	0.625	0.252	

● : Line up / 10 pieces per package



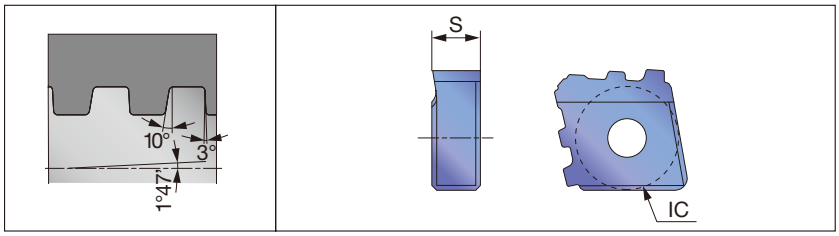
Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (mm)						Internal insert (mm)					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment	Designation	Grade Coated AH725	BW	INSL	S	Chip breaking attachment
(5.08)	5	1/16	0.75	**CR-5B75-4E**	●	20.4	15.9	5.1	CR-5B75 / 5B1-4E-CB	**CR-5B75-3I**	●	16	15.8	5.2	CR-8R / 10R-3I / 4I-CB

● : Line up / 10 pieces per package



Full-profile insert (chaser)

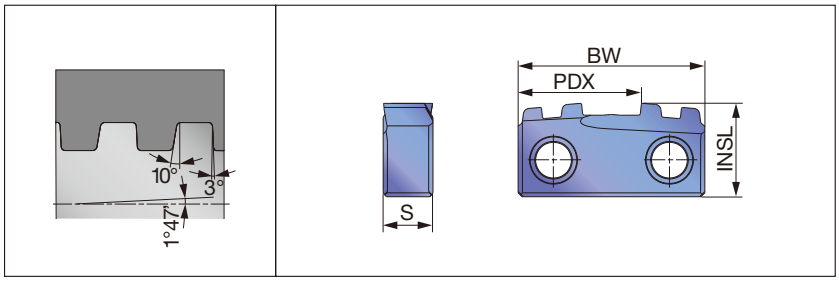
Pitch (Reference) (mm)	TPI	Taper		External insert (mm)			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S
(5.08)	5	1/16	0.75	**CNGA-5B75-3E**	●	19.05	6.4

Note: Toolholders need to be customized for these types of inserts.

● : Line up / 10 pieces per package

Reference pages: API Buttress On edge : External toolholders → E052, Internal toolholders → E066
API Buttress Full-profile insert : External toolholders → E053, Internal toolholders → E067

API Buttress (for Energy industry)



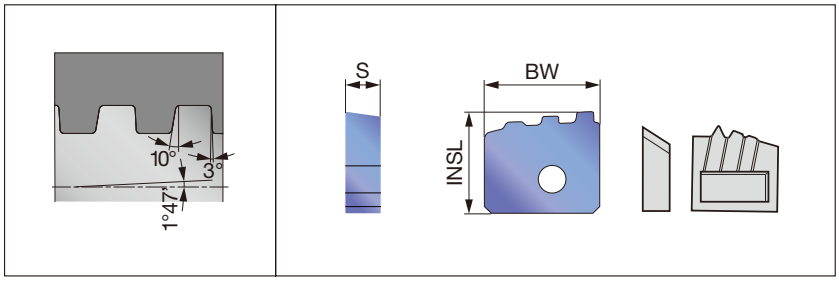
Full-profile insert

Insert size	Pitch (Reference) (mm)	TPI	Hand of cut	Internal insert (mm)					
				Designation	Grade / Coated T05HP	BW	INSL	PDX	S
22	(5.08)	5	R	**CR-5B75-2I-W24**	●	24	12	15.85	6.4

Note: Toolholders need to be customized for these types of inserts.

● : Line up / 10 pieces per package

API Buttress (for Energy industry) For tool-rotating machines



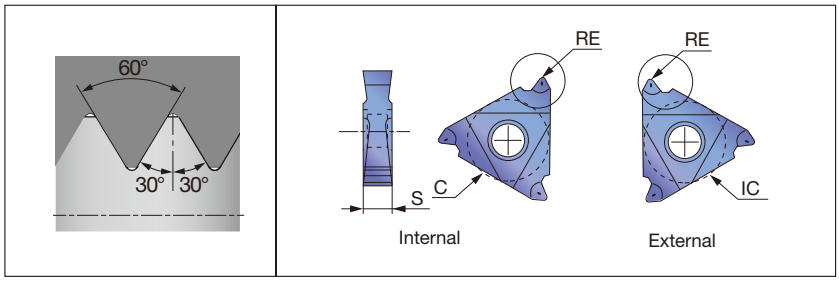
Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (mm)						
		mm/mm	TPF	Designation	Grade / Coated AH725	BW	INSL	S	RE	Chip breaking attachment
(5.08)	5	1/16	0.75	**CR-5B75-3E#1**	●	17	14.6	5.2		TD46015B75-1-CBW/CAVITY
(5.08)	5	1/16	0.75	**CR-5B75-3E#2**	●	17	14.8	5.2		TD46025B75-2-CBW/CAVITY
(5.08)	5	1/16	0.75	**CR-5B75-3E#3**	●	17	15	5.2		TD46035B75-3-CBW/CAVITY

Note: Toolholders need to be customized for these types of inserts.

● : Line up / 10 pieces per package

API Rotary shoulder connection (for Energy industry)



Applicable toolholder

External	Internal
MTVNR-3232M54	HS**-LNFR-54API

Full-profile insert (Double side)

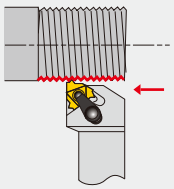
Pitch (Reference) (in)	TPI	Connection	Taper		Designation	Grade Coated	IC (in)	S (in)	RE (in)
			mm/mm	TPF		AH725			
(0.250)	4	V-0.038R	1/6	2	**LDS54428FT-CB#1**	●	0.625	0.252	0.038
(0.250)	4	V-0.038R	1/4	3	**LDS54438FT-CB#2**	●	0.625	0.252	0.038
(0.250)	4	V-0.050	1/6	2	**LDS54425FT-CB#3**	●	0.625	0.252	0.025
(0.250)	4	V-0.050	1/4	3	**LDS54435FT-CB#4**	●	0.625	0.252	0.025
(0.200)	5	V-0.040	1/4	3	**LDS54530FT-CB#5**	●	0.625	0.252	0.020

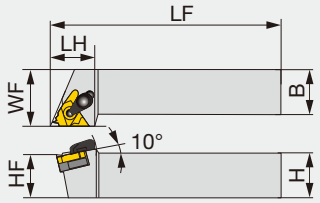
● : Line up / 10 pieces per package

Reference pages: External toolholders → E051, Inernal toolholders → E066

CER/L

External threading toolholder, alternative clamping of screw-on or clamp-on only for DT type





Right hand (R) shown.

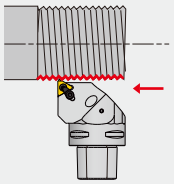
Inch	H	B	LF	LH	HF	WF	Insert
CER/L123DT	0.750	0.750	5.000	0.870	0.750	1.000	16ER/L...
CER/L163DT	1.000	1.000	6.000	1.000	1.000	1.250	16ER/L...
CER203DT	1.250	1.250	6.000	1.250	1.250	1.500	16ER...
CER164DT	1.000	1.000	6.000	1.000	1.000	1.250	22ER...
CER204DT	1.250	1.250	6.000	1.250	1.250	1.500	22ER...

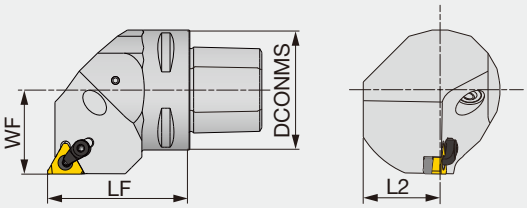
Metric	H	B	LF	LH	HF	WF	Insert
CER/L1212H16DT	12	12	100	24	12	16	16ER/L...
CER/L1616H16DT	16	16	100	24	16	20	16ER/L...
CER/L2020K16DT	20	20	125	24	20	25	16ER/L...
CER/L2525M16DT	25	25	150	28	25	32	16ER/L...
CER/L2525M22DT	25	25	150	31.3	25	32	22ER/L...
CER3232P16T	32	32	170	32	32	40	16ER...
CER3232P22T	32	32	170	32	32	40	22ER...
CER2525M27T	25	25	150	34	25	32	27ER...
CER3232P27T	32	32	170	34	32	40	27ER...

Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using DT type, please remove either the clamp set or the insert clamping screw.

C-CER/L

External threading toolholder, alternative clamping of screw-on or clamp-on





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	Insert
C3CER/L22040-16ERN(2)	32	40	20	22	16ER/L...
C4CER/L27050-16ERN(2)	40	50	25	27	16ER/L...
C5CER/L35060-16ER(1)	50	60	32	35	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	16ER/L...
C6CER/L45065-16ER(1)	63	65	41	45	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	16ER/L...

(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

Reference pages: Inserts → E010 - E011, E015, E017 - E030, E032

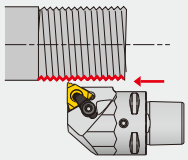
SPARE PARTS

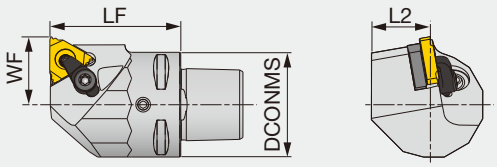
Designation	Clamp set	Clamping screw	Coolant parts	Shim screw	Shim	Shim set	Wrench 1	Wrench 2	Wrench 3
CER/L123-DT, CER/L163-DT	CSP16	CSTB-3.5ST	DTS5 - 3.5	A16 - 1DT	-	P-3.5	T-15F	-	-
CER203-DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-3.5	T-15F	-	-
CER164-DT, CER204-DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-20F	-	-
CER/L**16DT	CSP16	CSTB-3.5ST	-	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
CER/L2525M22DT	CSP22	CSTB-4ST	-	DTS6-4	GX22-1DT	-	P-4	T-15F	T-20F
CER3232P16T	CSP16	-	-	-	-	A16-1	-	T-15F	-
CER3232P22T	CSP22	-	-	-	-	NXE22-1	-	T-20F	-
CER**27T	CSP27	-	-	-	-	NXE27-1	P-4	-	-
C3CE*22040-16ERN, C4CE*27050-16ERN	CSP16	CSTB-3.5ST	SATZ-M8X1-M3	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
C5CE*35060-16ER, C6CE*45065-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
C5CE*35060-16ERN, C6CE*45065-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-

TUNGCAP

C-CEL-ERN-B

External threading toolholder, alternative clamping of screw-on or clamp-on





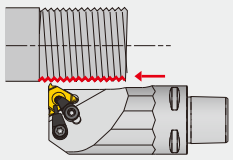
Metric	DCONMS	LF	L2	WF	Insert
C3CEL22040-16ERN-B	32	40	18	22	16ER...

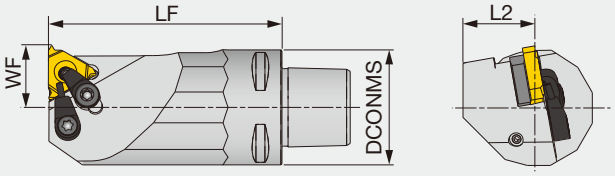
Applicable for 7 MPa coolant
Cannot be used for boring

C-CEL-ERB-CHP

Tube connection

External threading toolholder, alternative clamping of screw-on or clamp-on, with high pressure coolant capability





Metric	DCONMS	LF	L2	WF	Insert
C3CEL18065-16ERB-CHP	32	65	20	18	16ER...

Applicable for 14 MPa coolant
Cannot be used for boring

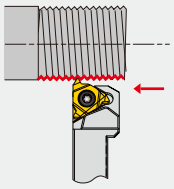
SPARE PARTS

Designation	Shim	Shim screw	Clamping screw	Clamping screw	Wrench 1	Wrench 2	Coolant parts	Coolant unit
C3CEL22040-16ERN-B	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M8X1-M3	-
C3CEL18065-16ERB-CHP	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	-	S-CU-CHP

Reference pages: Inserts → E010 - E011, E015, E017 - E030

JSE2R16-CHP

Screw-on external threading toolholders-High-pressure coolant capability with tube and direct connection



Tube connection

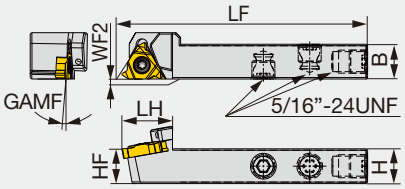


Fig. 1

Direct connection

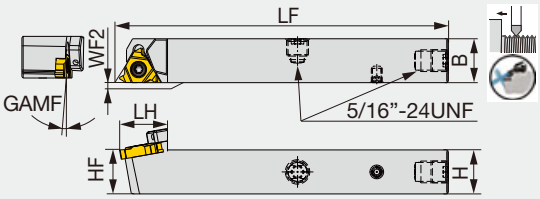


Fig. 2

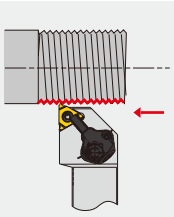
Inch	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R08F16-CHP	0.500	0.500	3.344	0.748	0.500	0.000	1°	1	16ER...
JSE2R08X16-CHP	0.500	0.500	4.750	0.748	0.500	0.000	1°	2	16ER...
JSE2R10X16-CHP	0.625	0.625	4.750	0.748	0.625	0.000	1°	2	16ER...

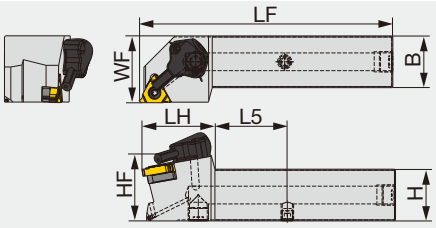
Metric	H	B	LF	LH	HF	WF2	GAMF	Fig.	Insert
JSE2R1212F16-CHP	12	12	85	19	12	0	1°	1	16ER...
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	2	16ER...
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	2	16ER...

SER-X-CHP-MC

Direct connection

Screw-on external threading toolholders-High-pressure coolant capability with tube and direct connection





Metric	H	B	LF	LH	HF	WF	L5	Insert
SER2020X16-CHP-MC	20	20	107	36	20	25	27.9	16ER...
SER2525X16-CHP-MC	25	25	122	36	25	32	33.75	16ER...
SER2525X22-CHP-MC	25	25	122	36	25	32	33.75	22ER...

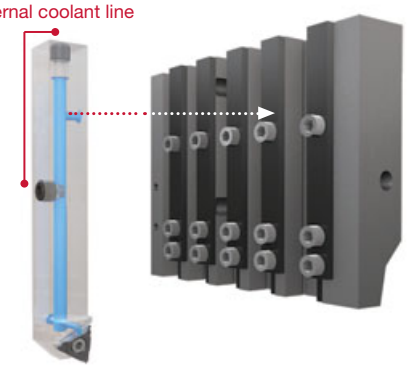
SPARE PARTS

Designation	Clamping screw	Wrench	Shim screw	Shim	Coolant unit	Coolant plug	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F	-	-	-	SR5/16UNFTL360	P-4
SER**X16-CHP-MC	CSTB-3.5ST	T-15F	DTS5-3.5	A16-1DT	CU-V-CHP	PLUGG1/8-6.5TL360	P-3.5
SER**X22-CHP-MC	CSTB-4ST	T-15F	DTS6-4	GX22-1DT	CU-CW-CHP	PLUGG1/8-6.5TL360	P-4

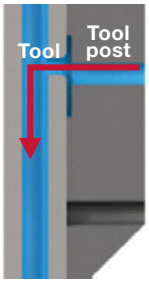
No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant line



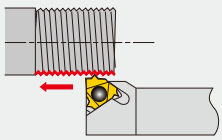
Detailed view of the coolant flow after connection

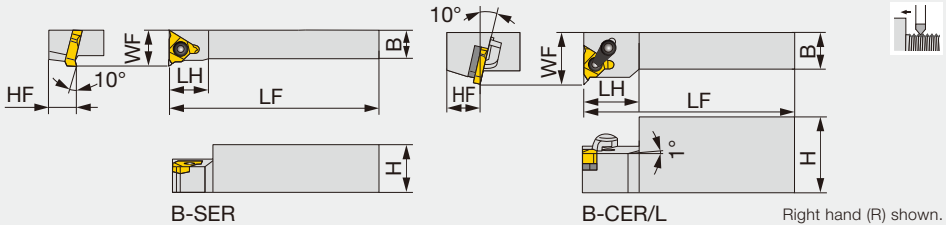


Reference pages: Inserts → E010 - E011, E015, E017 - E030, E032

B-S/CER/L

External threading toolholder for Swiss lathes

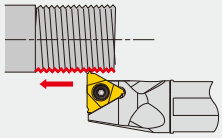


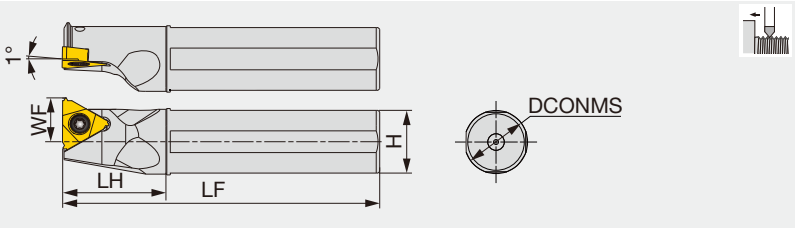


Metric	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

JS-SEL16

External threading toolholder for Swiss lathes





Metric	DCONMS	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25H-SEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Note: Use the right-hand insert (16ER...) for a left-hand holder (JS***-SEL...).

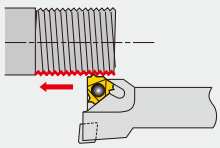
SPARE PARTS

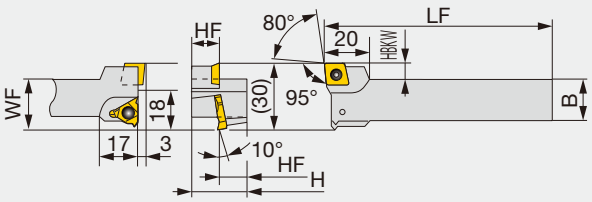
Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F
JS***-SEL16	-	-	CSTB-3.5	T-15F

Reference pages: Inserts → E010 - E011, E015, E017 - E030

BC-SER

External threading toolholder for multi-functional Swiss lathes

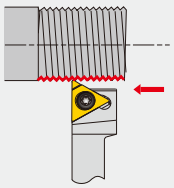


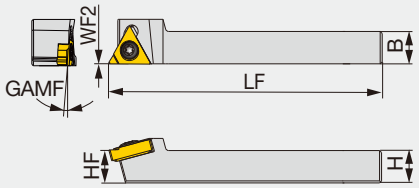


Metric	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

SER

Screw-on external threading toolholders





Metric	H	B	LF	HF	WF2	GAMF	Insert
SER0808H11	8	8	100	8	0	1.5°	11ER...
SER1010H11	10	10	100	10	0	1.5°	11ER...

SPARE PARTS



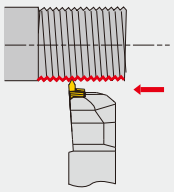


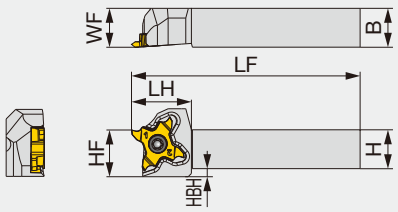
Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F
SER**H11	SR M2.6-L6.7-S11	T-8/5

Reference pages: Inserts → E010 - E011, E015, E017 - E030

STCR/L-18

External grooving and threading toolholder





Right hand (R) shown.

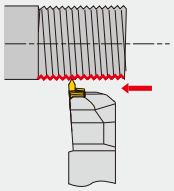
Inch	H	B	LF	LH	HF	WF	HBH	Insert	Torque
STCR/L06-18	0.375	0.375	4.750	0.730	0.375	0.375	0.177	TC*18...	0.89
STCR/L08-18	0.500	0.500	4.750	0.730	0.500	0.500	0.098	TC*18...	0.89
STCR/L10-18	0.625	0.625	4.750	0.730	0.625	0.625	-	TC*18...	0.89
STCR/L12-18	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89
STCR/L16-18	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89

Metric	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
STCR/L1010X18	10	10	120	18.5	10	10	4.5	TCT18...	1.2
STCR/L1212F18	12	12	85	18.5	12	12	2.5	TCT18...	1.2
STCR/L1212X18	12	12	120	18.5	12	12	2.5	TCT18...	1.2
STCR/L1616X18	16	16	120	18.5	16	16	-	TCT18...	1.2
STCR/L2020H18	20	20	100	18.5	20	20	-	TCT18...	1.2
STCR/L2020X18	20	20	120	23	20	25	-	TCT18...	1.2
STCR/L2525Z18	25	25	135	23	25	30	-	TCT18...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (STCR...); the left-hand insert (TC*18L...) for a left-hand holder (STCL...).

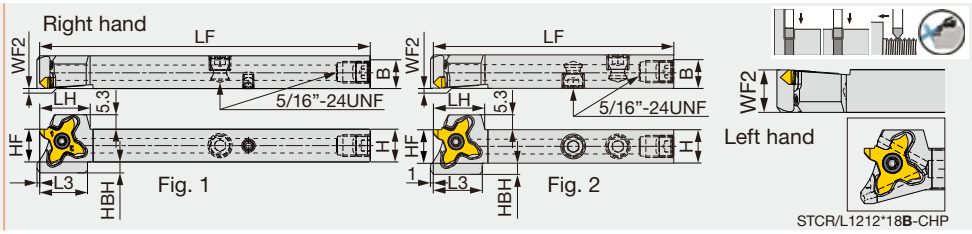
STCR/L-18-CHP

External grooving and threading toolholder, with high pressure coolant capability



Direct connection

Tube connection



Inch	H	B	LF	LH	*L3*	HF	WF2**	HBH	Fig.	Insert	Torque
STCR/L08F18-CHP	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	2	TC*18...	0.89
STCR/L08X18-CHP (1)	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	1	TC*18...	0.89
STCR/L10X18-CHP (1)	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	1	TC*18...	0.89
STCR/L12-18-CHP	0.750	0.750	4.750	0.900	-	0.750	-	-	2	TC*18...	0.89
STCR/L16-18-CHP	1.000	1.000	5.500	0.900	-	1.000	-	-	2	TC*18...	0.89

Metric	H	B	LF	LH	HBL	HF	WF2**	HBH	Fig.	Insert	Torque*
STCR/L1012H18-CHP(1)	10	12	100	17.1	10	17.1	0/12	4	1	TCT18...	1.2
STCR/L1212F18B-CHP	12	12	120	18.5	17.5	12	0/12	4	2	TCT18...	1.2
STCR/L1212X18B-CHP(1)	12	12	120	18.5	17.5	12	0/12	4	1	TCT18...	1.2
STCR/L1616X18-CHP(1)	16	16	120	18.5	-	16	0/16	-	1	TCT18...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
WF2** : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Note: This toolholder can be used with threading and grooving inserts.
Use the right-hand insert (TC*18R...) for a right-hand holder (STCR...); the left-hand insert (TC*18L...) for a left-hand holder (STCL...).

SPARE PARTS





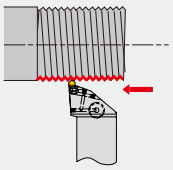
Designation	Clamping screw	Wrench
STCL..., STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR..., STCR**18-CHP	CSTC-4L100DL	T-1008/5

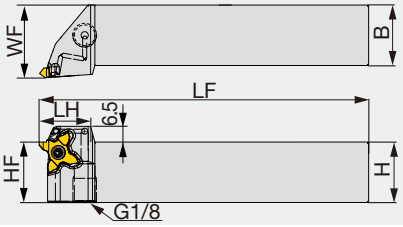
Reference pages: Inserts → E012

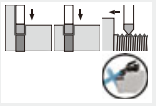
STCR/L-18-CHP

Tube connection

External theading with high pressure coolant capability







Right hand (R) shown.

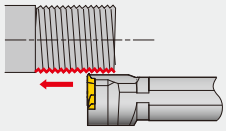
Inch	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.89
STCR/L16-18-CHP	1.000	1.000	5.500	0.900	-	1.000	1.250	-	TC*18...	0.89

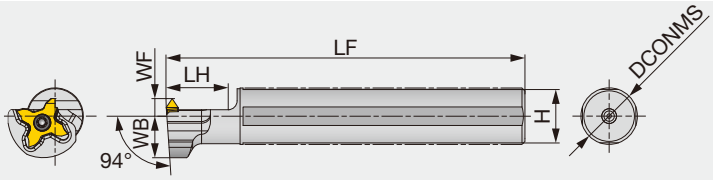
Metric	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque*
STCR/L2020X18-CHP	20	20	120	23	-	20	25	-	TC*18...	1.2
STCR/L2525Z18-CHP	25	25	135	23	-	25	30	-	TC*18...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
Note: Use the right-hand insert (TC*18R...) for a right-hand toolholders (STCR...); the left-hand insert (TC*18L...) for a left-hand holder (STCL...).

JS-STCL18

External grooving and threading toolholder with round shank







Metric	DCONMS	LF	LH	H	WB	WF	Insert	Torque*
JS14H-STCL18	14	100	20	13	14	6	TCT18R...	1.2
JS159F-STCL18	15.875	85	20	15	14	6	TCT18R...	1.2
JS16F-STCL18	16	85	20	15	14	6	TCT18R...	1.2
JS19G-STCL18	19.05	90	20	18	14	6	TCT18R...	1.2
JS19X-STCL18	19.05	120	20	18	14	6	TCT18R...	1.2
JS20G-STCL18	20	90	20	19	14	6	TCT18R...	1.2
JS20X-STCL18	20	120	20	19	14	6	TCT18R...	1.2
JS22X-STCL18	22	120	20	21	12.25	10	TCT18R...	1.2
JS25H-STCL18	25	100	20	24	12.25	10	TCT18R...	1.2
JS254X-STCL18	25.4	120	20	24	12.25	10	TCT18R...	1.2

Torque* : Recommended clamping torque (N·m)
Note: Use the right-hand insert (TC*18R...) for a left-hand holder (STCL...).

SPARE PARTS



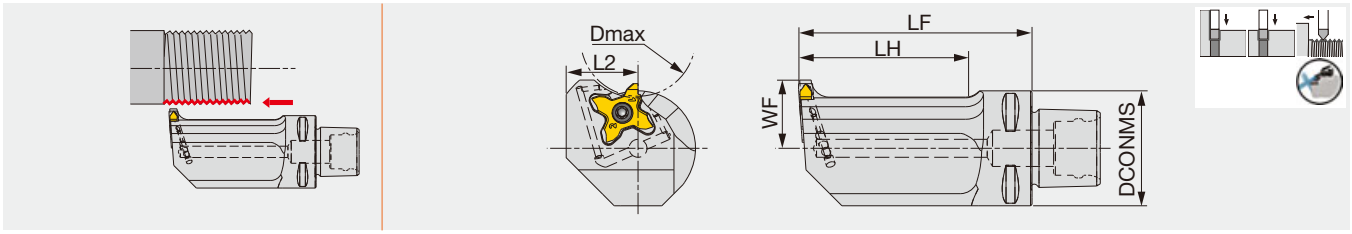


Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP, JS**STCL18	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → E012

C-STCFL-18-CHP

External grooving and threading toolholder, with high pressure coolant capability

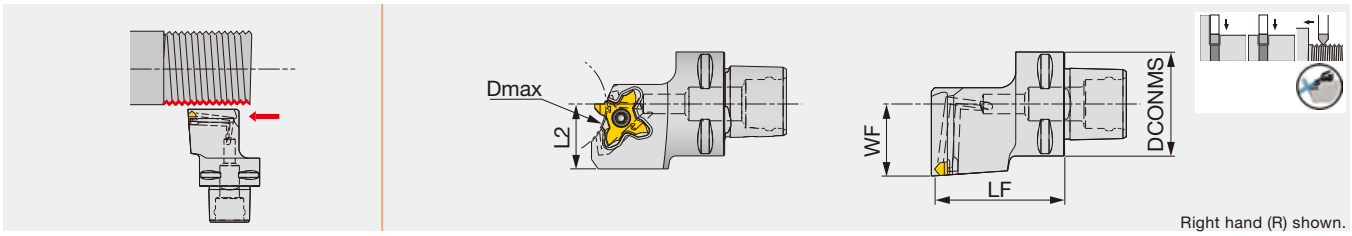


Metric	DCONMS	LF	LH	L2	WF	Dmax	Insert	Torque*
C3STCFL18040-18-CHP	32	40	21.5	20	18	32	TC*18R...	1.2
C3STCFL18065-18-CHP	32	65	46.5	20	18	32	TC*18R...	1.2

Torque* : Recommended clamping torque (N·m)
Applicable for 14 MPa coolant
Note: Use the right-hand insert (TC*18R...) for a left-hand holder (STCFL...).

C-STCR/L-18-CHP

External grooving and threading toolholder, with high pressure coolant capability



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	Dmax	Insert	Torque*
C3STCR/L22040-18-CHP	32	40	20	22	32	TC*18...	1.2
C4STCR/L27050-18-CHP	40	50	25	27	75 (1)	TC*18...	1.2

Torque* : Recommended clamping torque (N·m)
Applicable for 14 MPa coolant
(1) The value for 3.5 mm groove depth. Dmax varies according to the grooving depth required. For further information, see Tungaloy Report #416 TetraMini-Cut/TetraForce-Cut.
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (STCR...); the left-hand insert (TC*18L...) for a left-hand holder (STCL...).

SPARE PARTS

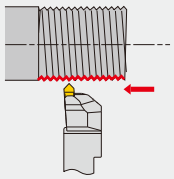



Designation	Clamping screw	Wrench
C*STCL**-18-CHP	CSTC-4L100DR	T-1008/5
C3STCFL**-18-CHP, C*STCR**-18-CHP	CSTC-4L100DL	T-1008/5

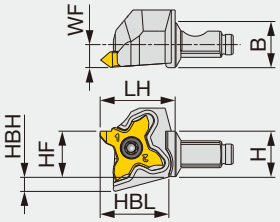
Reference pages: Inserts → E012

QC12-STCR/L

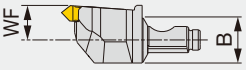
External grooving and threading head

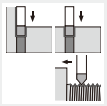


Right hand



Left hand



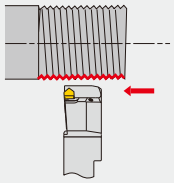


Metric	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	3.9 (0.154")	17.9 (0.705")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	3.9 (0.154")	18.3 (0.720")	9 (0.354")	TC*18L...	1.2 (0.89)

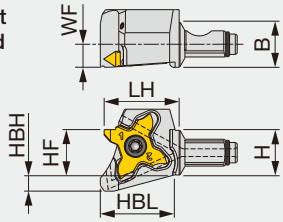
Torque* : Recommended clamping torque: N·m (lbs·ft)
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

QC12-STCR/L-CHP

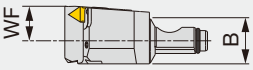
External grooving and threading head, with high pressure coolant capability

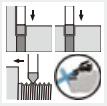


Right hand



Left hand





Metric	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18-CHP	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18-CHP	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	9 (0.354")	TC*18L...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
Through-coolant head
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

SPARE PARTS



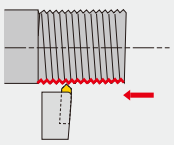


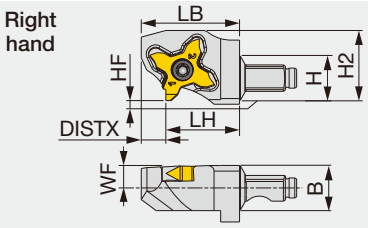
Designation	Clamping screw	Wrench	O-ring
QC12-STCR18	CSTC-4L100DL	T-1008/5	-
QC12-STCL18	CSTC-4L100DR	T-1008/5	-
QC12-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

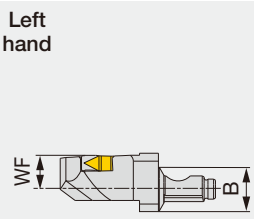
Reference pages: Inserts → E012

QC12-STCR/L-Y

Y-axis turning modular head for external grooving and threading







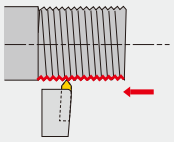


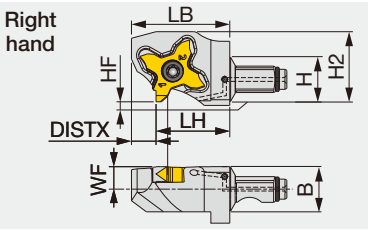
Metric	H	B	LH	HF	WF**	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6/9 (0.236" / 0.354")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

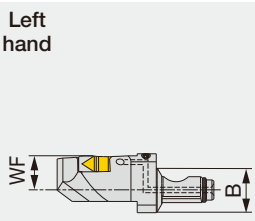
Torque* : Recommended clamping torque: N·m (lbs·ft)
WF** : The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

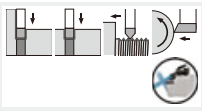
QC12-STCR/L-Y-CHP

Y-axis turning modular head for external grooving and threading, with high pressure coolant capability









Metric	H	B	LH	HF	WF**	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y-CHP	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6 (0.236")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
WF** : The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Through-coolant head
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

SPARE PARTS



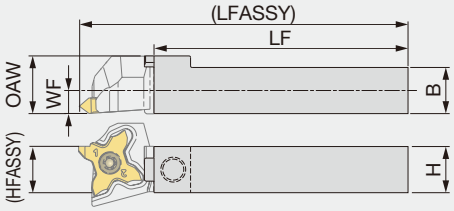


Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-Y	CSTC-4L100DL	T-1008/5	-
QC12-STCL18-Y	CSTC-4L100DR	T-1008/5	-
QC12-STCR18-Y-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-Y-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

Reference pages: Inserts → E012

QC-1212

Shank for modular heads



Inch	H	B	WF	LF	OAW	HFASSY	LFASSY(1)	Torque
QC-08F	0.500	0.500	0.236	2.559	0.591	0.500	3.346	2.21
QC-08X	0.500	0.500	0.236	3.937	0.591	0.500	4.724	2.21

Metric	H	B	WF	LF	OAW	HFASSY	LFASSY(1)	Torque*
QC-1212F	12	12	6	65	15	12	85	3
QC-1212X	12	12	6	100	15	12	120	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) The size is true when the modular head with LH = 19.5 mm is mounted.

QC-1212-CHP

Shank for modular heads, with high pressure coolant capability

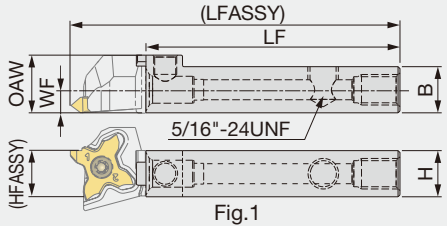


Fig.1

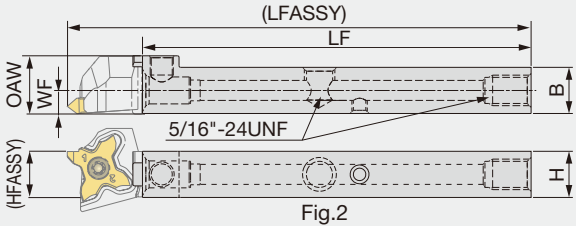


Fig.2

Inch	H	B	LF	WF	OAW	HFASSY	LFASSY(1)	Torque	Fig.
QC-08F-CHP	0.500	0.500	2.559	0.236	0.591	0.500	3.346	2.21	1
QC-06H-CHP (*)	0.375	0.500	3.268	0.197	0.512	0.375	3.937	1.84	2
QC-08X-CHP (*)	0.500	0.500	3.937	0.236	0.591	0.500	4.724	2.21	2
QC-10X-CHP (*)	0.625	0.625	3.897	0.315	0.787	0.625	4.724	6.27	2

Metric	H	B	LF	WF	OAW	HFASSY	LFASSY(1)	Torque*	Fig.
QC-1212F-CHP	12	12	65	6	15	12	85	3	1
QC-1212X-CHP (*)	12	12	100	6	15	12	120	3	2

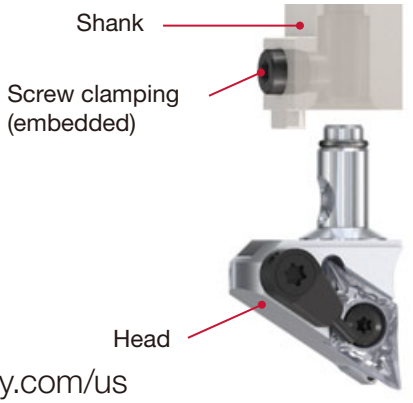
Torque: Recommended clamping torque: lbs·ft (*N·m)
Through-coolant shank
(*) : Compatible to the direct internal coolant supply system without the use of external coolant hose.
(1) The size is true when the modular head with LH = 19.5 mm is mounted.

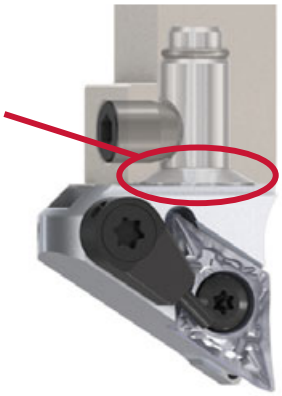
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
QC-08F/X, QC-1212*	SRM6X0.5-26977	P-3	-	-	-	-
QC-06H-CHP	SRM5X0.5	P-2.5	SR 5/16UNF TL360	P-4	SSHM4-4-TB	P-2
QC-08F-CHP, QC-1212F-CHP	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	-	-
QC-08X-CHP, QC-1212X-CHP	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
QC-10X-CHP	SRM8X0.5	P-5	SR 5/16UNF TL360	P-4	SSHM4-6-TB	P-2

Unique coupling design

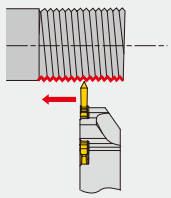
Simply loosen the clamping screw for easy tool exchanges.
Unique coupling design allows extremely high repeatability.





JSXXR/L

Threading and parting toolholder, for Swiss lathes



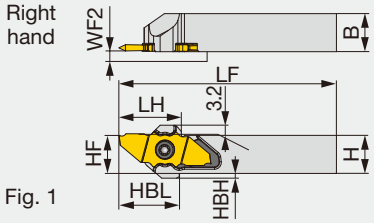


Fig. 1

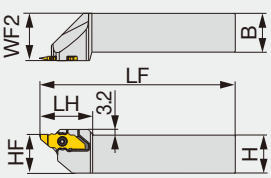
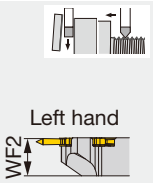


Fig. 2



Right hand (R) shown.

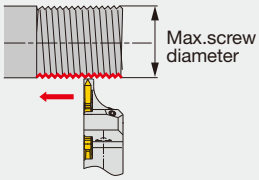
Inch	H	B	LF*	LH	HF	WF2(1)	HBL	HBH	Insert	Torque	Fig.
JSXXR/L063	0.375	0.375	4.646	0.774	0.375	0.008 / 0.386	0.748	0.12	JX...	0.89	1
JSXXR/L083	0.500	0.500	3.268	0.774	0.500	0.008 / 0.386	0.748	0.06	JX...	0.89	1
JSXXR/L103	0.625	0.625	4.646	0.774	0.625	0.008 / 0.386	-	0.06	JX...	0.89	1
JSXXR/L123	0.750	0.750	3.950	0.886	0.750	0.008 / 0.742	-	-	JX...	0.89	1
JSXXR/L163	1.000	1.000	5.350	1.339	1.000	1.250 / 1.250	-	-	JX...	0.89	2

Metric	H	B	LF	LH	HF	WF2(1)	HBL	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	10	10	118	17.65	10	0.2/9.8	17	3	JX**12...	1.2	1
JSXXR/L1212F09	12	12	83	17.65	12	0.2/11.8	17	1.5	JX**12...	1.2	1
JSXXR/L1212X09	12	12	118	17.65	12	0.2/11.8	17	1.5	JX**12...	1.2	1
JSXXR/L1616X09	16	16	118	17.65	16	0.2/15.8	-	-	JX**12...	1.2	1
JSXXR/L2020H09	20	20	98	20.5	20	0.2/19.8	-	-	JX**12...	1.2	1
JSXXR/L2525Z09	25	25	133	32	25	30	-	-	JX**12...	1.2	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/H/X-CHP

Parting and threading toolholder, with high pressure coolant capability



Direct connection

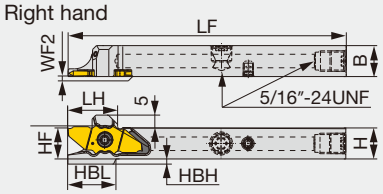


Fig. 1

Tube connection

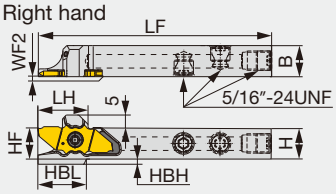
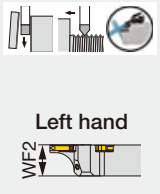


Fig. 2



Inch	H	B	LF	LH	HF	WF2(1)	HBL	HBH	Insert	Torque	Fig.
JSXXR/L083X-CHP	0.500	0.500	4.750	≤ 0.764	0.500	0.008/0.492	0.736	0.051	JX**06...,12...,16...	0.89	1
JSXXR/L103X-CHP	0.625	0.625	4.750	≤ 0.764	0.625	0.008/0.617	0.736	0	JX**06...,12...,16...	0.89	1
JSXXR/L083F-CHP	0.500	0.500	3.344	≤ 0.764	0.5	0.008/0.492	0.736	0.051	JX*G06...,12...,16..., 20...	0.89	1

Metric	H	B	LF	LH	HF	WF2(1)	HBL	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(2)	10	12	100	17.2	10	0.2/11.8	16.7	3	JX**12...	1.2	1
JSXXR/L1212F09-CHP	12	12	83	17.4	12	0.2/11.8	16.8	2	JX**12...	1.2	2
JSXXR/L1212X09-CHP(2)	12	12	118	17.4	12	0.2/11.8	16.8	2	JX**12...	1.2	1
JSXXR1616X09-CHP(2),(3)	16	16	118	17.4	16	0.2	16.7	2.5	JX**12...	1.2	1
JSXXR/L1616X09B-CHP(2)	16	16	118	17.4	16	0.2/15.8	16.7	-	JX**12...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(2) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(3) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS

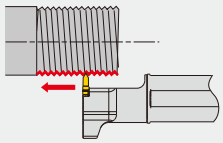
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR...	CSTC-4L100DL	T-1008/5	-	-	-	-
JSXXL...	CSTC-4L100DR	T-1008/5	-	-	-	-
JSXXR**F...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

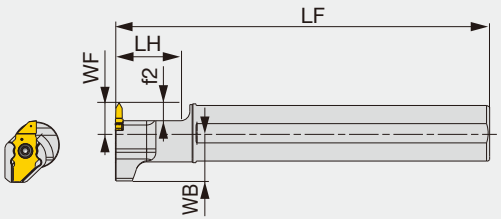
Reference pages: Inserts → E012

DUOJUST CUT

JS-SXXL09

External threading toolholder, for 2 corner inserts





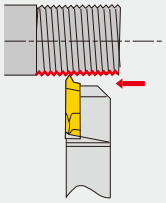
Metric	DCONMS	H	B	LF	LH	WB	WF	f2	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	8	4	JX**12...	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	8	4	JX**12...	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	8	4	JX**12...	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	8	4	JX**12...	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	8	4	JX**12...	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	8	4	JX**12...	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	8	4	JX**12...	1.2

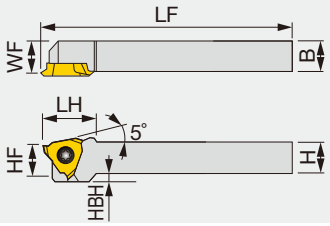
Torque* : Recommended clamping torque (N·m)

J-SERIES

JSTTR/L

External toolholder for Swiss lathes





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L063	0.375	0.375	5.000	0.6875	0.375	0.375	0.100	JTTR/L30...
JSTTR/L083	0.500	0.500	5.000	0.6875	0.500	0.500	-	JTTR/L30...
JSTTR/L103	0.625	0.625	5.000	0.6875	0.625	0.625	-	JTTR/L30...

Metric	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L30...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1616X3	16	16	120	16.5	16	15.5	-	JTTR/L30...

Recommended clamping torque: 0.89 lbs·ft (1.2 N·m)

SPARE PARTS





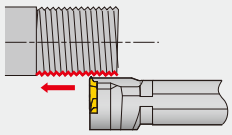


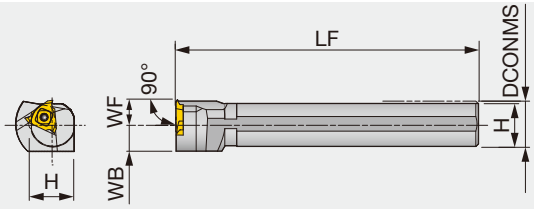
Designation	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Wrench 2 (Optional)
JSTTR/L...	-	CSTB-4SD	-	T-8F	(T-8L)
JS***-SXXL09	CSTC-4L055L	-	T-1008/5	-	-

Reference pages: DuoJust-Cut : Inserts → E012
J-Series : Inserts → E013

JS-TTL3

External toolholder for Swiss lathes



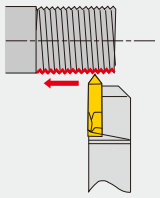


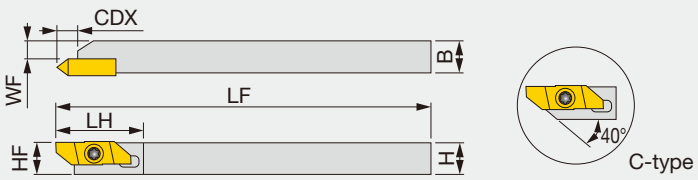
Metric	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

JSXBR

External threading toolholder for Swiss lathes





Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

Note: Can be wrenched also from the back with a double-head screw.
This toolholder can be used for JXB back-turning insert and JXT threading insert.

SPARE PARTS





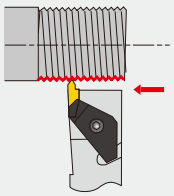
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JS**-TTL3	CSTB-4S	T-15F	-
JSXBR...	CSTB-4SD	T-8F	(T-8L)

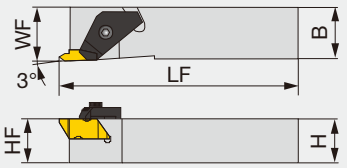
Reference pages: Inserts → E013, E016

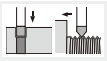
TUNGT-CLAMP

FLASR/L

External grooving and threading toolholder, for Swiss lathes







Right hand (R) shown.

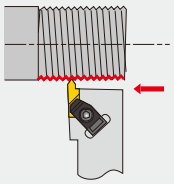
Inch	HF	H	B	LF	WF	Insert	Torque
FLASR/L-082B	0.500	0.500	0.500	6.000	0.500	FL*-3**R/L...	2.21
FLASR-102B	0.625	0.625	0.625	4.500	0.625	FL*-3**R...	2.21
FLASR/L-103B	0.625	0.625	0.625	4.500	0.625	FL*-3**R/L...	2.21

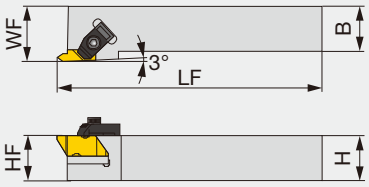
Metric	H	B	LF	HF	WF	Insert	Torque*
FLASR/L-1616M3	16	16	125	16	16	FLT-3...	3

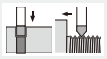
Torque* : Recommended clamping torque: lbs·ft (N·m)
Note: Use the right-hand insert (FLT-3R...) for a right-hand holder (FLASR...); the left-hand insert (FLT-3L...) for a left-hand holder (FLASL...).

FLSR/L

External grooving and threading toolholder







Right hand (R) shown.

Inch	H	B	LF	HF	WF	Insert	Torque
FLSR/L-122B	0.750	0.750	4.500	0.750	1.000	FL*-3**R/L...	2.21
FLSR/L-162C	1.000	1.000	5.000	1.000	1.250	FL*-3**R/L...	2.21
FLSR/L-123B	0.750	0.750	4.500	0.750	1.000	FL*-3**R/L...	2.21
FLSR/L-163C	1.000	1.000	5.000	1.000	1.250	FL*-3**R/L...	2.21
FLSR/L-164D	1.000	1.000	6.000	1.000	1.250	FL*-3**R/L...	2.21
FLSR/L-203D	1.250	1.250	6.000	1.250	1.500	FL*-4**R/L...	2.21
FLSR/L-204D	1.250	1.250	6.000	1.250	1.500	FL*-4**R/L...	2.21
FLSR/L-206D	1.250	1.250	6.000	1.250	1.500	FL*-4**R/L...	2.21
FLSR/L-82V	0.500	0.500	3.500	0.750	0.750	FL*-4**R/L...	2.21

Metric	H	B	LF	HF	WF	Insert	Torque*
FLSR/L-2020M3	20	20	125	20	32	FLT-3...	3
FLSR/L-2525M3	25	25	150	25	32	FLT-3...	3

Torque* : Recommended clamping torque: lbs·ft (N·m)
Note: Use the right-hand insert (FLT-3R...) for a right-hand holder (FLSR...); the left-hand insert (FLT-3L...) for a left-hand holder (FLSL...).

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-102B, FLASR-103B	TF-184	S-412	5/32HEX
FLASL-103B	TF-185	S-412	5/32HEX
FLSR-122B, FLSR-162C, FLSR-82V	TF-74	S-310	7/64HEX
FLSL-122B, FLSL-162C, FLSL-82V	TF-75	S-310	7/64HEX
FLSR-123B, FLSR-163C, FLSR-164D, FLSR-204D	TF-72	S-412	5/32HEX
FLSL-123B, FLSL-163C, FLSR-203D	TF-73	S-412	5/32HEX

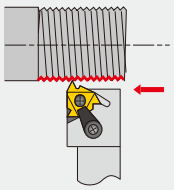
Metric SPARE PARTS

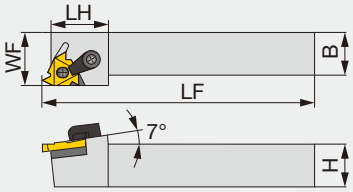
Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

Reference pages: Inserts → E014

MTVNR-5

External threading toolholder, for single-sided lay down inserts



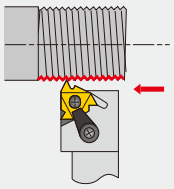


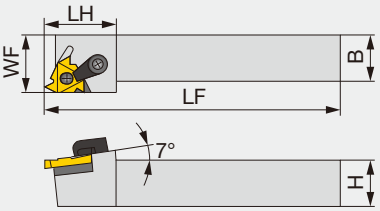
Inch	B	H	LF	LH	WF	Insert
MTVNR-2054	1.250	1.250	7.000	1.530	1.500	L535B**EXT-FC
MTVNR-2454	1.500	1.500	7.084	1.429	1.750	L535B**EXT-FC

Metric	H	B	LF	LH	WF	Insert
MTVNR-2525M5	25	25	152	39	31.8	L535B**EXT-FC
MTVNR-3232M5	32	32	178	39	38.1	L535B**EXT-FC

MTVNR-54

External threading toolholder, for double-sided lay down inserts





Metric	H	B	LF	LH	WF	Insert
MTVNR-3232M54	32	32	178	39	38.1	LDS54**FT-CB#...

SPARE PARTS

Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR..., MTVNR-3232M54	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX



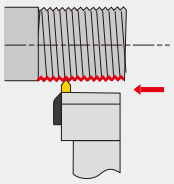
External, right hand

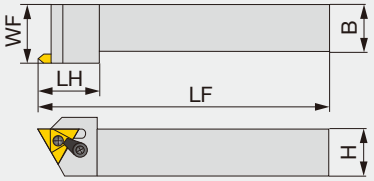
Internal, right hand

Reference pages: MTVNR-5 : Inserts → E032
MTVNR-54 : Inserts → E035

MTVOR

Multi-clamp external threading toolholder, for on edge inserts





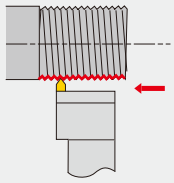
Inch	H	B	LF	LH	WF	Insert
MTVOR-164	1.000	1.000	6.000	1.230	1.250	TNM*43...
MTVOR-204	1.250	1.250	7.000	1.230	1.500	TNM*43...
MTVOR-205	1.250	1.250	7.000	1.430	1.500	TNM*54...
MTVOR-206	1.250	1.250	7.000	1.620	1.500	TNM*66...
MTVOR-2069	1.250	1.250	7.000	1.620	1.500	TNM*69...

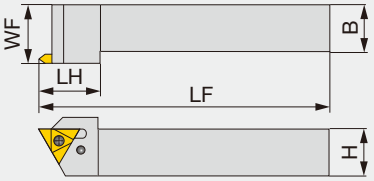
Metric	H	B	LF	LH	WF	Insert
MTVOR-2525M4	25	25	150	31	31.7	TNM*43...
MTVOR-3232M4	32	32	170	32	38.1	TNM*43...
MTVOR-2525M5	25	25	150	36	31.7	TNM*54...
MTVOR-3232M5	32	32	178	36	38.1	TNM*54...

Note: STVOR is recommended for TNMC insert although the insert can be used on multi-clamp (M type) toolholder.

STVOR

Screw-on external threading toolholder, for on edge inserts





Inch	H	B	LF	LH	WF	Insert
STVOR-165	1.000	1.000	6.000	1.430	1.250	TNMC54...
STVOR-206	1.250	1.250	7.000	1.620	1.500	TNMC66...

Metric	H	B	LF	LH	WF	Insert
STVOR-2525M4	25	25	150	31	31.7	TNMC43...
STVOR-3232M4	32	32	178	31	38.1	TNMC43...
STVOR-2525M5	25	25	150	36	31.7	TNMC54...
STVOR-3232M5	32	32	178	36	38.1	TNMC54...

SPARE PARTS





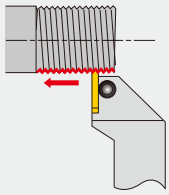


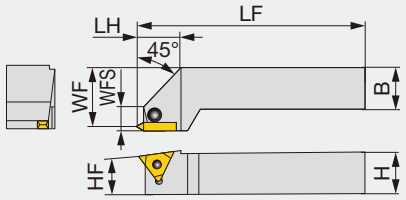

Designation	Clamping screw	Lock pin	Wrench 1	Wrench 2	Clamp (Optional)	Clamping screw (Optional)
MTVOR-164/204, MTVOR-**M4	-	NL-44	-	3/32HEX	TC-190	STC-5
MTVOR-205, MTVOR-**M5	-	NL-56	-	1/8HEX	TC-250	STC-11
STVOR-**M4	SD2	-	T-20TORX	3/32HEX	TC-190	STC-9
STVOR-165 STVOR-**M5	SD3	-	T-20TORX	1/8HEX	TC-250	STC-11
STVOR-206	SD4	-	-	1/8HEX, 5/32HEX	TC-310	STC-8

Reference pages: Inserts → E029 - E031, E033

TT-R/LE

TT-type pin-lock external threading toolholder



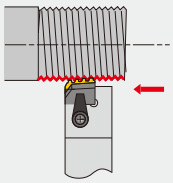


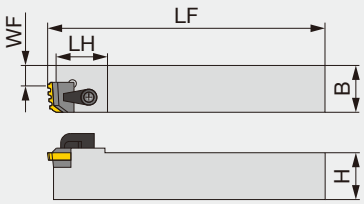
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	WFS	Insert
TT-2525R/LE	25	25	150	25	25	32	15	TTR/L42...

CLVOR

External threading toolholder, for chaser inserts





Inch	WF	LF	LH	H	B	Insert
CLVOR-208	0.800	7.000	1.250	1.250	1.250	CR***

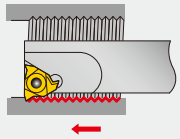
Metric	WF	LF	LH	H	B	Insert
CLVOR-25M6	16.1	177	32	25	25	CR...
CLVOR-32M6	16.1	177	32	32	32	CR...
CLVOR-40M8	21	170	38.1	40	40	CR-5B75-4E

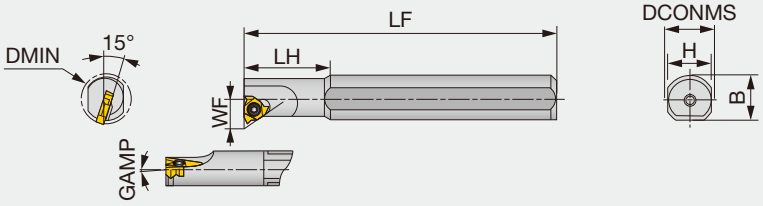
SPARE PARTS

Designation	Shim	Shim screw	Clamp 1	Clamp 2	Clamping screw	Wrench 1	Wrench 2
TT-2525R/LE	-	-	CP91	-	DS-6	-	P-3
CLVOR-25M6	TF1207	SF80	-	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-32M6	TF1207	SF85	-	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-208, CLVOR-40M8	TF8132-E	SF60	-	TC-311	STC-4	T-20TORX	5/32HEX

Reference pages: TT-R/LE : Inserts → E014, E016
CLVOR : Inserts → E026, E031 - E034

Internal threading bars, Screw-on clamp





Inch	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMP	Coolant hole	Insert
SIR0375K11	Steel	0.470	0.620	0.260	5.000	1.000	0.574	-	1.5°	Without	11IR...
SIR0375K11B	Steel	0.470	0.625	0.280	5.000	0.980	0.574	-	1.5°	With	11IR...
SIR0500M16B	Steel	0.640	0.625	0.390	6.000	1.260	0.472	-	1.5°	With	16IR...
SIR0625P16B	Steel	0.750	0.750	0.450	7.000	1.570	0.709	-	1.5°	With	16IR...
SIR0750P16	Steel	1.000	0.750	0.510	7.000	-	0.984	-	1.5°	Without	16IR...
SIR0750P16B	Steel	0.900	0.750	0.900	7.000	-	1.181	-	1.5°	With	16IR...
SIR0750P22	Steel	0.950	0.750	0.510	7.000	-	1.260	-	1.5°	Without	22IR...
SIR1000R16B	Steel	1.160	1.000	0.650	8.000	-	1.570	-	1.5°	With	16IR...
SIR1000R22	Steel	1.200	1.000	0.710	8.000	-	-	-	1.5°	Without	22IR...
SIR1250S16	Steel	1.420	1.250	0.770	10.00	-	-	-	1.5°	Without	16IR...
SIR1250S22	Steel	1.500	1.250	0.850	10.00	-	-	-	1.5°	Without	22IR...
SIR 1500 T27	Steel	1.800	1.500	1.000	12.00	-	-	-	1.5°	Without	27IR...

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMP	Coolant hole	Insert
SIR0005H06	STEEL	6.4	12	4.3	100	12	11	-	1.5°	Without	06IR...
SIR0007K08	STEEL	8	16	5.3	125	18	15	-	1.5°	Without	08IR...
SIR0005H06CB	CARBIDE	6.4	6	4.3	100	25	5	-	1.5°	With	06IR...
SIR0007K08CB	CARBIDE	7.8	8	5.3	125	30	7	-	1.5°	With	08IR...

Note: Use the right-hand insert (**IR...) for a right-hand holder (SIR...).
Recommend over 1 mm clearance between internal diameter of thread and each tools DMIN.

Applicable thread size

Description	ISO metric	Unified IRA60 Insert	Parallel pipe IRA55 Insert
SIR0005H06...	≥ M9	≥ 3/8-24 UNF	≥ G1/8
SIR0007K08...	≥ M11	≥ 7/16-20 UNF	≥ G1/4

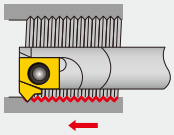
SPARE PARTS

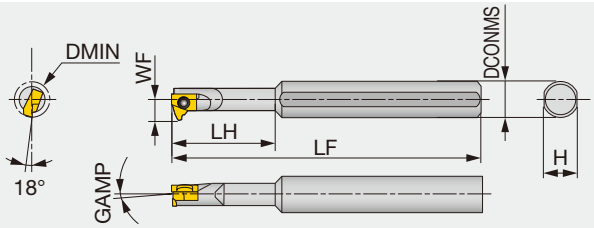
Designation	Clamping screw	Shim	Shim screw	Wrench	Seal cap
SIR0500M16B	SR5-40-L9.7-S16S	-	-	T-10/5	PL062
SIR0625P16B	SR 5-40-L9.7-S16S	-	-	T-10/5	PL 075
SIR0750P16	SR5-40-L12.2S16	AI16	SR5-40-L6.8-A16	T-10/5	-
SIR0750P16B	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16	T-10/5	PL 075
SIR0750P22	SR8-32-L12-S22S	-	-	T-20/5	-
SIR1000R16B	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16	T-10/5	PL 100
SIR1000R22	SR8-32-L15-S22	AI22	SR8-32-L5.8-A22	T-20/5	-
SIR1250S16	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16, SR 8-32-L5.8-A22	T-10/5	-
SIR1250S22	SR8-32-L15-S22	AI22	SR8-32-L5.8-A22	T-20/5	-
SIR 1500 T27	SRM5-L22-S40	AI27	SRM5-L5.8-A27	T-25/3	-
SIR0005H06...	SR 14-552	-	-	T-6F-S	-
SIR0007K08...	SR 14-558	-	-	T-6F-S	-

Reference pages: SIR : Inserts → E010, E015, E017

SNR-2/3

Screw-on internal threading toolholder





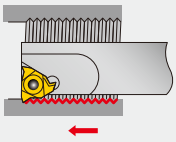
Carbide shank

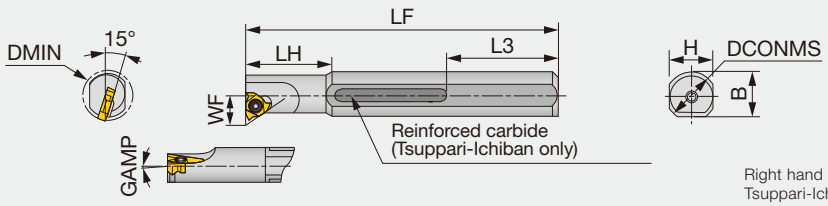
Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	Insert
SNR0006H06-2	Steel	8	8	4.7	100	18	7	2°	6IR...
SNR0006H06-3	Steel	8	8	4.7	100	18	7	3°	6IR...
SNR0008H06-2	Steel	10	8	5.7	100	18	7	2°	6IR...
SNR0008H06-3	Steel	10	8	5.7	100	18	7	3°	6IR...
SNR0006K06SC-2	Carbide	8	8	4.7	125	30	7	2°	6IR...
SNR0006K06SC-3	Carbide	8	8	4.7	125	30	7	3°	6IR...
SNR0008K06SC-2	Carbide	10	8	5.7	125	18	7	2°	6IR...
SNR0008K06SC-3	Carbide	10	8	5.7	125	18	7	3°	6IR...

Note: Use the right-hand insert (6IR...) for a right-hand holder (SNR...).

SNR/L

Screw-on internal threading toolholder





Right hand (R) shown.
Tsuppari-Ichiban shank.

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMP	Insert
TSNR0016Q16	Reinforced	19	16	10.6	180	40	59	15	-	1°	16IR...
TSNR0020R22	Reinforced	24	20	13.9	200	50	49	18	-	1°	22IR...
SNR/L0010K11	Steel	12	16	6.6	125	25	-	15	15.5	1°	11IR/L...
SNR0010K11-2	Steel	12	16	6.6	125	25	-	15	15.5	2°	11IR...
SNR0010K11-3	Steel	12	16	6.6	125	25	-	15	15.5	3°	11IR...
SNR/L0013L11	Steel	15	16	8.2	140	32.5	-	15	15.5	1°	11IR/L...
SNR0013L11-2	Steel	15	16	8.2	140	32.5	-	15	15.5	2°	11IR...
SNR0013L11-3	Steel	15	16	8.2	140	32.5	-	15	15.5	3°	11IR...
SNR/L0016M16	Steel	19	16	10.6	150	40	-	15	15.5	1°	16IR/L...
SNR0016M16-2	Steel	19	16	10.6	150	40	-	15	15.5	2°	16IR...
SNR0016M16-3	Steel	19	16	10.6	150	40	-	15	15.5	3°	16IR...
SNR/L0020Q22	Steel	24	20	13.9	180	50	-	18	19	1°	22IR/L...
SNR0020Q22-2	Steel	24	20	13.9	180	50	-	18	19	2°	22IR...
SNR0020Q22-3	Steel	24	20	13.9	180	50	-	18	19	3°	22IR...
SNR0010M11SC	Carbide	13	10	7.4	150	24	-	9	-	1°	11IR...
SNR0010M11SC-2	Carbide	13	10	7.4	150	24	-	9	-	2°	11IR...
SNR0010M11SC-3	Carbide	13	10	7.4	150	24	-	9	-	3°	11IR...
SNR0012P11SC	Carbide	15	12	8.5	170	28	-	11	-	1°	11IR...
SNR0012P11SC-2	Carbide	15	12	8.5	170	28	-	11	-	2°	11IR...
SNR0012P11SC-3	Carbide	15	12	8.5	170	28	-	11	-	3°	11IR...
SNR/L0016R16SC	Carbide	20	16	11.9	200	35	-	15	-	1°	16IR/L...
SNR0016R16SC-2	Carbide	20	16	11.9	200	35	-	15	-	2°	16IR...

Note: Use the right-hand insert (**IR...) for a right-hand holder (SNR...); the left-hand insert (**IL...) for a left-hand holder (SNL...).

SPARE PARTS

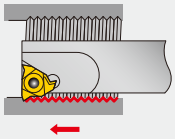
Designation	Clamping screw	Wrench
SNR0006H06..., SNR0006K06SC...	CSTB-2L040	T-6F
SNR0008H06..., SNR0008K06SC...	CSTB-2L	T-6F
TSNR0016Q16, SNR/L0016M16..., SNR/L0016R16SC...	CSTB-3.5	T-15F
TSNR0020R22, SNR/L0020Q22...	CSTB-4	T-15F
SNR/L00**11..., SNR00**11SC...	CSTB-2.5	T-8F

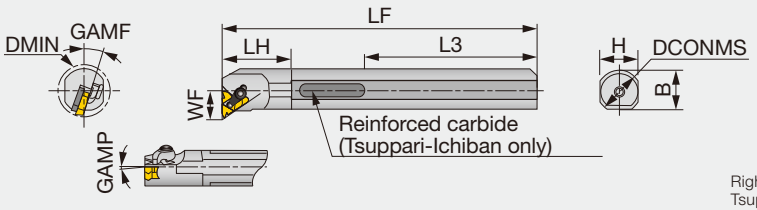
Reference pages: SNR-2/3 : Inserts → E010, E015, E017, E023 - E025
SNR/L : Inserts → E010 - E011, E015, E017 - E019, E021 - E032

TUNGTHREAD

CNR/L

Clamp-on internal threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.
Tsuppari-Ichiban shank.

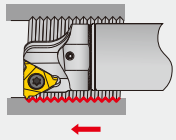
Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMF	GAMP	Insert
TCNR0020R16DT	Reinforced	24	20	14	200	30	49	18	-	15°	1°	16IR...
TCNR0025S16DT	Reinforced	29	25	16.5	250	38	64	23	-	15°	1°	16IR...
TCNR0025S22DT	Reinforced	30	25	18.2	250	38	64	23	-	15°	1°	22IR...
CNR/L0020P16	Steel	24	20	14	170	30	-	18	19	15°	1°	16IR/L...
CNR/L0025R16	Steel	29	25	16.5	200	38	-	23	24	15°	1°	16IR/L...
CNR/L0032S16	Steel	37	32	20.1	250	48	-	30	31	15°	1°	16IR/L...
CNR/L0025R22	Steel	30	25	18.2	200	38	-	23	24	15°	1°	22IR/L...
CNR/L0032S22	Steel	38	32	21.9	250	48	-	30	31	15°	1°	22IR/L...
CNR0040T27	Steel	46	40	26.9	300	60	-	37	38.5	10°	1°	27IR...

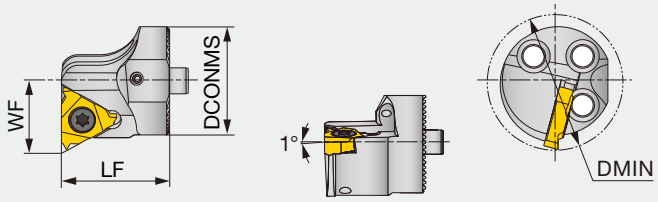
Note: A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
Use the right-hand insert (**IR...) for a right-hand holder (CNR...); the left-hand insert (**IL....) for a left-hand holder (CNL...).
When using DT type, please remove either the clamp set or the insert clamping screw.

BOREMEISTER

S-SNR-H

Screw-on clamp exchangeable boring head, for threading inserts





Right hand (R) shown.

Metric	DMIN	DCONMS	WF	LF	Shank	Insert
S20-SNR16-H	25	20	14	25	D20	16IR...
S25-SNR16-H	32	25	17	25	D25	16IR...
S32-SNR16-H	40	32	22	32	D32	16IR...
S40-SNR16-H	50	40	27	32	D40, D50, D60	16IR...

SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set R	Shim set L	Wrench 1	Wrench 2	Wrench 3
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	-	P-3.5	T-15F	-
TCNR0025S22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	-	P-4	T-15F	T-20F
CNR/L**16	CSP16	-	-	-	A16-1	A16-1	-	T-15F	-
CNR/L**22	CSP22	-	-	-	NXN22-1	NXE22-1	-	T-20F	-
CNR0040T27	CSP27	-	-	-	NXN27-1	NXE27-1	P-4	-	-
S**-SNR16-H	-	CSTB-3.5	-	-	-	-	-	T-15F	-

Reference pages: CNR/L : Inserts → E010 - E011, E015, E017 - E019, E021 - E030
S-SNR-H : Inserts → E010 - E011, E015, E018 - E019, E021 - E030

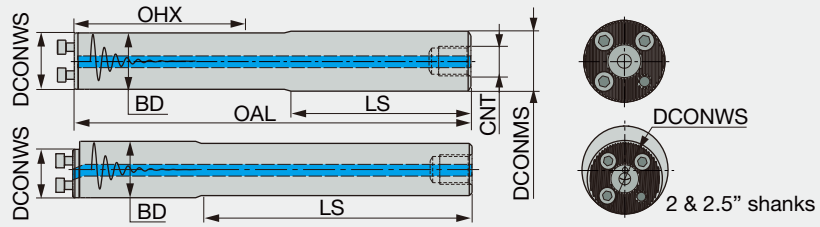
BOREMEISTER

Straight Shank

Anti-vibration bars with through coolant for interchangeable turning heads

Fig. 1

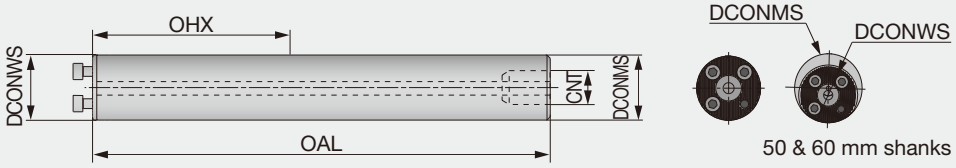
Fig. 2



Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

Straight Shank

Anti-vibration bars with through coolant for interchangeable turning heads



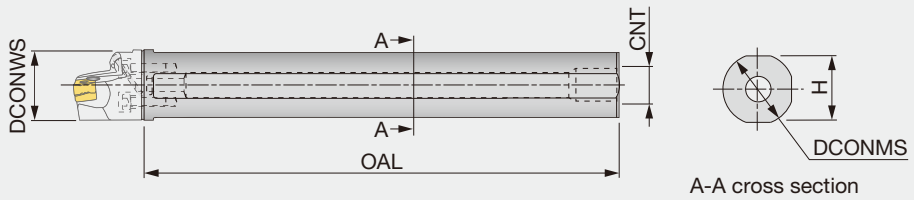
Metric	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156.3	92	G1/8
G16-L204-10D-E	Carbide	16	16	204.3	140	-
D20-L200-7D-C	Steel	20	20	200.3	120	G1/4
G20-L260-10D-E	Carbide	20	20	260.3	180	-
D25-L255-7D-C	Steel	25	25	257.5	155	G1/4
D25-L330-10D-C	Steel	25	25	332.5	230	G1/4
D32-L320-7D-C	Steel	32	32	323	192	G3/8
D32-L416-10D-C	Steel	32	32	419	288	G3/8
D40-L408-7D-C	Steel	40	40	411	248	G1/2
D40-L528-10D-C	Steel	40	40	531	368	G1/2
D50-L518-7D-C	Steel	40	50	523	318	G1/2
D50-L668-10D-C	Steel	40	50	673	468	G1/2
D60-L628-7D-C	Steel	40	60	633	388	G3/4
D60-L808-10D-C	Steel	40	60	813	568	G3/4

SPARE PARTS

Designation	Clamping screw	Wrench
D16-L..., G16-L..., D.625..., G.625...	SRM3X10DIN912	HW2.5
D20-L..., G20-L..., D.750..., G.750...	SR55-2M3.5X10	HW2.5
D25-L..., D1.00...	SRM4X12DIN912	HW3.0
D32-L..., D1.25...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L..., D1.50..., D2.00..., D2.50...	SRM6X16DIN912-12.9	HW5.0

D#4D-SH

Steel shank for internal turning, with through coolant



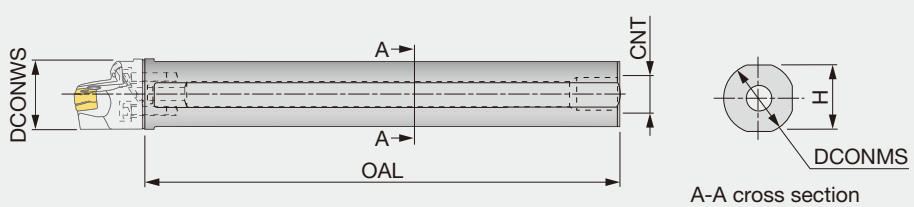
Inch	Material	DCONWS	DCONMS	OAL	CNT	H
D1.00-L7.2-4D-SH	Steel	1.000	1.000	7.200	UNF-2B 1/2"-20	0.921
D1.25-L8.74-4D-SH	Steel	1.250	1.250	8.740	UNF-2B 1/2"-20	1.142
D1.50-L10.75-4D-SH	Steel	1.575	1.500	10.75	UNF-2B 1/2"-20	1.339
D2.00-L14.72-4D-SH	Steel	1.575	2.000	14.72	UNF-2B 1/2"-20	1.811
D2.50-L18.74-4D-SH	Steel	1.575	2.500	18.74	UNF-2B 1/2"-20	2.283

SPARE PARTS

Designation	Clamping screw	Wrench
D1.00-L7.2-4D-SH	SR M4X12DIN912	HW 3.0
D1.25-L8.74-4D-SH	SR M5X12 DIN912	HW 4.0
D1.50-L10.75-4D-SH	SRM6X16DIN912-12.9	HW 5.0
D2.00-L14.72-4D-SH	SRM6X16DIN912-12.9	HW 5.0
D2.50-L18.74-4D-SH	SRM6X16DIN912-12.9	HW 5.0

D#4D-SH

Steel shank for internal turning, with through coolant



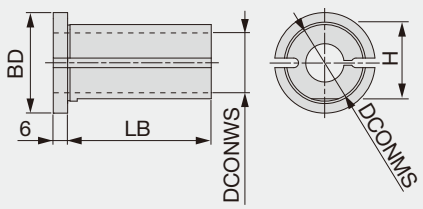
Metric	Material	DCONWS	DCONMS	OAL	CNT	H
D16-L105-4D-SH	Steel	16	16	105	UNC-2B 3/8"-16	15
D20-L140-4D-SH	Steel	20	20	140	UNFC-2B 3/8"-24	18
D25-L200-4D-SH	Steel	25	25	200	UNF-2B 1/2"-20	23
D32-L218-4D-SH	Steel	32	32	218	UNF-2B 1/2"-20	29
D40-L283-4D-SH	Steel	40	40	283	UNF-2B 1/2"-20	36

SPARE PARTS

Designation	Clamping screw	Wrench
D16**4D-SH	SRM3X10DIN912	HW2.5
D20**4D-SH	SR55-2M3.5X10	HW2.5
D25**4D-SH	SRM4X12DIN912	HW3.0
D32**4D-SH	SRM5X12DIN912	HW4.0
D40**4D-SH	SRM6X16DIN912-12.9	HW5.0

RSL sleeve

Split sleeve for anti-vibration bar



Inch	DCONWS	DCONMS	BD	LB	H
RSL-31.8-15.9-L66	0.625	1.250	1.654	2.362	1.210
RSL-31.8-19-L66	0.750	1.250	1.654	2.362	1.210
RSL-31.8-25.4-L66	1.000	1.250	1.654	2.362	1.210
RSL-38.1-15.9-L106	0.625	1.500	1.969	3.937	1.461
RSL-38.1-19-L106	0.750	1.500	1.969	3.937	1.461
RSL-38.1-25.4-L106	1.000	1.500	1.969	3.937	1.461
RSL-38.1-31.8-L106	1.250	1.500	1.969	3.937	1.461
RSL-50.8-19-L126	0.750	2.000	2.362	4.724	1.941
RSL-50.8-25.4-L126	1.000	2.000	2.362	4.724	1.941
RSL-50.8-31.8-L126	1.250	2.000	2.362	4.724	1.941
RSL-50.8-38.1-L126	1.500	2.000	2.362	4.724	1.941
RSL-63.5-31.8-L156	1.250	2.500	2.756	5.906	2.441
RSL-63.5-38.1-L156	1.500	2.500	2.756	5.906	2.441
RSL-63.5-50.8-L156	2.000	2.500	2.756	5.906	2.441
Metric	**DCONWS**	**DCONMS**	**BD**	**LB**	**H**
RSL-32-16-L66	16	32	42	60	31
RSL-32-20-L66	20	32	42	60	31
RSL-32-25-L66	25	32	42	60	31
RSL-40-16-L76	16	40	50	70	38.5
RSL-40-20-L76	20	40	50	70	38.5
RSL-40-25-L76	25	40	50	70	38.5

C#-SH-CHP / C#-SH-E-CHP

PSC compatible adapter with steel or carbide core

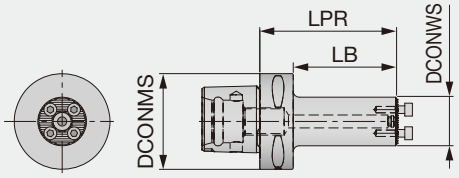


Fig. 1

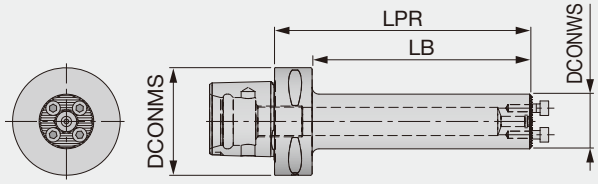


Fig. 2

Metric	Material	DCONWS	DCONMS	LPR	LB	Fig
C4-SH-D16-2.5D-CHP	Steel	16	40	40	20	1
C4-SH-D20-2.5D-CHP	Steel	20	40	50	30	1
C4-SH-D25-2.5D-CHP	Steel	25	40	55	35	1
C4-SH-D32-2.5D-CHP	Steel	32	40	75	55	1
C4-SH-D40-3D-CHP	Steel	40	40	80	80	1
C6-SH-D20-5D-E-CHP	Carbide	20	63	100	78	2
C6-SH-D25-5D-E-CHP	Carbide	25	63	115	93	2
C6-SH-D32-5D-E-CHP	Carbide	32	63	150	128	2
C6-SH-D40-5D-E-CHP	Carbide	40	63	185	163	2

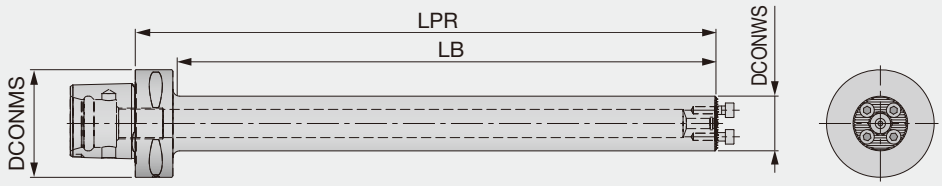
SPARE PARTS

Designation	Clamping screw	Wrench
C4**D16...	SRM3X10DIN912	HW2.5
C4/C6**D20...	SR55-2M3.5X10	HW2.5
C4/C6**D25...	SRM4X12DIN912	HW3.0
C4/C6**D32...	SRM5X12DIN912	HW4.0
C4/C6**D40...	SRM6X16DIN912-12.9	HW5.0

BOREMEISTER

C6-9D-C

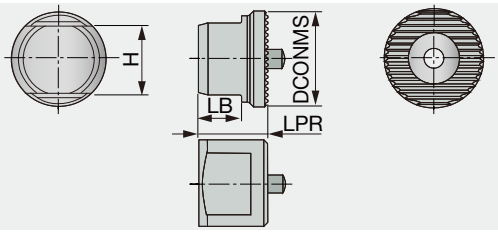
PSC adapter with anti vibration, L/D = 9



Metric	Material	DCONWS	DCONMS	LPR	LB	WT (kg)
C6-D25-L230-9D-C	Steel	25	63	230.5	200.1	1.65
C6-D32-L288-9D-C	Steel	32	63	288.5	259.5	2.73
C6-D40-L368-9D-C	Steel	40	63	368.5	339	4.45

AVC-SET

Center height set up device



Metric	DCONMS	H	LPR	LB	Applicable shank
AVC-SET 16-25	20	15	14.5	8.9	16, 20, 25
AVC-SET 32-60	29	16	17.5	11.43	32, 40, 50, 60

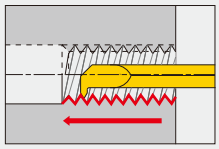
SPARE PARTS

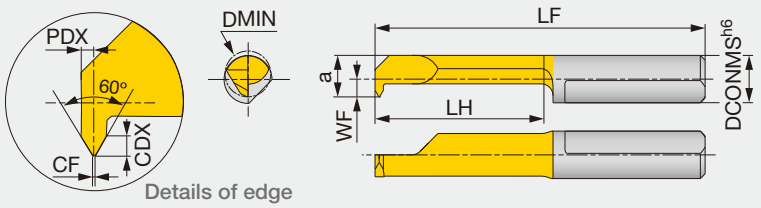
Designation	Clamping screw	Wrench
C6-D25...	SRM4X12DIN912	HW3.0
C6-D32...	SRM5X12DIN912	HW4.0
C6-D40...	SRM6X16DIN912-12.9	HW5.0

TINYMINI TURN

TBIR

Solid boring bar for internal threading



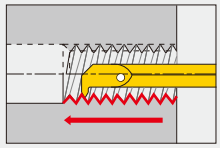


Metric	SH725	Pitch	DMIN	CF- $^{0}_{0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
TBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
TBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
TBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
TBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
TBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
TBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75

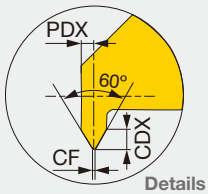
● : Line up

JBIR

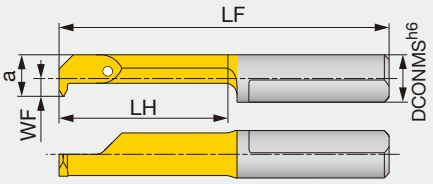
Solid boring bars for threading (metric)



with coolant hole



Details of edge



Right hand (R) shown.

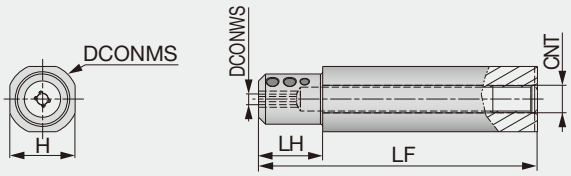
Metric	SH725	Pitch	DMIN	CF $^{0}_{-0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

● : Line up

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes





Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBS12-4-L80C-4N	12	4	80	10	10.3	Rc1/16
JBBS127-4-L80C-4N	12.7	4	80	10	11.6	Rc1/16
JBBS14-4-L80C-4N	14	4	80	10	12	Rc1/8
JBBS159-4-L100C-4N	15.875	4	100	10	14.58	Rc1/8
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-4-L100C-4N	16	4	100	10	15	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-4-L100C-4N	19.05	4	100	20	17.2	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-4-L100C-4N	20	4	100	20	18	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-4-L100C-4N	22	4	100	20	20	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-4-L100C-4N	25	4	100	23	23	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-4-L100C-4N	25.4	4	100	23	23.4	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

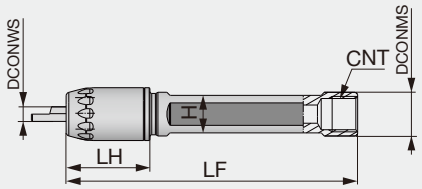
SPARE PARTS

Designation	Clamping screw	Wrench
JBBS**-4-L***C-4N	SSHM5-6PF-S	P-2.5
JBBS**-7-L***C-4N	SSHM5-4PF-S	P-2.5

JBBSA-C

Collet chuck sleeve with internal coolant supply





Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBSA12-4-L80C	12	4	80	23	10.3	Rc1/8
JBBSA127-4-L80C	12.7	4	80	23	11.6	Rc1/8
JBBSA14-4-L80C	14	4	80	23	12	Rc1/8
JBBSA159-4-L100C	15.875	4	100	23	14	Rc1/8
JBBSA159-7-L100C	15.875	7	100	23	14	Rc1/8
JBBSA16-4-L100C	16	4	100	23	14	Rc1/8
JBBSA16-7-L100C	16	7	100	23	14	Rc1/8
JBBSA19-4-L120C	19.05	4	120	23	17.2	Rc1/8
JBBSA19-7-L120C	19.05	7	120	23	17.2	Rc1/8
JBBSA20-4-L120C	20	4	120	23	18	Rc1/8
JBBSA20-7-L120C	20	7	120	23	18	Rc1/8
JBBSA22-4-L135C	22	4	135	23	20	Rc1/8
JBBSA22-7-L135C	22	7	135	23	20	Rc1/8
JBBSA25-4-L135C	25	4	120	23	23	Rc1/8
JBBSA25-7-L135C	25	7	120	23	23	Rc1/8
JBBSA254-4-L120C	25.4	4	120	23	23.4	Rc1/8
JBBSA254-7-L120C	25.4	7	120	23	23.4	Rc1/8

SPARE PARTS

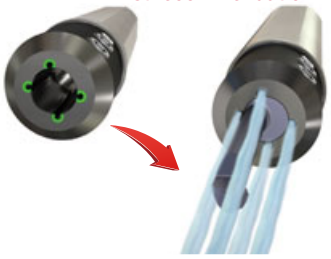
Designation	Cap	Wrench
JBBSA**-4-L...	CAP-A-4	WRENCH-A-4
JBBSA**-7-L...	CAP-A-7	WRENCH-A-7

New sleeve with four coolant holes for optimal performance

- Optimum sleeve option for all boring operations. Sleeves with four coolant holes can be used with all TinyMini-Turn tools
- 4 streams of coolant jets are directed to the cutting point, improving chip evacuation
- Sufficient coolant supply eliminates chip bird-nesting on the tools or workpiece, enabling trouble-free, unattended operation over an extended time
- Significantly prolongs tool life

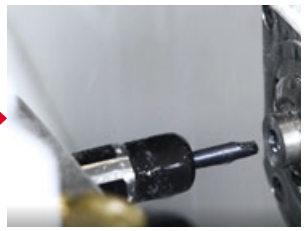
Internal coolant sleeve

First recommendation!





Excellent chip evacuation



- No chip jamming
- No machine stoppage
- No downtime

Conventional (External coolant)





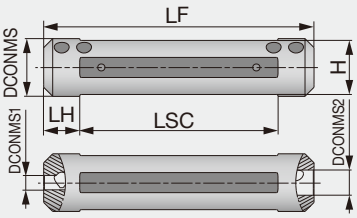


- Chip jamming
- Increased machine downtime

JBBS

Sleeve for external coolant supply





Metric	DCONMS	DCONWS1	DCONWS2	LF	LH	LSC	H
JBBS12-4-4	12	4	4	75	10	55	10.3
JBBS127-4-4	12.7	4	4	76.2	10	56.2	11.6
JBBS14-4-4	14	4	4	75	10	55	12
JBBS159-4-7	15.875	4	7	76.2	10	56.2	14
JBBS16-4-7	16	4	7	75	10	55	15
JBBS19-4-7	19.05	4	7	89	10	69	17.2
JBBS20-4-7	20	4	7	90	10	70	18
JBBS22-4-7	22	4	7	90	10	70	20
JBBS25-4-7	25	4	7	100	10	80	23
JBBS254-4-7	25.4	4	7	90	10	70	23.4

JBBS-C

Sleeve for internal coolant supply



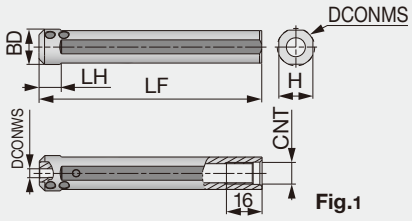


Fig.1

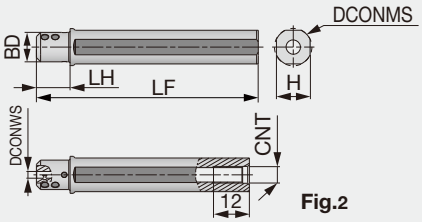


Fig.2

Metric	DCONMS	BD	DCONWS	LF	LH	H	CNT	Fig
JBBS159-4-L100C	15.875	15.875	4	100	10	14.58	Rc1/8	1
JBBS159-7-L100C	15.875	15.875	7	100	10	14.58	Rc1/8	1
JBBS16-4-L100C	16	16	4	100	10	15	Rc1/8	1
JBBS16-7-L100C	16	16	7	100	10	15	Rc1/8	1
JBBS19-4-L100C	19.05	17.5	4	100	20	17.2	Rc1/8	2
JBBS19-7-L100C	19.05	17.5	7	100	20	17.2	Rc1/8	2
JBBS20-4-L100C	20	17.5	4	100	20	18	Rc1/8	2
JBBS20-7-L100C	20	17.5	7	100	20	18	Rc1/8	2
JBBS22-4-L100C	22	17.5	4	100	20	20	Rc1/8	2
JBBS22-7-L100C	22	17.5	7	100	20	20	Rc1/8	2
JBBS25-4-L100C	25	18	4	100	23	23	Rc1/8	2
JBBS25-7-L100C	25	18	7	100	23	23	Rc1/8	2
JBBS254-4-L100C	25.4	18	4	100	23	23.4	Rc1/8	2
JBBS254-7-L100C	25.4	18	7	100	23	23.4	Rc1/8	2

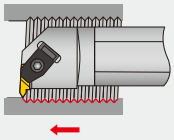
SPARE PARTS

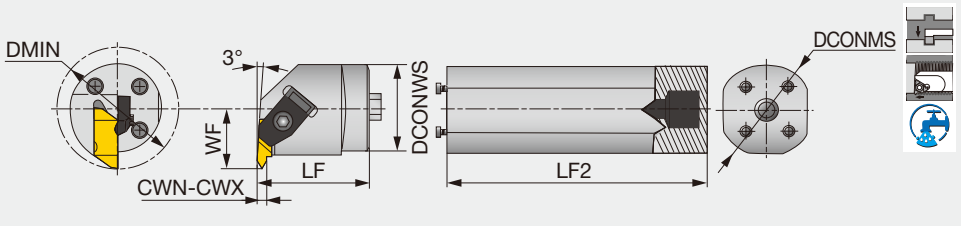


Designation	Clamping screw	Wrench
JBBS12-4-4, JBBS14-4-4 JBBS**-7-L100C	SSHM5-4PF-S	P-2.5
JBBS127-4-4, JBBS**-4-7 JBBS**-4-L100C	SSHM5-6PF-S	P-2.5

HS-FLER

Head exchangeable internal grooving and threading toolholder





Metric	DMIN	DCONWS	LF	WF	Insert	Torque*
HS40-FLER3W**	56.1	40	41.3	25.4	FLT-3L...	3
HS50-FLER3W	70.1	50	41.9	35	FLT-3L...	3

** Compatilble with the BoreMeister system.
Torque* : Recommended clamping torque (N·m)
Note: Use the left-hand insert (FLT-3L...) for a right-hand holder (HS**-FLER...).

SPARE PARTS

Designation	Clamp	Clamping screw 2	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

Spare parts

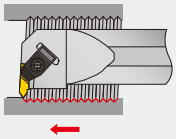
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

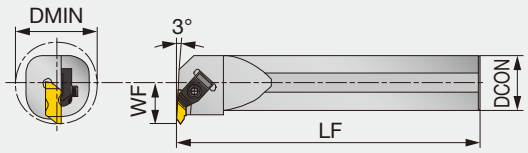
Reference pages: HS-FLER : Inserts → E014

TUNGT-CLAMP

A_M-FLER/L

Internal grooving and threading toolholder





Right hand (R) shown.

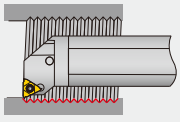
Inch	Pitch	DMIN	DCON	LF	WF	Insert
A08-FLER/L2	0.031 - 0.125	0.730	0.500	8.000	0.437	FL*-2**L/R...
A10-FLER2	0.031 - 0.125	1.000	0.625	10.000	0.500	FL*-2**L...
A12-FLER/L2	0.031 - 0.128	1.125	0.750	10.000	0.562	FL*-2**L/R...
A16-FLER/L2	0.031 - 0.128	1.375	1.000	12.000	0.688	FL*-2**L/R...
A16-FLER/L3	0.031 - 0.250	1.375	1.000	12.000	0.688	FL*-3**L/R...

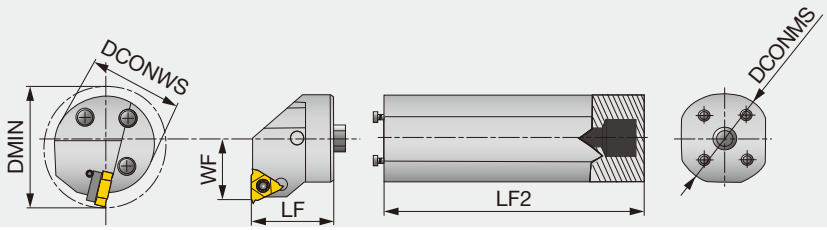
Metric	Pitch	DMIN	DCON	LF	WF	Insert
A25M-FLER/L3	2.11 - 5.08	34.9	25	300	17.7	FLT-3...
A32M-FLER/L3	2.11 - 5.08	44.5	32	350	22.1	FLT-3...
A40M-FLER3	2.11 - 5.08	50.8	40	350	24.5	FLT-3L...

TUNGTHREAD

HS-LNFR-53

Head exchangeable internal threading, for single-sided lay down inserts





Metric	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-53*	50	40	28.7	41.3	L535B**INT-FC
HS50-LNFR-53	63	50	32.7	41.3	L535B**INT-FC

* Compatilble with the BoreMeister system.

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A08-FLER2	TF-146	S-310	7/64HEX
A08-FLEL2	TF-147	S-310	7/64HEX
A10-FLER2, A12-FLER2, A16-FLER2	TF-75	S-310	7/64HEX
A12-FLEL2, A16-FLEL2	TF-74	S-310	7/64HEX
A16-FLER3	TF-73	S-412	5/32HEX
A16-FLEL3	TF-72	S-412	5/32HEX

Metric SPARE PARTS

Designation	Lock pin	Clamp 1	Clamp 2	Clamping screw 1	Clamping screw 2	Wrench
A**M-FLER3	-	TF-73	-	S-412	-	5/32HEX
A**M-FLEL3	-	TF-72	-	S-412	-	5/32HEX
HS**-LNFR-53	NL-56	-	TC-250	-	STC-11	1/8HEX

Shank

Inch	DCONMS	LF2
S-570-32-50	2.000	14.410

Metric	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

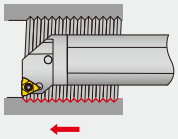
SPARE PARTS

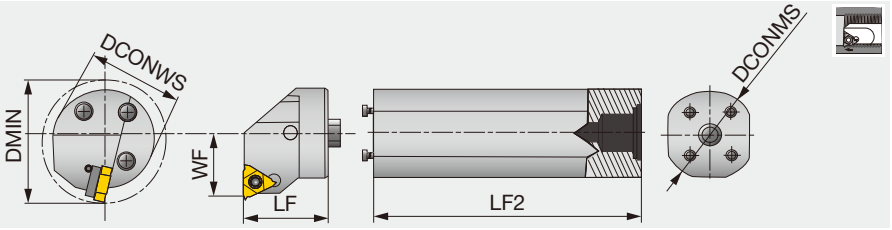
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

Reference pages: A_M-FLER/L : Inserts → E014
HS-LNFR-53 : Inserts → E032

HS-LNFR-54API

Head exchangeable internal threading toolholder, for double-sided lay down inserts





Metric	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-54API*	50	40	27	32	LDS54**FT-CB#...
HS50-LNFR-54API	63	50	35	40	LDS54**FT-CB#...

* Compatilble with the BoreMeister system.

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

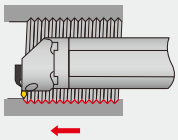
SPARE PARTS

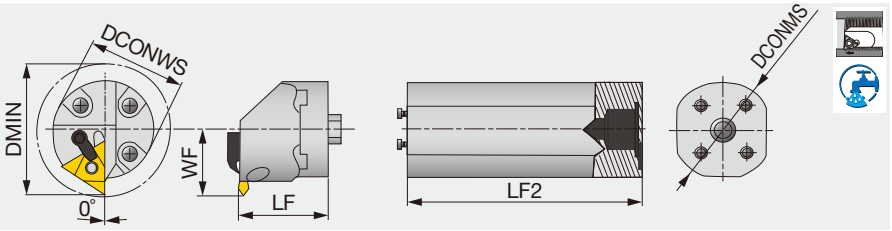



Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

HS-MTHOR

Multi-clamp internal threading toolholder, for on edge inserts





Metric	DMIN	DCONWS	WF	LF	Insert
HS40-MTHOR-4*	66.7	40	25.9	32	TNM*43...
HS50-MTHOR-4	73	50	35.9	40	TNM*43...
HS40-MTHOR-5*	81.3	40	30.6	32	TNM*54...
HS50-MTHOR-5	82.6	50	35.9	40	TNM*54...

* Compatilble with the BoreMeister system.

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

SPARE PARTS




Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

SPARE PARTS



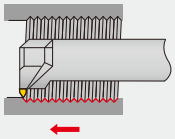


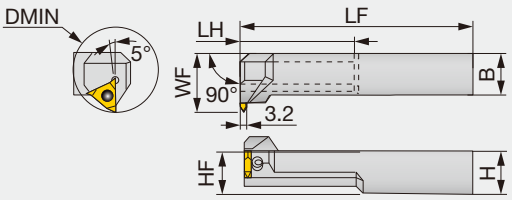

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS40-LNFR-54API	H410-1	TC-250	STC-11	1/8HEX
HS50-LNFR-54API	NL-56	TC-250	STC-11	1/8HEX
HS**-MTHOR-4	NL-44	TC-190	STC-5	3/32HEX
HS**-MTHOR-5	NL-56	TC-250	STC-11	1/8HEX

Reference pages: HS-LNFR-54API : Inserts → E035
HS-MTHOR : Inserts → E029 - E031, E033

TT-RI

TT-type pin-lock internal threading toolholder



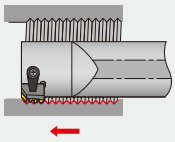


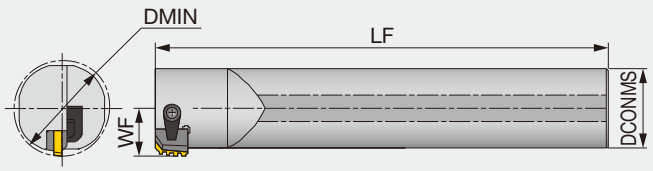
Metric	DMIN	H	B	LF	LH	HF	WF	Insert
TT-2525RI	50	25	25	200	70	25	35	TTL42...

Note: Use the left-hand insert (TTL42...) for a right-hand holder (TT-2525RI).

SI-CLHOR

Internal threading toolholder, for chaser inserts





Metric	DMIN	DCONMS	WF	LF	Insert
SI-CLHOR-40M6	50.8	40	23.16	400	CR...

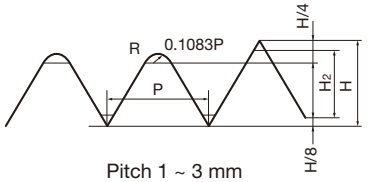
SPARE PARTS

Designation	Clamp	Clamp	Right-left screw	Wrench
TT-2525RI	CP91	-	DS-6	P-3
SI-CLHOR-40M6	-	TC-311	STC-8	5/32HEX

Reference pages: TT-RI : Inserts → E014, E016
SI-CLHOR : Inserts → E026, E031

Technical Guide

• Relationship between pitch, depth of cut and number of passes for external metric threading

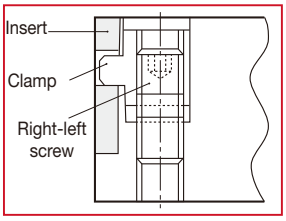


Pitch 1 ~ 3 mm

Note: Maximum machinable pitch is 3 mm.

	P	1	1.25	1.5	1.75	2	2.5	3
	H_2	0.6	0.76	0.92	1.09	1.25	1.57	1.9
	H	0.866	1.083	1.299	1.516	1.732	2.165	2.598
Number of passes	1	0.25	0.3	0.3	0.3	0.35	0.4	0.4
	2	0.15	0.2	0.25	0.25	0.25	0.3	0.35
	3	0.1	0.1	0.15	0.2	0.2	0.25	0.28
	4	0.05	0.06	0.1	0.1	0.16	0.2	0.2
	5	0.05	0.06	0.05	0.1	0.1	0.15	0.2
	6		0.06	0.05	0.07	0.07	0.1	0.13
	7			0.02	0.05	0.05	0.07	0.1
	8				0.02	0.02	0.05	0.1
	9					0.02	0.03	0.05
	10						0.02	0.05
	11							0.02
	12							0.02

Part assembly



STANDARD CUTTING CONDITIONS

TUNGTHREAD

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm)						
			AH8015	T05HP	AH725	T313V	NS9530	TH10	BX330
P	Steel / Alloy steel 1045, 4140, etc.	< 200HB	262 - 591	328 - 656	262 - 591	328 - 656	492 - 656	-	-
		> 200HB	197 - 525	328 - 492	197 - 525	328 - 492	328 - 558	-	-
M	Stainless steel 304SS, etc.	-	164 - 427	230 - 427	164 - 427	230 - 427	-	-	-
K	Cast iron Class 25, Class 30, etc.	-	197 - 492	230 - 492	164 - 328	230 - 492	-	230 - 295	-
N	Non-ferrous metal	-	-	-	-	-	-	328 - 1640	-
S	Superalloys Ti-6Al-4V, Inconel718, etc.	-	66 - 262	-	-	-	-	33 - 131	-
H	Hardened steel	50 - 60HRC	-	-	-	-	-	33 - 98	164 - 656

TETRAMINICUT

TCT18R/L / TCT18FR

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	Steel / Alloy steel 1045, 4140, etc.	< 200HB	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
			Fracture resistance	AH725	197 - 492	0.031 - 0.118	32 - 8
		> 200HB	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
			Fracture resistance	AH725	197 - 492	0.031 - 0.118	32 - 8
M	Stainless steel 304SS, etc.	-	First choice	SH725	164 - 262	0.016 - 0.079	64 - 12
		-	Fracture resistance	AH725	164 - 262	0.031 - 0.118	32 - 8
K	Cast iron Class 25, Class 30, etc.	-	First choice	AH725	164 - 328	0.031 - 0.118	32 - 8
		-	Sharpness	SH725	164 - 328	0.016 - 0.079	64 - 12
S	Superalloys Ti-6Al-4V, Inconel718, etc.	-	First choice	SH725	98 - 328	0.016 - 0.079	64 - 12
		-	Fracture resistance	AH725	98 - 328	0.031 - 0.118	32 - 8

DUOJUSTCUT

ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	Steel / Alloy steel 1045, 4140, etc.	< 200HB	SH725	164 - 656	0.008 - 0.059	127 - 16
		> 200HB	SH725	164 - 656	0.008 - 0.059	127 - 16
M	Stainless steel 304SS, etc.	-	SH725	164 - 656	0.008 - 0.059	127 - 16
N	Aluminum alloys 5056, 6061, etc.	-	SH725	492 - 656	0.008 - 0.059	127 - 16
	Copper alloy C2600, C280C, etc.	-	SH725	328 - 656	0.008 - 0.059	127 - 16
S	Superalloys Ti-6Al-4V, Inconel718, etc.	-	SH725	98 - 262	0.008 - 0.059	127 - 16

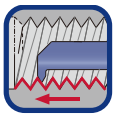
Reference pages: TungThread : Inserts → E010 - E011, E014 - E019, E021 - E035
External toolholders → E036 - E040, E051 - E053
Internal toolholders → E054 - E056, E065 - E067
TetraMini-Cut: Inserts → E012, External toolholders → E041 - E044
DuoJust-Cut : Inserts → E012, External toolholders → E047 - E048

STANDARD CUTTING CONDITIONS

TUNGT-CLAMP

ISO	Workpiece material	Hardness	Grade	Application	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	Steel / Alloy steel 1045, 4140, etc.	< 200HB	AH725	Threading	262 - 591	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20
		> 200HB	AH725	Threading	197 - 525	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20
M	Stainless steel 304SS, etc.	-	AH725	Threading	164 - 427	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20

TINYMINI TURN



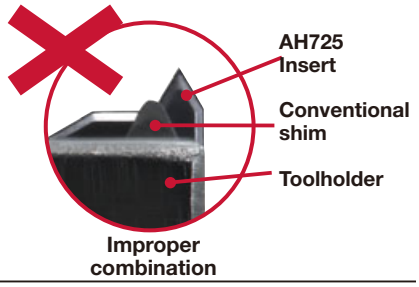
Internal threading

ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (m/min)	Cutting speed *Vc* (sfm)	Number of passes Pitch (mm) / (in) 0.5 (0.020)	0.75 (0.029)	1 (0.039)	1.25 (0.049)	1.5 (0.059)
P	Steel / Alloy steel 1045, 4140, etc.	< 200HB	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
		> 200HB	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel 304SS, etc.	-	SH730, SH725	40 - 140	131 - 459	8	10	12	15	18
K	Cast iron Class 25, Class 30, etc.	-	SH730, SH725	30 - 100	98 - 328	7	9	12	14	17
N	Aluminum alloys, Copper alloy Si < 12%	-	SH730, SH725	90 - 200	295 - 656	6	8	10	12	15

Reference pages: TungT-Clamp : Inserts → E014, External toolholders → E050
Internal toolholders → E064 - E065
TinyMini-Turn: Solid carbide boring bars → E060

IMPORTANT - Replacement of shim

AH725 insert has 2 types of shims according to the chipbreaker geometry. Please find an appropriate shim in the table below. When using a wrong shim, the insert seating may become unstable or the tool life may be shortened.



Improper combination

Interchangeable shim (Insert size: 16)

Toolholder screw type	Lead angle	External		Internal	
		① Conventional shim	❶ Standard (New)	② Conventional shim	❷ Standard (New)
Dual clamping methods of screw-on and clamp-on	4°	GXE16-4DT	AE16-4DT	GXN16-4DT	AN16-4DT
	3°	GXE16-3DT	AE16-3DT	GXN16-3DT	AN16-3DT
	2°	GXE16-2DT	AE16-2DT	GXN16-2DT	AN16-2DT
	1° (Standard)	GX16-1DT	A16-1DT	GX16-1DT	A16-1DT
	0°	GXE16-0DT	AE16-0DT	GXN16-0DT	AN16-0DT
	-1°	GXE16-99DT	AE16-99DT	GXN16-99DT	AN16-99DT
	-2°	GXE16-98DT	AE16-98DT	GXN16-98DT	AN16-98DT
Clamp-on	4°	GXE16-4	AE16-4	GXN16-4	AN16-4
	3°	GXE16-3	AE16-3	GXN16-3	AN16-3
	2°	GXE16-2	AE16-2	GXN16-2	AN16-2
	1° (Standard)	GXE16-1	A16-1	GXN16-1	A16-1
	0°	GXE16-0	AE16-0	GXN16-0	AN16-0
	-1°	GXE16-99	AE16-99	GXN16-99	AN16-99
	-2°	GXE16-98	AE16-98	GXN16-98	AN16-98

Shim to be replaced (Insert size: 16)

Thread	External			Internal		
	Designation	Grade	Replacement	Designation	Grade	Replacement
ISO			① Conventional shim → ❶ Standard (New)	16IR15ISO-B	AH725	② Conventional shim → ❷ Standard (New)
				16IR175ISO-B	AH725	
				16IR20ISO-B	AH725	
55°	16ERAG55-B	AH725		16IRAG55-B	AH725	
				16IRG55-B	AH725	
60°	16ERA60-B	AH725		16IRAG60-B	AH725	
				16IRA60-B	AH725	
				16IRG60-B	AH725	
UN				16IR18UN-B	AH725	
				16IR16UN-B	AH725	
				16IR14UN-B	AH725	
W				16IR16W-B	AH725	
				16IR14W-B	AH725	
PT				16IR14PT-B	AH725	
NPT	16ER8NPT-B	AH725		16IR14NPT-B	AH725	
				16IR115NPT-B	AH725	

Want to learn more about threads and thread machining?

Visit this special website for the latest information on thread machining.

The website provides information on:

- Basic knowledge on threads and thread machining
- Threading tool selection guide and the latest machining techniques
- F.A.Q. and troubleshooting guide



Scan this QR code to access the website

Reference pages: E011, E015, E019, E022 - E025

Parting, Grooving



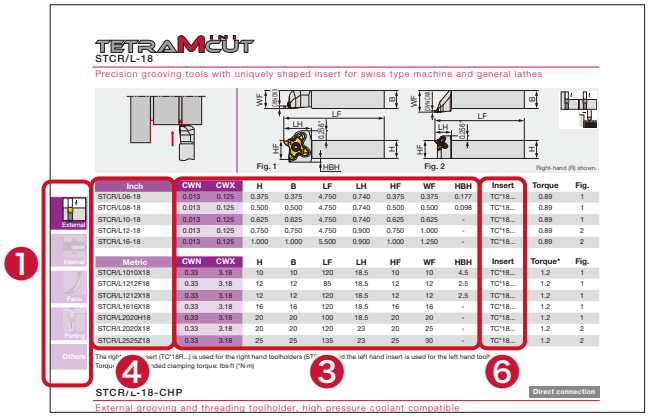
Parting, Grooving - Content structure

- Products are listed by application.
- Each item is listed by product series.
- Internal grooving tools are listed according to the order of the minimum machining diameter (from small to larger).

How to use the page

Method ①

Select the application (❶) at the left end of each page and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻).



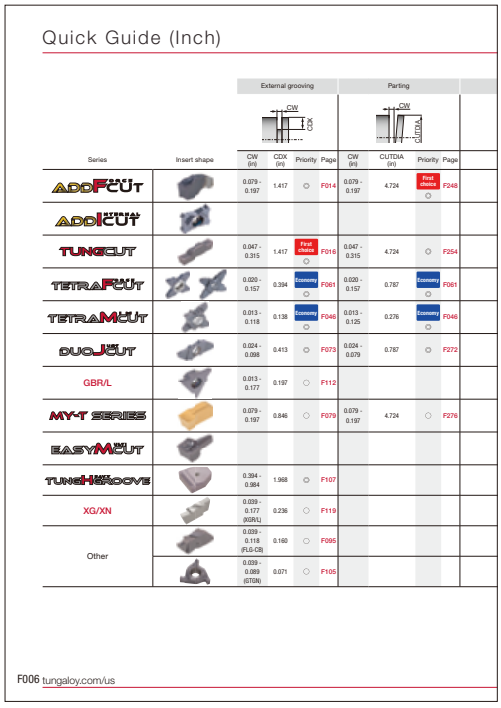
Method ②

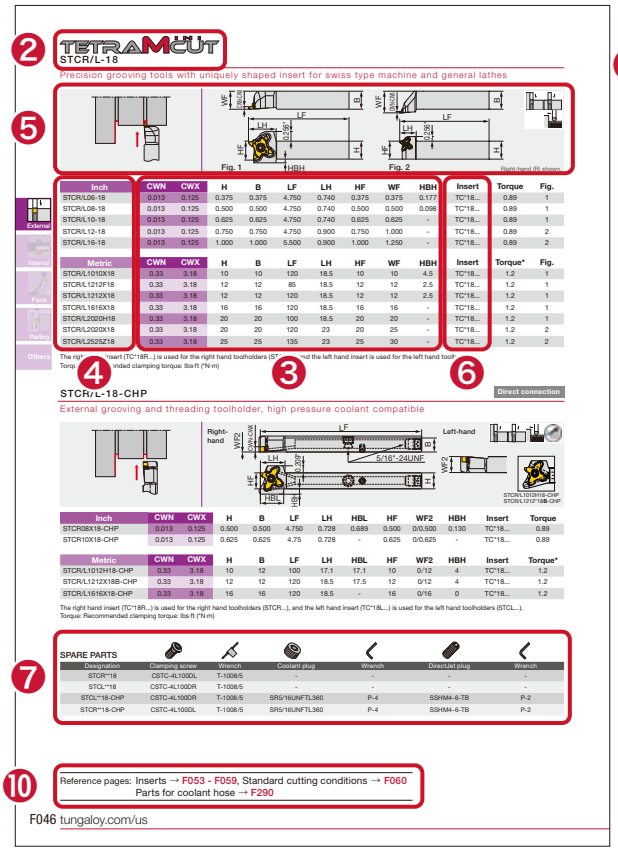
Select the tool series name on F004 - F005 and check the details on the product page.



Method ③

Select the tool series or the tool specification from Quick Guide on F006 - F009 and see the details on each page.





❷ TETRA CUT
STCR/L-18
Precision grooving tools with uniquely shaped insert for swiss type machine and general lathes

❺ Fig. 1 Fig. 2 Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.013	0.125	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.013	0.125	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.013	0.125	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.013	0.125	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.013	0.125	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2
Metric	**CWN**	**CWX**	**H**	**B**	**LF**	**LH**	**HF**	**WF**	**HBH**	**Insert**	**Torque***	**Fig.**
STCR/L1010X18	0.33	3.18	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.33	3.18	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.33	3.18	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.33	3.18	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.33	3.18	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.33	3.18	20	20	120	23	20	25	-	TC*18...	1.2	2
STCR/L2525Z18	0.33	3.18	25	25	135	23	25	30	-	TC*18...	1.2	2

The right-hand insert (TC*18R...) is used for the right hand toolholders (ST... and the left hand insert is used for the left hand toolh...
Torq... ended clamping torque: lbs·ft (*N·m)

❹ ❸ ❻

STCR/L-18-CHP
Direct connection
External grooving and threading toolholder, high pressure coolant compatible

Right-hand Left-hand

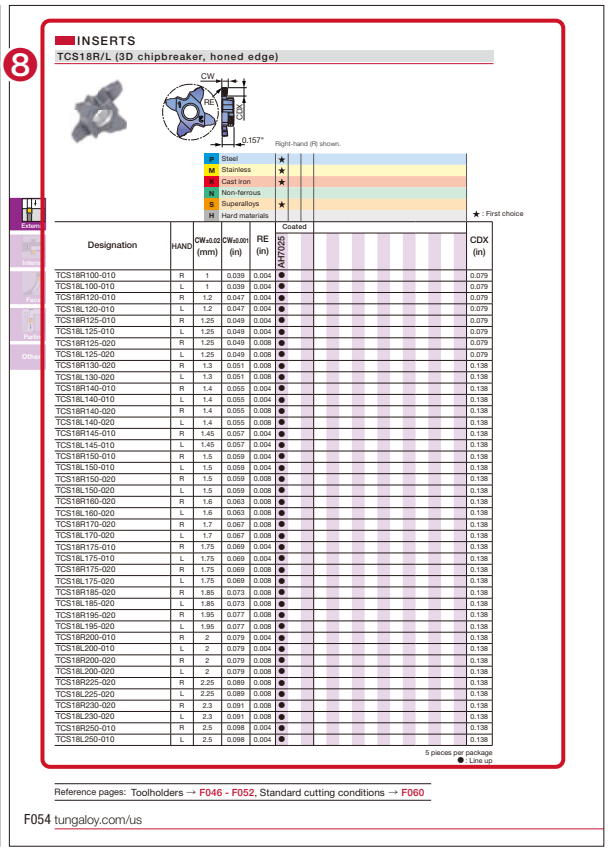
Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2	HBH	Insert	Torque
STCR08X18-CHP	0.013	0.125	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR10X18-CHP	0.013	0.125	0.625	0.625	4.75	0.728	-	0.625	0/0.625	-	TC*18...	0.89
Metric	**CWN**	**CWX**	**H**	**B**	**LF**	**LH**	**HBL**	**HF**	**WF2**	**HBH**	**Insert**	**Torque***
STCR/L1012H18-CHP	0.33	3.18	10	12	100	17.1	17.1	10	0/12	4	TC*18...	1.2
STCR/L1212X18B-CHP	0.33	3.18	12	12	120	18.5	17.5	12	0/12	4	TC*18...	1.2
STCR/L1616X18-CHP	0.33	3.18	16	16	120	18.5	-	16	0/16	0	TC*18...	1.2

The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert (TC*18L...) is used for the left hand toolholders (STCL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

❼ SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR**18	CSTC-4L100DL	T-1008/5	-	-	-	-
STCL**18	CSTC-4L100DR	T-1008/5	-	-	-	-
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SRS/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SRS/16UNFTL360	P-4	SSHM4-6-TB	P-2

❿ Reference pages: Inserts → F053 - F059, Standard cutting conditions → F060
Parts for coolant hose → F290



❽ INSERTS
TCS18R/L (3D chipbreaker, honed edge)

CW RE CDX 0.157" Right-hand (R) shown.

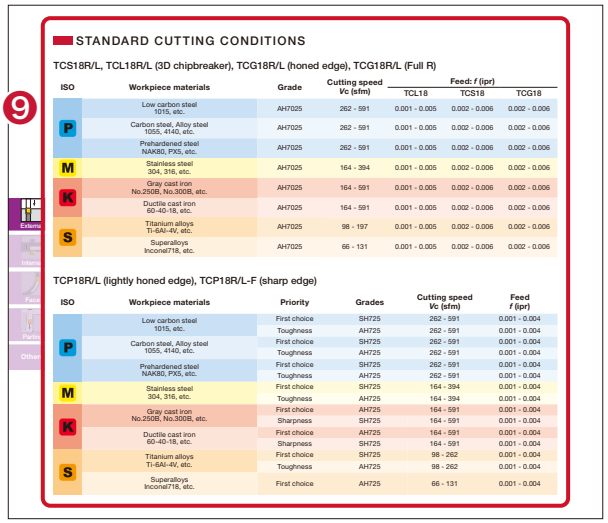
P	Steel ★
M	Stainless ★
K	Cast iron ★
N	Non-ferrous
S	Superalloys ★
H	Hard materials

★ : First choice

Designation	HAND	CW=0.02 (mm)	CW=0.004 (in)	RE (in)	Coated AH7025	CDX (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079
TCS18L100-010	L	1	0.039	0.004	●	0.079
TCS18R120-010	R	1.2	0.047	0.004	●	0.079
TCS18L120-010	L	1.2	0.047	0.004	●	0.079
TCS18R125-010	R	1.25	0.049	0.004	●	0.079
TCS18L125-010	L	1.25	0.049	0.004	●	0.079
TCS18R125-020	R	1.25	0.049	0.008	●	0.079
TCS18L125-020	L	1.25	0.049	0.008	●	0.079
TCS18R130-020	R	1.3	0.051	0.008	●	0.138
TCS18L130-020	L	1.3	0.051	0.008	●	0.138
TCS18R140-010	R	1.4	0.055	0.004	●	0.138
TCS18L140-010	L	1.4	0.055	0.004	●	0.138
TCS18R140-020	R	1.4	0.055	0.008	●	0.138
TCS18L140-020	L	1.4	0.055	0.008	●	0.138
TCS18R145-010	R	1.45	0.057	0.004	●	0.138
TCS18L145-010	L	1.45	0.057	0.004	●	0.138
TCS18R150-010	R	1.5	0.059	0.004	●	0.138
TCS18L150-010	L	1.5	0.059	0.004	●	0.138
TCS18R150-020	R	1.5	0.059	0.008	●	0.138
TCS18L150-020	L	1.5	0.059	0.008	●	0.138
TCS18R160-020	R	1.6	0.063	0.008	●	0.138
TCS18L160-020	L	1.6	0.063	0.008	●	0.138
TCS18R170-020	R	1.7	0.067	0.008	●	0.138
TCS18L170-020	L	1.7	0.067	0.008	●	0.138
TCS18R175-010	R	1.75	0.069	0.004	●	0.138
TCS18L175-010	L	1.75	0.069	0.004	●	0.138
TCS18R175-020	R	1.75	0.069	0.008	●	0.138
TCS18L175-020	L	1.75	0.069	0.008	●	0.138
TCS18R185-020	R	1.85	0.073	0.008	●	0.138
TCS18L185-020	L	1.85	0.073	0.008	●	0.138
TCS18R195-020	R	1.95	0.077	0.008	●	0.138
TCS18L195-020	L	1.95	0.077	0.008	●	0.138
TCS18R200-010	R	2	0.079	0.004	●	0.138
TCS18L200-010	L	2	0.079	0.004	●	0.138
TCS18R200-020	R	2	0.079	0.008	●	0.138
TCS18L200-020	L	2	0.079	0.008	●	0.138
TCS18R225-020	R	2.25	0.089	0.008	●	0.138
TCS18L225-020	L	2.25	0.089	0.008	●	0.138
TCS18R230-020	R	2.3	0.091	0.008	●	0.138
TCS18L230-020	L	2.3	0.091	0.008	●	0.138
TCS18R250-010	R	2.5	0.098	0.004	●	0.138
TCS18L250-010	L	2.5	0.098	0.004	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060



❾ STANDARD CUTTING CONDITIONS

TCS18R/L, TCL18R/L (3D chipbreaker), TCG18R/L (honed edge), TCG18R/L (Full R)

ISO	Workpiece materials	Grade	Cutting speed Vc (sfm)	Feed: f (ipr) TCL18	TCS18	TCG18
P	Low carbon steel 1015, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Carbon steel, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
M	Stainless steel 304, 316, etc.	AH7025	164 - 394	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Gray cast iron No.25Cl, No.30Cl, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Ductile cast iron 60-40-18, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 197	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 131	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006

TCP18R/L (lightly honed edge), TCP18R/L-F (sharp edge)

ISO	Workpiece materials	Priority	Grades	Cutting speed Vc (sfm)	Feed f (ipr)
P	Low carbon steel 1015, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, 4140, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
M	Stainless steel 304, 316, etc.	First choice	SH725	164 - 394	0.001 - 0.004
		Toughness	AH725	164 - 394	0.001 - 0.004
K	Gray cast iron No.25Cl, No.30Cl, etc.	First choice	AH725	164 - 591	0.001 - 0.004
		Sharpness	SH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, etc.	First choice	AH725	164 - 591	0.001 - 0.004
		Sharpness	SH725	164 - 591	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
		Toughness	AH725	98 - 262	0.001 - 0.004
S	Superalloys Inconel718, etc.	First choice	AH725	66 - 131	0.001 - 0.004

❶ : Application
❷ : Tool series name
❸ : Dimension table
❹ : Toolholder designation
e.g. right-hand, 08 square shank

→ STC**R** **08** **-18**

R/L in the designation means the stock either right or left hand respectively.

❺ : Dimension (conforming to ISO13399)
❻ : Applicable insert
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference pages

When ordering
- Please specify the designation and quantity for toolholders.
  e.g. **CTER10-2T08 ...** 1
- Please specify the designation and quantity for shank and adapter set when ordering both.
  e.g. **CHSR12-CHP ...** 1, **CAER-2T20-CHP...** 1 (one shank per package, one adapter per package)
  * Clamp screw for adapter is included.
- Please specify the designation, grade, and quantity for inserts.
  e.g. **DGS3-020 AH7025 ...** 10 (10 inserts per package)
  * You will find a note if the number per package is not 10.

External grooving

F014 page

Max. groove depth: 0.252" (6.4 mm)

Economy TETRAMINICUT F046 page

Economy TETRAFORCECUT F061 page

GBR/L F112 page



Max. groove depth: 1.969" (50 mm)

First choice TUNGCUT F016 page

ADDFORCECUT F014 page

DUOJUSTCUT F073 page

TUNGHEAVYGROOVE F107 page

MY-T SERIES F079 page



Internal grooving

F134 page

General internal grooving and turning

First choice ADDINTERNALCUT F134 page

TUNGCUT F140 page

ADDFORCECUT F136 page

MY-T SERIES F161 page

GBR/L F179 page

SNG / CNG F182 page



Face grooving

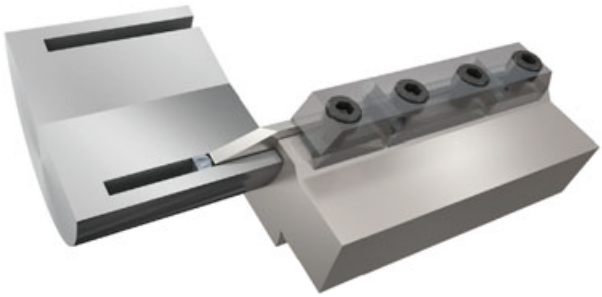
F190 page

First choice TUNGCUT F196 page

EASYMCUT F190 page

Economy TETRAMINICUT F223 page

MY-T SERIES F238 page



Parting

F248 page

General parting

First choice ADDFORCECUT F248 page

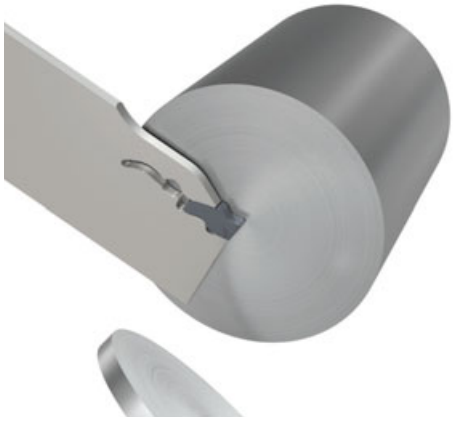
TUNGCUT F254 page

Economy TETRAFORCECUT F061 page

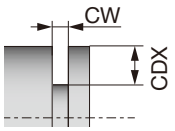
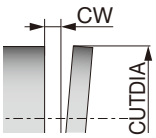
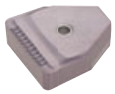
Economy TETRAMINICUT F046 page

DUOJUSTCUT F272 page

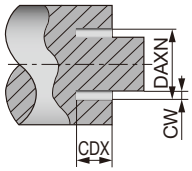
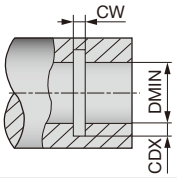
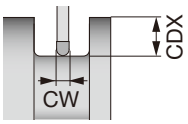
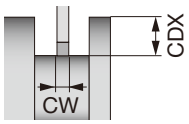
MY-T SERIES F276 page



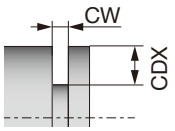
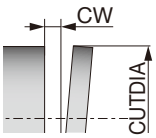
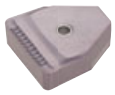
Quick Guide (Inch)

Series	Insert shape	External grooving				Parting			
									
		CW (in)	CDX (in)	Priority	Page	CW (in)	CUTDIA (in)	Priority	Page
ADDFORCECUT		0.079 - 0.197	1.417	◎	F014	0.079 - 0.197	4.724	First choice ◎	F248
ADDINTERNALCUT									
TUNGCUT		0.047 - 0.315	1.417	First choice ◎	F016	0.047 - 0.315	4.724	◎	F254
TETRAFORCECUT		0.020 - 0.157	0.394	Economy ◎	F061	0.020 - 0.157	0.787	Economy ◎	F061
TETRAMINICUT		0.013 - 0.118	0.138	Economy ◎	F046	0.013 - 0.125	0.276	Economy ◎	F046
DUOJUSTCUT		0.024 - 0.098	0.413	◎	F073	0.024 - 0.079	0.787	◎	F272
GBR/L		0.013 - 0.177	0.197	○	F112				
MY-T SERIES		0.079 - 0.197	0.846	○	F079	0.079 - 0.197	4.724	○	F276
EASYMULTICUT									
TUNGHEAVYGROOVE		0.394 - 0.984	1.968	◎	F107				
XG/XN		0.039 - 0.177 (XGR/L)	0.236	○	F119				
Other		0.039 - 0.118 (FLG-CB)	0.160	○	F095				
		0.039 - 0.089 (GTGN)	0.071	○	F105				

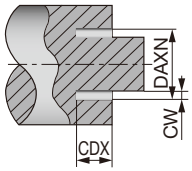
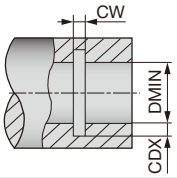
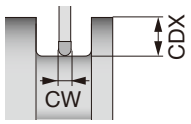
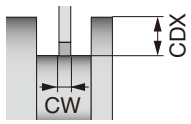
◎ : First choice
○ : Usable

	Face grooving					Internal grooving					Profiling (Full-R)				Turning			
																		
	CW (in)	CDX (in)	DAXN (in)	Priority	Page	CW (in)	CDX (in)	DMIN (in)	Priority	Page	CW (in)	CDX (in)	Priority	Page	CW (in)	CDX (in)	Priority	Page
						0.079 - 0.157	1.260	2.165	◎	F136								
						0.020 - 0.118	0.118	0.438	First choice ◎	F134								
	0.079 - 0.250	0.984	1.023	First choice ◎	F196	0.079 - 0.315	0.394	1.000	◎	F140	0.079 - 0.315	1.417	First choice ◎	F016 F286	0.079 - 0.315	1.417	First choice ◎	F016
											0.062 - 0.118	0.252	Economy ◎	F061				
	0.020 - 0.098	0.118	0.236	Economy ◎	F223						0.039 - 0.125	0.138	Economy ◎	F046				
															0.079 - 0.098 (JXDX)	0.276	◎	F073
						0.013 - 0.098 (GBR/L32)	0.098	1.38	○	F179	0.039 - 0.157	0.197	○	F112				
	0.118 - 0.197	0.866	1.181	○	F238	0.118 - 0.197	0.197	1.000	○	F161	0.118 - 0.197	0.846	○	F079	0.118 - 0.197	0.846	○	F079
	0.157 - 0.236	2.559	1.181	◎	F190													
						0.039 - 0.177 (XGR/L)	0.236	2.165	○	F188								
						0.039 - 0.118 (FLG-CB)	0.160	0.730	○	F167								
						0.039 - 0.089 (GTGN)	0.071	0.950	○	F177								

Quick Guide (Metric)

Series	Insert shape	External grooving				Parting			
									
		CW (mm)	CDX (mm)	Priority	Page	CW (mm)	CUTDIA (mm)	Priority	Page
ADDFORCECUT		2 - 5	33	◎	F014	2 - 5	120	First choice ◎	F248
ADDINTERNALCUT									
TUNGCUT		1.2 - 8	35	First choice ◎	F016	1.2 - 8	120	◎	F254
TETRAFORCECUT		0.5 - 4	10	Economy ◎	F061	0.5 - 4	20	Economy ◎	F061
TETRAMINICUT		0.33 - 3	3.5	Economy ◎	F046	0.33 - 3	7	Economy ◎	F046
DUOJUSTCUT		0.6 - 2.5	10.5	◎	F073	0.6 - 2	20	◎	F272
GBR/L		0.33 - 4.5	5	○	F112				
MY-T SERIES		2 - 5	25	○	F079	2 - 5	120	○	F276
EASYMULTICUT									
TUNGHEAVYGROOVE		10 - 25	50	◎	F107				
SNG / CNG									
XG/XN		1 - 4.5 (XGR/L)	6	○	F119				
Other		1 - 3 (FLG-CB)	4.07	○	F095				
		1 - 2.25 (GTGN)	1.8	○	F105				
		1.15 - 4.2 (GLR/L)	4	○	F117				

◎ : First choice
○ : Usable

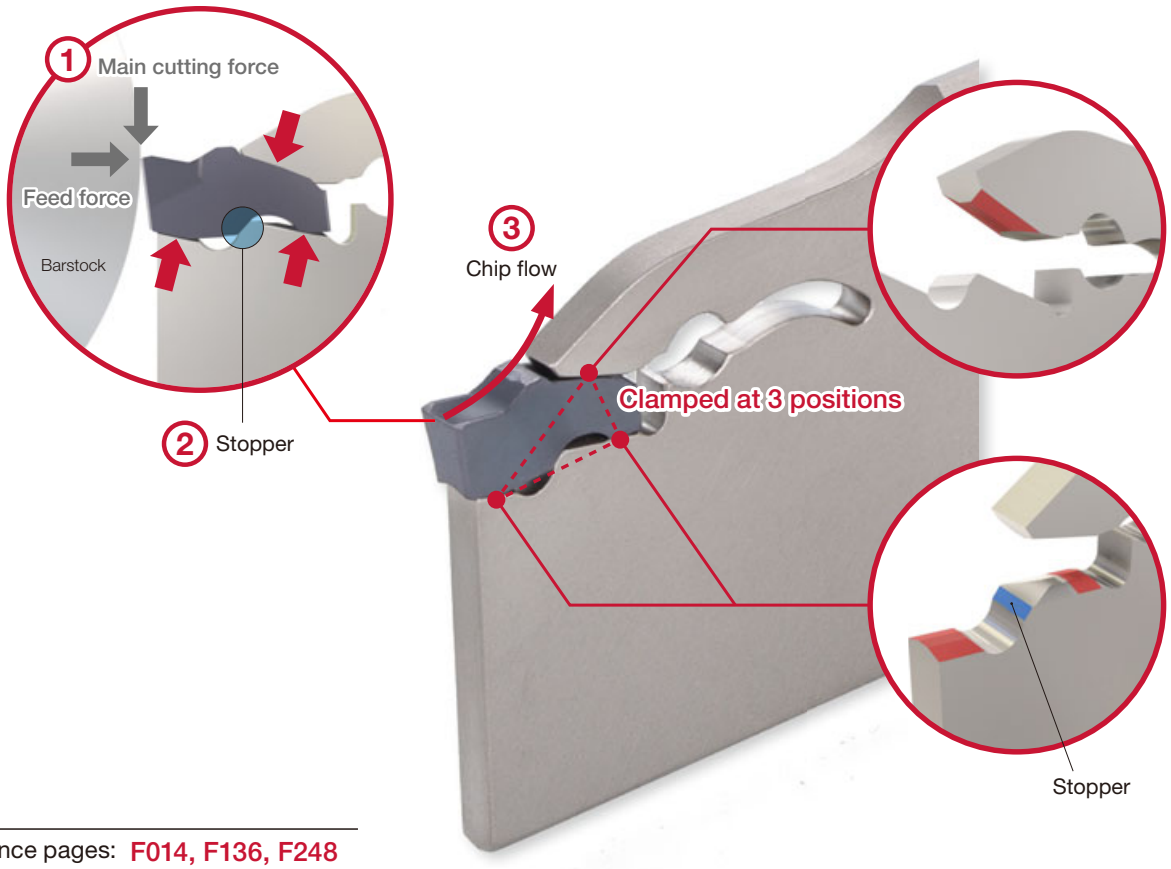
	Face grooving					Internal grooving					Profiling (Full-R)				Turning			
																		
	CW (mm)	CDX (mm)	DAXN (mm)	Priority	Page	CW (mm)	CDX (mm)	DMIN (mm)	Priority	Page	CW (mm)	CDX (mm)	Priority	Page	CW (mm)	CDX (mm)	Priority	Page
						0.5 - 3	3	10.5	First choice ◎	F134								
	2 - 6	25	25	First choice ◎	F196	2 - 8	10	25	◎	F140	2 - 8	35	First choice ◎	F016 F286	2 - 8	35	First choice ◎	F016
											1.57 - 3	6.4	Economy ◎	F061				
	0.33 - 3	3	6	Economy ◎	F223						1 - 3.18	3.5	Economy ◎	F046				
															2 - 2.5 (JXDX)	6	◎	F073
						0.33 - 4.5	2.5	35	○	F179	1 - 4	5	○	F112				
	3 - 5	22	30	○	F238	3 - 5	6	25	○	F161	3 - 5	25	○	F079	3 - 5	25	○	F079
	4 - 6	65	30	◎	F190													
						1 - 3.5	3	8	○	F182								
	1 - 4.5 (XNR/L)	6	55	○	F246	1 - 4.5 (XGR/L)	6	55	○	F188								
						1 - 3 (FLG-CB)	4.07	34.9	○	F167								
						1 - 2.25 (GTGN)	1.8	24	○	F177								

ADDFORCE CUT



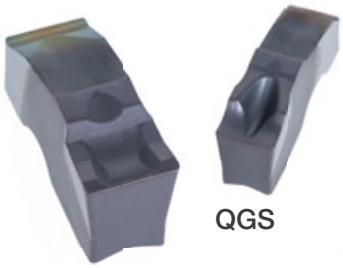
Highly rigid self-clamping system improves productivity for deep grooving and parting-off operations

1. The stopper supporting the insert bottom ensures secure edge position for excellent repeatability
2. The pocket is designed to securely spring-clamp the insert with three contact faces for stability
3. Smooth uninterrupted chip flow is possible thanks to two variations of effective 3D chipbreakers



Reference pages: F014, F136, F248





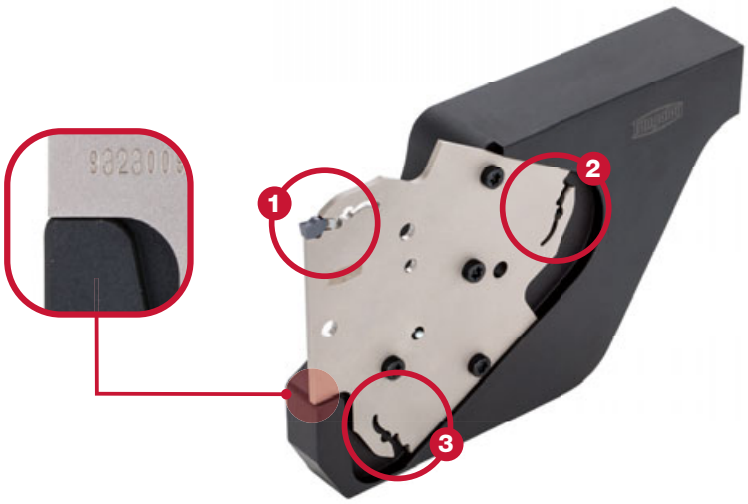
Strong holder design ensures tool stability and productivity gains during demanding cutting conditions

The blade provides reduced tooling cost with three insert pockets, while its strong backing beneath the insert withstands heavy cutting loads during machining.

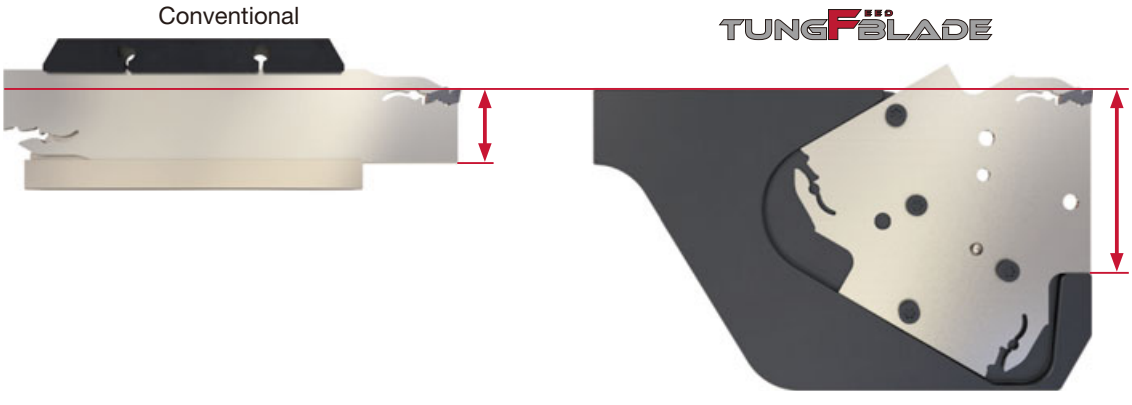
Economical blade with three insert pockets.

Specially designed tool block has two contact faces to provide enhanced tool rigidity.





With much thicker support than existing grooving blades, tool deflection and chatter are minimized even at higher feed rates.



QSG blade + **CHTBR/L** tool block

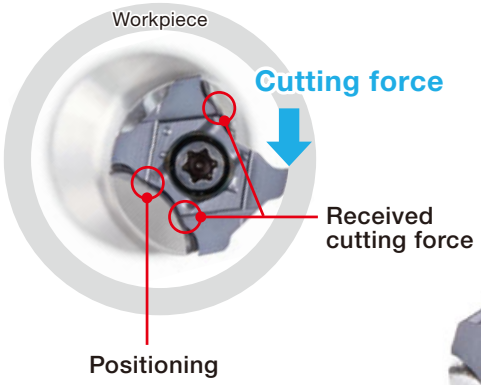
Reference pages: F250 - F251, F259 - F260

INTERNAL ADDICUT

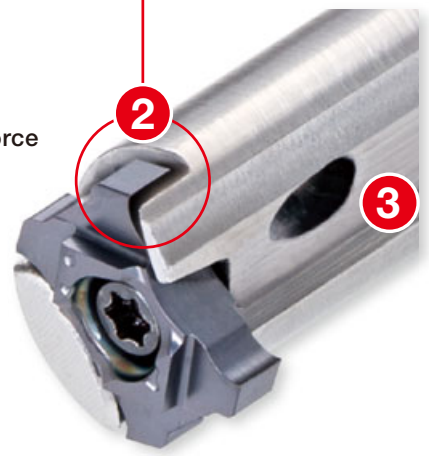


Unique insert clamping system ensures high indexing repeatability and clamping rigidity

1 The insert is supported at three optimized positions for rigid clamping and superior repeatability

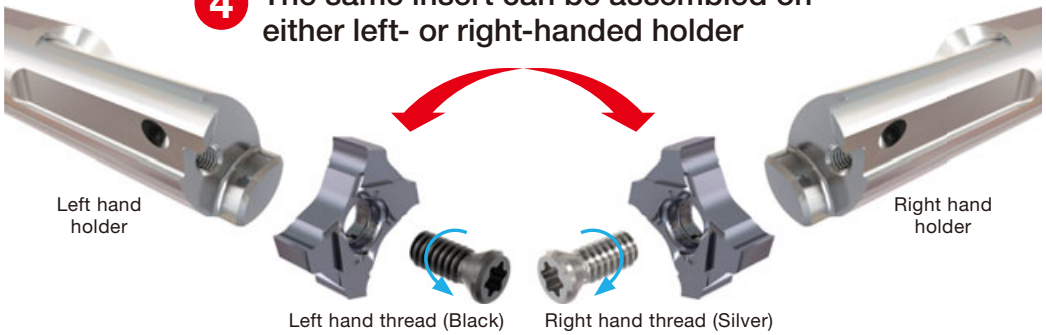


Protective pocket design for un-used cutting edges



Through coolant

4 The same insert can be assembled on either left- or right-handed holder



Prevents the screw from loosening while machining

Reference pages: F134

TUNGCUT

Multi-functional grooving tool series with excellent versatility



New modular holder system enhances versatility of existing monoblock holder and TungCap (PSC) lines.

High-pressure coolant system improves chip flow and tool life.

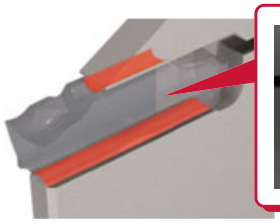
High clamping rigidity

For stable tool life and accuracy

Clamping system



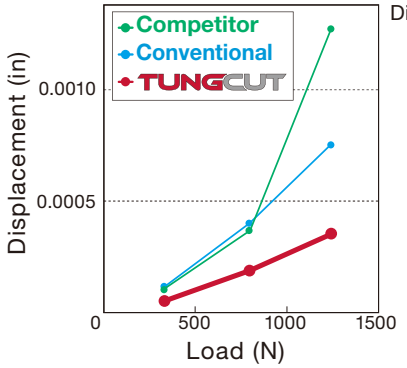
Stable and safe contact areas

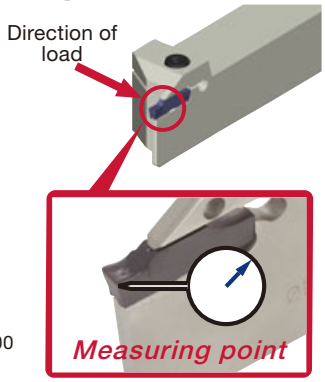




High repeatability and durability due to long pocket!

Minimizes cutting edge displacement





Excellent chip control at low feed rates

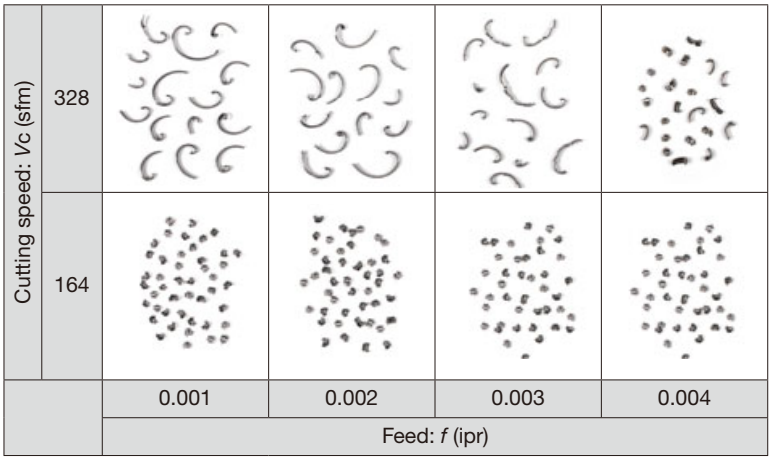
P **Bearing steel (52100)**

First choice chipbreaker for bearing steel.
Excellent chip control at low feed rates.



DGL

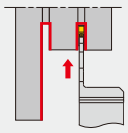
Workpiece material : SUJ2
Toolholder : CTER2525-3T09
Insert : DGL3-025
Cutting speed : *Vc* = 164, 328 sfm
Groove width : 0.118"

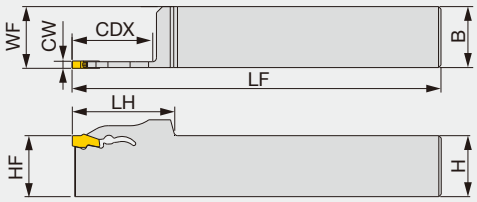


Reference pages: F016, F140, F196, F254, F286

QSER/L

External toolholders for grooving and parting







Right hand (R) shown.

Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	0.118	1.024	3	0.750	0.750	5.000	1.417	0.750	0.764
QSER/L12-3T33	0.118	1.299	3	0.750	0.750	5.000	1.654	0.750	0.764
QSER/L16-3T26	0.118	1.024	3	1.000	1.000	6.000	1.417	1.000	1.012
QSER/L16-3T33	0.118	1.299	3	1.000	1.000	6.000	1.654	1.000	1.012
QSER/L12-4T33	0.157	1.299	4	0.750	0.750	5.000	1.654	0.750	0.768
QSER/L16-4T33	0.157	1.299	4	1.000	1.000	6.000	1.654	1.000	1.016
QSER/L16-5T33	0.197	1.299	5	1.000	1.000	6.000	1.654	1.000	1.020
QSER/L16-6T36	0.236	1.417	6	1.000	1.000	6.000	1.890	1.000	1.016

Metric	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L2020-2T26	2	26	2	20	20	125	36	20	20.1
QSER/L2020-2T33	2	33	2	20	20	125	42	20	20.1
QSER/L2525-2T26	2	26	2	25	25	150	36	25	25.1
QSER/L2525-2T33	2	33	2	25	25	150	42	25	25.1
QSER/L2020-3T26	3	26	3	20	20	125	36	20	20.3
QSER/L2020-3T33	3	33	3	20	20	125	42	20	20.3
QSER/L2525-3T26	3	26	3	25	25	150	36	25	25.3
QSER/L2525-3T33	3	33	3	25	25	150	42	25	25.3
QSER/L2020-4T33	4	33	4	20	20	125	42	20	20.4
QSER/L2525-4T33	4	33	4	25	25	150	42	25	25.4
QSER/L2525-5T33	5	33	5	25	25	150	42	25	25.5

SPARE PARTS



Designation	Wrench
QSER/L...	QL-39

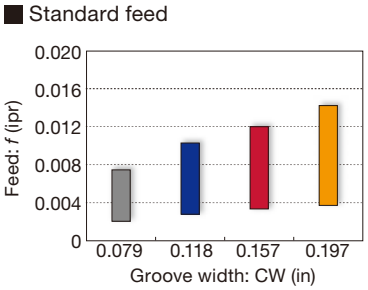
CHIPBREAKER GUIDE

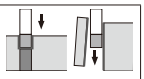
QGM



First choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
CW = 0.079" - 0.197"



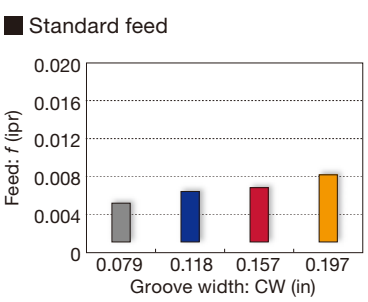


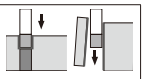
QGS



Lower cutting force and superior sharpness

Uniquely designed edge and chipbreaker
CW = 0.079" - 0.197"



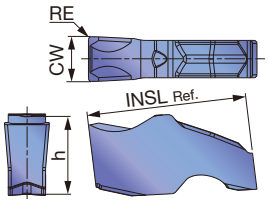


INSERTS

QGM

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

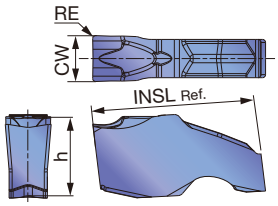
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGM2-020	2	2	0.079	0.008	●	0.433	0.209
QGM3-020	3	3	0.118	0.008	●	0.433	0.209
QGM4-030	4	4	0.157	0.012	●	0.512	0.287
QGM5-030	5	5	0.197	0.012	●	0.512	0.287

●: Line up

QGS

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGS2-020	2	2	0.079	0.008	●	0.433	0.209
QGS3-020	3	3	0.118	0.008	●	0.433	0.209
QGS4-030	4	4	0.157	0.012	●	0.512	0.287
QGS5-030	5	5	0.197	0.012	●	0.512	0.287

●: Line up

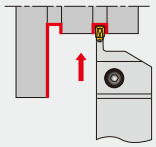
STANDARD CUTTING CONDITIONS

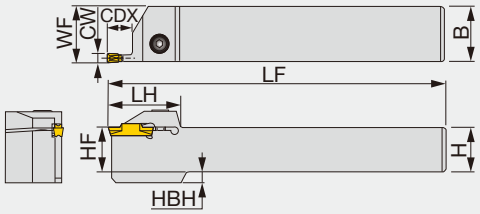
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast iron 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

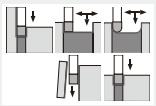
Please see page **F014** for feed: *f* (ipr).

CTER/L

External grooving, parting and turning toolholder







Right hand (R) shown.

Inch	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque
CTER/L10-2T08	0.079	2	0.315	0.625	0.625	4.500	1.299	0.625	0.629	0.157	3.69
CTER/L12-2T08	0.079	2	0.315	0.750	0.750	5.000	1.299	0.750	0.754	-	3.69
CTER/L16-2T08	0.079	2	0.315	1.000	1.000	6.000	1.299	1.000	1.004	-	3.69
CTER/L10-2T12	0.079	2	0.472	0.625	0.625	4.500	1.260	0.625	0.629	0.157	3.69
CTER/L12-2T12	0.079	2	0.472	0.750	0.750	5.000	1.260	0.750	0.754	-	3.69
CTER/L16-2T12	0.079	2	0.472	1.000	1.000	6.000	1.260	1.000	1.004	-	3.69
CTER/L10-2T17	0.079	2	0.669	0.625	0.625	4.500	1.457	0.625	0.629	0.157	3.69
CTER/L12-2T17	0.079	2	0.669	0.750	0.750	5.000	1.457	0.750	0.754	-	3.69
CTER/L16-2T17	0.079	2	0.669	1.000	1.000	6.000	1.457	1.000	1.004	-	3.69
CTER/L10-3T09	0.118	3	0.354	0.625	0.625	4.500	1.260	0.625	0.637	0.157	3.69
CTER/L12-3T09	0.118	3	0.354	0.750	0.750	5.000	1.260	0.750	0.762	-	3.69
CTER/L16-3T09	0.118	3	0.354	1.000	1.000	6.000	1.260	1.000	1.012	-	3.69
CTER/L12-3T12	0.118	3	0.472	0.750	0.750	5.000	1.260	0.750	0.763	-	3.69
CTER/L16-3T12	0.118	3	0.472	1.000	1.000	6.000	1.260	1.000	1.011	-	3.69
CTER/L10-3T20	0.118	3	0.787	0.625	0.625	4.500	1.516	0.625	0.637	0.157	3.69
CTER/L12-3T20	0.118	3	0.787	0.750	0.750	5.000	1.516	0.750	0.762	-	3.69
CTER/L16-3T20	0.118	3	0.787	1.000	1.000	6.000	1.516	1.000	1.012	-	3.69
CTER/L16-3T25	0.118	3	0.984	1.000	1.000	6.000	1.752	1.000	1.012	-	3.69
CTER/L10-4T10	0.157	4	0.394	0.625	0.625	4.500	1.260	0.625	0.645	0.157	6.27
CTER/L12-4T10	0.157	4	0.394	0.750	0.750	5.000	1.260	0.750	0.770	-	6.27
CTER/L16-4T10	0.157	4	0.394	1.000	1.000	6.000	1.260	1.000	1.020	-	6.27
CTER/L12-4T15	0.157	4	0.590	0.750	0.750	5.000	1.299	0.750	0.771	-	6.27
CTER/L16-4T15	0.157	4	0.590	1.000	1.000	6.000	1.299	1.000	1.019	-	6.27
CTER/L10-4T25	0.157	4	0.984	0.625	0.625	4.500	1.772	0.625	0.645	0.157	6.27
CTER/L12-4T25	0.157	4	0.984	0.750	0.750	5.000	1.772	0.750	0.770	-	6.27
CTER/L16-4T25	0.157	4	0.984	1.000	1.000	6.000	1.772	1.000	1.020	-	6.27
CTER/L20-4T25	0.157	4	0.984	1.250	1.250	7.000	1.772	1.250	1.270	-	6.27
CTER/L12-5T12	0.197	5	0.472	0.750	0.750	5.000	1.457	0.750	0.769	-	6.27
CTER/L16-5T12	0.197	5	0.472	1.000	1.000	6.000	1.457	1.000	1.019	-	6.27
CTER/L16-5T20	0.197	5	0.787	1.000	1.000	6.000	1.457	1.000	1.023	-	6.27
CTER/L16-5T32	0.197	5	1.260	1.000	1.000	6.000	2.205	1.000	1.019	-	6.27
CTER/L20-5T32	0.197	5	1.260	1.250	1.250	7.000	2.205	1.250	1.269	-	6.27
CTER/L12-6T12	0.236	6	0.472	0.750	0.750	5.000	1.457	0.750	0.770	-	8.85
CTER/L16-6T12	0.236	6	0.472	1.000	1.000	6.000	1.457	1.000	1.020	0.276	8.85
CTER/L16-6T20	0.236	6	0.787	1.000	1.000	6.000	1.614	1.000	1.023	0.276	8.85
CTER/L16-6T32	0.236	6	1.260	1.000	1.000	6.000	2.205	1.000	1.020	0.276	8.85
CTER/L20-6T32	0.236	6	1.260	1.250	1.250	7.000	2.205	1.250	1.270	-	8.85
CTER/L16-8T16	0.315	8	0.630	1.000	1.000	6.000	1.850	1.000	1.039	0.276	8.85
CTER/L16-8T25	0.315	8	0.984	1.000	1.000	6.000	1.850	1.000	1.039	0.276	8.85
CTER/L20-8T25	0.315	8	0.984	1.250	1.250	7.000	1.850	1.250	1.289	-	8.85
CTER/L16-8T36	0.315	8	1.417	1.000	1.000	6.000	2.362	1.000	1.039	0.276	8.85
CTER/L20-8T36	0.315	8	1.417	1.250	1.250	7.000	2.362	1.250	1.289	-	8.85

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L1616-2T08	2	2	8	16	16	110	33	16	16.1	4	5
CTER/L2020-2T08	2	2	8	20	20	125	33	20	20.1	-	5
CTER/L2525-2T08	2	2	8	25	25	150	33	25	25.1	-	5
CTER/L1616-2T12	2	2	12	16	16	110	32	16	16.1	4	5
CTER/L2020-2T12	2	2	12	20	20	125	32	20	20.1	-	5
CTER/L2525-2T12	2	2	12	25	25	150	32	25	25.1	-	5
CTER/L1616-2T17	2	2	17	16	16	110	37	16	16.1	4	5
CTER/L2020-2T17	2	2	17	20	20	125	37	20	20.1	-	5
CTER/L2525-2T17	2	2	17	25	25	150	37	25	25.1	-	5
CTER/L2525-2T20	2	2	20	25	25	150	38.5	25	25.1	-	5
CTER/L1616-3T09	3	3	9	16	16	110	32	16	16.3	4	5
CTER/L2020-3T09	3	3	9	20	20	125	32	20	20.3	-	5
CTER/L2525-3T09	3	3	9	25	25	150	32	25	25.3	-	5
CTER/L1616-3T12	3	3	12	16	16	110	32	16	16.3	4	5
CTER/L2020-3T12	3	3	12	20	20	125	32	20	20.3	-	5
CTER/L2525-3T12	3	3	12	25	25	150	32	25	25.3	-	5
CTER/L1616-3T20	3	3	20	16	16	110	38.5	16	16.3	4	5

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L2020-3T20	3	3	20	20	20	125	38.5	20	20.3	-	5
CTER/L2525-3T20	3	3	20	25	25	150	38.5	25	25.3	-	5
CTER/L2525-3T25	3	3	25	25	25	150	44.5	25	25.3	-	5
CTER/L1616-4T10	4	4	10	16	16	110	32	16	16.5	4	8.5
CTER/L2020-4T10	4	4	10	20	20	125	32	20	20.5	-	8.5
CTER/L2525-4T10	4	4	10	25	25	150	32	25	25.5	-	8.5
CTER/L2020-4T15	4	4	15	20	20	125	33	20	20.5	-	8.5
CTER/L2525-4T15	4	4	15	25	25	150	33	25	25.5	-	8.5
CTER/L1616-4T25	4	4	25	16	16	110	45	16	16.5	4	8.5
CTER/L2020-4T25	4	4	25	20	20	125	45	20	20.5	-	8.5
CTER/L2525-4T25	4	4	25	25	25	150	45	25	25.5	-	8.5
CTER/L3232-4T25	4	4	25	32	32	170	45	32	32.5	-	8.5
CTER/L2020-5T12	5	5	12	20	20	125	37	20	20.6	-	8.5
CTER/L2525-5T12	5	5	12	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T17	5	5	17	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T20	5	5	20	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T32	5	5	32	25	25	150	56	25	25.6	-	8.5
CTER/L3232-5T32	5	5	32	32	32	170	56	32	32.6	-	8.5
CTER/L2020-6T12	6	6	12	20	20	125	37	20	20.6	-	12
CTER/L2525-6T12	6	6	12	25	25	150	37	25	25.6	7	12
CTER/L2525-6T16	6	6	16	25	25	150	39	25	25.6	7	12
CTER/L2525-6T20	6	6	20	25	25	150	41	25	25.6	7	12
CTER/L2525-6T25	6	6	25	25	25	150	47	25	25.6	7	12
CTER/L2525-6T32	6	6	32	25	25	150	56	25	25.6	7	12
CTER/L3232-6T32	6	6	32	32	32	170	56	32	32.6	-	12
CTER/L2525-8T16	8	8	16	25	25	150	47	25	26.1	7	12
CTER/L2525-8T25	8	8	25	25	25	150	47	25	26.1	7	12
CTER/L3232-8T25	8	8	25	32	32	170	47	32	33.1	-	12
CTER/L3232-8T32	8	8	32	32	32	170	56	32	33.1	-	12
CTER/L2525-8T36	8	8	36	25	25	150	60	25	26.1	7	12
CTER/L3232-8T36	8	8	36	32	32	170	60	32	33.1	-	12

When groove depth is larger than (insert length - 0.059" [1.5 mm]), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CTER/L10-2T08, CTER/L1616-2T08	CM5X0.8X16-A	P-4
CTER/L12-2T08, CTER/L2020-2T08	CM5X0.8X20-A	P-4
CTER/L16-2T08, CTER/L2525-2T08	CM5X0.8X25-A	P-4
CTER/L10-2T12, CTER/L1616-2T12	CM5X0.8X16-A	P-4
CTER/L12-2T12, CTER/L2020-2T12	CM5X0.8X20-A	P-4
CTER/L16-2T12, CTER/L2525-2T12	CM5X0.8X25-A	P-4
CTER/L10-2T17, CTER/L1616-2T17	CM5X0.8X16-A	P-4
CTER/L12-2T17, CTER/L2020-2T17	CM5X0.8X20-A	P-4
CTER/L16-2T17, CTER/L2525-2T17	CM5X0.8X25-A	P-4
CTER/L2525-2T20	CM5X0.8X25-A	P-4
CTER/L10-3T09, CTER/L1616-3T09	CM5X0.8X16-A	P-4
CTER/L12-3T09, CTER/L2020-3T09	CM5X0.8X20-A	P-4
CTER/L16-3T09, CTER/L2525-3T09	CM5X0.8X25-A	P-4
CTER/L1616-3T12	CM5X0.8X16-A	P-4
CTER/L12-3T12, CTER/L2020-3T12	CM5X0.8X20-A	P-4
CTER/L16-3T12, CTER/L2525-3T12	CM5X0.8X25-A	P-4
CTER/L10-3T20, CTER/L1616-3T20	CM5X0.8X16-A	P-4
CTER/L12-3T20, CTER/L2020-3T20	CM5X0.8X20-A	P-4
CTER/L16-3T20, CTER/L2525-3T20	CM5X0.8X25-A	P-4
CTER/L16-3T25, CTER/L2525-3T25	CM5X0.8X25-A	P-4
CTER/L10-4T10, CTER/L1616-4T10	CM6X1X16-A	P-5
CTER/L12-4T10, CTER/L2020-4T10	CM6X1X20-A	P-5
CTER/L16-4T10, CTER/L2525-4T10	CM6X1X25-A	P-5
CTER/L12-4T15, CTER/L2020-4T15	CM6X1X20-A	P-5

SPARE PARTS

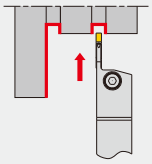
Designation	Clamping screw	Wrench
CTER/L16-4T15, CTER/L2525-4T15	CM6X1X25-A	P-5
CTER/L10-4T25, CTER/L1616-4T25	CM6X1X16-A	P-5
CTER/L12-4T25, CTER/L2020-4T25	CM6X1X20-A	P-5
CTER/L16-4T25, CTER/L2525-4T25	CM6X1X25-A	P-5
CTER/L20-4T25, CTER/L3232-4T25	CM6X1X25-A	P-5
CTER/L12-5T12, CTER/L2020-5T12	CM6X1X20-A	P-5
CTER/L16-5T12, CTER/L2525-5T12	CM6X1X25-A	P-5
CTER/L2525-5T17	CM6X1X25-A	P-5
CTER/L16-5T20, CTER/L2525-5T20	CM6X1X25-A	P-5
CTER/L16-5T32, CTER/L2525-5T32	CM6X1X25-A	P-5
CTER/L20-5T32, CTER/L3232-5T32	CM6X1X25-A	P-5
CTER/L12-6T12, CTER/L2020-6T12	CM8X1.25X20-A	P-6
CTER/L16-6T12, CTER/L2525-6T12	CM8X1.25X25-A	P-6
CTER/L2525-6T16	CM8X1.25X25-A	P-6
CTER/L16-6T20, CTER/L2525-6T20	CM8X1.25X25-A	P-6
CTER/L2525-6T25	CM8X1.25X25-A	P-6
CTER/L16-6T32, CTER/L2525-6T32	CM8X1.25X25-A	P-6
CTER/L20-6T32, CTER/L3232-6T32	CM8X1.25X25-A	P-6
CTER/L16-8T16, CTER/L2525-8T16	CM8X1.25X25-A	P-6
CTER/L16-8T25, CTER/L2525-8T25	CM8X1.25X25-A	P-6
CTER/L20-8T25, CTER/L3232-8T25	CM8X1.25X25-A	P-6
CTER/L3232-8T32	CM8X1.25X25-A	P-6
CTER/L16-8T36, CTER/L2525-8T36	CM8X1.25X25-A	P-6
CTER/L20-8T36, CTER/L3232-8T36	CM8X1.25X25-A	P-6

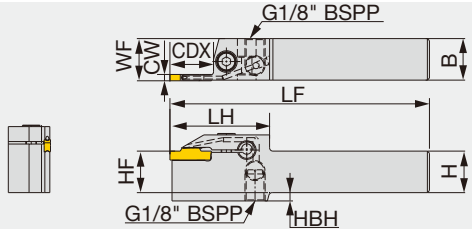
Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045

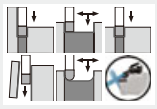
CTER/L-CHP

Tube connection

External grooving and parting toolholder, with high pressure coolant capability







Right hand (R) shown.

Inch	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque
CTER/L12-2T17-CHP	0.079	2	0.669	0.750	0.750	5.000	1.772	0.750	0.754	0.157	4.06
CTER/L16-2T17-CHP	0.079	2	0.669	1.000	1.000	6.000	1.772	1.000	1.004	-	4.06
CTER/L12-3T25-CHP	0.118	3	0.984	0.750	0.750	5.000	2.008	0.750	0.762	0.157	4.06
CTER/L16-3T25-CHP	0.118	3	0.984	1.000	1.000	6.000	2.008	1.000	1.012	-	4.06
CTER/L16-4T25-CHP	0.157	4	0.984	1.000	1.000	6.000	2.170	1.000	1.020	-	5.9
CTER/L16-5T32-CHP	0.197	5	1.260	1.000	1.000	6.000	2.323	1.000	1.022	-	5.9
CTER/L16-6T32-CHP	0.236	6	1.260	1.000	1.000	6.000	2.441	1.000	1.023	0.276	8.85

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L2020-2T17-CHP	2	2	17	20	20	125	45	20	20.1	4	5.5
CTER/L2525-2T17-CHP	2	2	17	25	25	150	45	25	25.1	-	5.5
CTER/L2020-3T20-CHP	3	3	20	20	20	125	48	20	20.3	4	5.5
CTER/L2525-3T20-CHP	3	3	20	25	25	150	48	25	25.3	-	5.5
CTER/L2525-3T25-CHP	3	3	25	25	25	150	51	25	25.3	-	5.5
CTER/L2525-4T25-CHP	4	4	25	25	25	150	55	25	25.5	-	8
CTER/L2525-5T20-CHP	5	5	20	25	25	150	49	25	25.58	-	8
CTER/L2525-6T20-CHP	6	6	20	25	25	150	52	25	25.58	7	12

When groove depth is larger than (insert length - 0.059" [1.5 mm]), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS




Designation	Clamping screw	Wrench
CTER/L12-2T17-CHP	CM5X0.8X20-A	P-4
CTER/L16-2T17-CHP	CM5X0.8X20-A	P-4
CTER/L12-3T25-CHP	CM5X0.8X25-A	P-4
CTER/L16-3T25-CHP	CM5X0.8X25-A	P-4
CTER/L16-4T25-CHP	CM6X1X16-A	P-5
CTER/L16-5T32-CHP	CM6X1X16-A	P-5
CTER/L16-6T32-CHP	CM8X1.25X20-A	P-6

METRIC SPARE PARTS

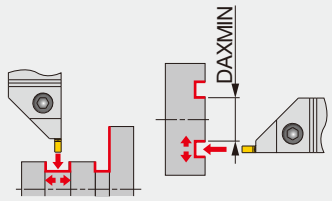


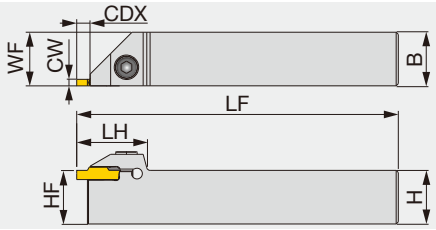

Designation	Clamping screw	Wrench
CTER/L2020-2T17-CHP	CM5x0.8x20-A	P-4
CTER/L2525-2T17-CHP	CM5x0.8x25-A	P-4
CTER/L2020-3T20-CHP	CM5x0.8x20-A	P-4
CTER/L2525-3T20-CHP	CM5x0.8x25-A	P-4
CTER/L2525-3T25-CHP	CM5x0.8x25-A	P-4
CTER/L2525-4T25-CHP	CM6x1x16-A	P-5
CTER/L2525-5T20-CHP	CM6x1x16-A	P-5
CTER/L2525-6T20-CHP	CM8x1.25x20-A	P-6

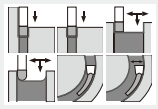
Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045
Parts for coolant hose → F290

CTEFR/L

External face grooving and turning toolholder







Right hand (R) shown.

Inch	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque
CTEFR/L12-4T04	0.157	2, 3, 4	0.189	0.750	0.750	5.000	1.300	0.750	0.770	6.27
CTEFR/L16-4T04	0.157	2, 3, 4	0.189	1.000	1.000	6.000	1.300	1.000	1.020	6.27
CTEFR/L12-6T04	0.236	5, 6	0.189	0.750	0.750	5.000	1.460	0.750	0.770	6.27
CTEFR/L16-6T04	0.236	5, 6	0.189	1.000	1.000	6.000	1.460	1.000	1.020	6.27

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque*
CTEFR/L2020-4T04	4	2, 3, 4	4.8	20	20	125	33	20	20.5	8.5
CTEFR/L2525-4T04	4	2, 3, 4	4.8	25	25	150	33	25	25.5	8.5
CTEFR/L2020-6T04	6	5, 6	4.8	20	20	125	37	20	20.6	8.5
CTEFR/L2525-6T04	6	5, 6	4.8	25	25	150	37	25	25.6	8.5

Use the right-hand insert for the right-hand holder with DTF insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L12-4T04	CM6X1X20-A	P-5
CTEFR/L16-4T04	CM6X1X25-A	P-5
CTEFR/L12-6T04	CM6X1X20-A	P-5
CTEFR/L16-6T04	CM6X1X25-A	P-5

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L2020-4T04	CM6X1X20-A	P-5
CTEFR/L2525-4T04	CM6X1X25-A	P-5
CTEFR/L2020-6T04	CM6X1X20-A	P-5
CTEFR/L2525-6T04	CM6X1X25-A	P-5

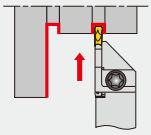
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN / DGL	0.079	11.614
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / SGN / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTX / DTM / DTR	0.079	11.614
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

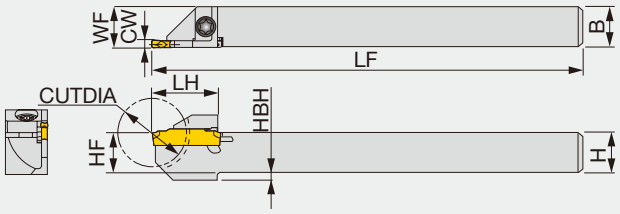
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTX / DTM / DTR	2	295
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

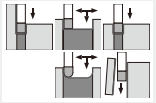
Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045

JCTER/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

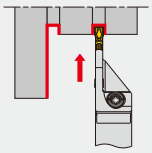
Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque
JCTER/L08-2T12	0.079	2	0.945	0.500	0.500	4.750	0.748	0.500	0.504	0.051	2.21
JCTER/L08-3T12	0.118	3	0.945	0.500	0.500	4.750	0.748	0.500	0.512	0.051	2.21
JCTER/L10-2T16	0.079	2	1.260	0.625	0.625	4.750	0.945	0.625	0.629	-	2.21
JCTER/L10-3T16	0.118	3	1.260	0.625	0.625	4.750	0.945	0.625	0.637	-	2.21

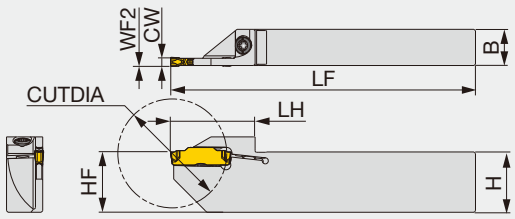
Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

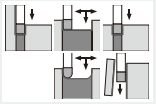
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

JCTER/L2012

External grooving and parting toolholder, for Swiss lathes, with 20 mm shank height







Right hand (R) shown.

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	Torque
JCTER/L2012H2T18	2	2	36	20	12	100	25	20	0.1	3
JCTER/L2012H3T21	3	3	42	20	12	100	28	20	0.3	3

(1) "WF2" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: N·m

SPARE PARTS





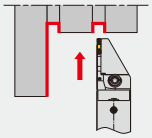
Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

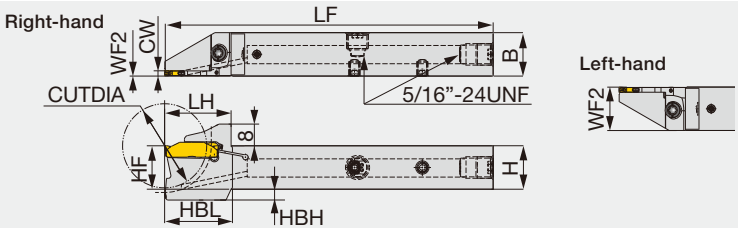
Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045

JCTER/L-CHP

Direct connection

External grooving and parting toolholder, with high pressure coolant capability





Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque
JCTER/L08X2T12-CHP	0.079	2	0.980	0.500	0.500	4.750	0.972	0.500	0 / 0.500	0.169	0.965	2.21
JCTER/L10X2T12-CHP	0.079	2	0.980	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.039	0.965	2.21
JCTER/L10X2T16-CHP	0.079	2	1.260	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.157	0.965	2.21
JCTER/L12X2T16-CHP	0.079	2	1.260	0.750	0.750	4.750	0.972	0.750	0 / 0.750	0.037	0.965	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

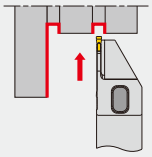
(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

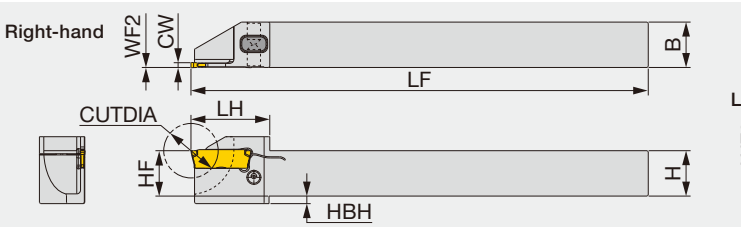
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

JTTER/L

External grooving and parting toolholder, for Swiss lathes





Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque
JTTER/L1010H1.2D12	1.2	0.9	12	10	10	100	17	10	0/10	-	1.5
JTTER/L1212F1.2D16	1.2	0.9	16	12	12	85	19	12	0/12	-	1.5
JTTER/L1212X1.2D16	1.2	0.9	16	12	12	120	19	12	0/12	-	1.5
JTTER/L1212X1.2D20	1.2	0.9	20	12	12	120	21	12	0/12	2	1.5
JTTER/L1616X1.2D20	1.2	0.9	20	16	16	120	21	16	0/16	-	2

(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: N·m

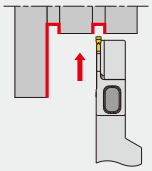
SPARE PARTS

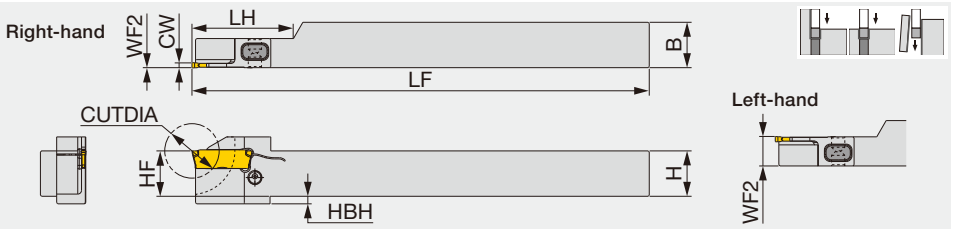
Designation	Clamping screw	Clamping pin	Wrench
JTTER/L1010...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1212...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1616...	SRM5-24145-RL	PIN-32121	P-2.5F

Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045
Parts for coolant hose → F290

JTTER/L-S

External grooving and parting toolholder, for Swiss lathes (for sub spindle)





Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque
JTTER/L1010H1.2D12-S	1.2	0.9	12	10	10	100	22.8	10	0/7.7	-	1.5
JTTER1212F1.2D16-S (2)	1.2	0.9	16	12	12	85	22.8	12	0	-	1.5
JTTER/L1212X1.2D16-S	1.2	0.9	16	12	12	120	26.8	12	0/7.7	-	1.5
JTTER/L1212X1.2D20-S	1.2	0.9	20	12	12	120	26.8	12	0/7.7	2	1.5
JTTER/L1616X1.2D20-S	1.2	0.9	20	16	16	120	26.8	16	0/7.7	-	1.5

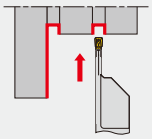
(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(2) No clamping screw from the insert side.
Torque: Recommended clamping torque: N·m

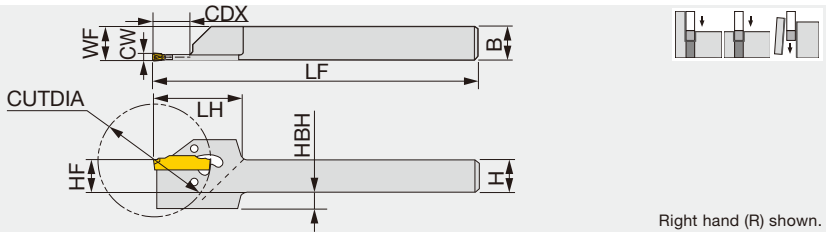
SPARE PARTS

Designation	Clamping screw	Clamping pin	Wrench
JTTER/L**-S	SSM3.5x0.35	PIN-SL-TC	P-2F

CGER/L

External deep grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

Wrench (CRW**) is not included. Please order it separately. Insert is clamped by the elastic deformation of the upper jaw.
(1) DG*/SG* maximum parting diameter will depend on the insert.
(2) "WF" value is calculated with groove width "CW" shown in the table.

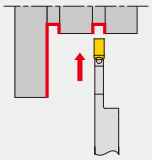
SPARE PARTS

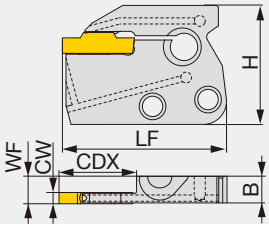
Designation	Wrench (Option)
CGER/L2020-1.4T14	CRW23
CGER/L****-2T17 - 4T19	CRW33

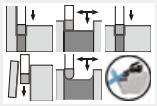
Reference pages: Inserts → F030 - F044, Standard cutting conditions → F045

CAER/L-CHP

External grooving and parting adapter, with high pressure coolant capability







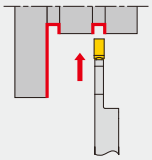
Right hand (R) shown.

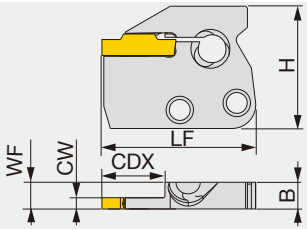
Metric	CW	Seat size	CDX	H	B	LF	WF (1)
CAER/L-2T16-CHP	2	2	16	33	7.2	41.5	7.3
CAER/L-2T20-CHP	2	2	20	33	7.2	45.5	7.3
CAER/L-3T16-CHP	3	3	16	33	7.2	41.5	7.4
CAER/L-3T20-CHP	3	3	20	33	7.2	45.5	7.5
CAER/L-4T16-CHP	4	4	16	33	7.2	41.5	7.7
CAER/L-4T20-CHP	4	4	20	33	7.2	45.5	7.7
CAER/L-5T20-CHP	5	5	20	33	7.2	46.3	7.8
CAER/L-6T20-CHP	6	6	20	33	7.2	46.3	7.8
CAER/L-8T25-CHP	8	8	25	33	7.2	51.1	8.3

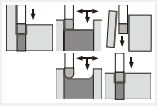
When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
(1) WF is calculated with the groove width (CW) in the above table.

CAER/L-MD

External grooving and parting adapter







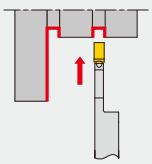
Right hand (R) shown.

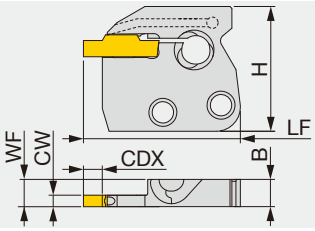
Metric	CW	Seat size	CDX	H	B	LF	WF (1)
CAER/L-2T16-MD	2	2	16	33	7.2	41.5	7.3
CAER/L-3T16-MD	3	3	16	33	7.2	41.5	7.4
CAER/L-4T16-MD	4	4	16	33	7.2	41.5	7.7
CAER/L-5T20-MD	5	5	20	33	7.2	46.3	7.8
CAER/L-6T20-MD	6	6	20	33	7.2	46.3	7.8
CAER/L-8T25-MD	8	8	25	33	7.2	51.1	8.3

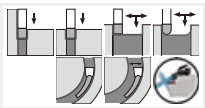
(1) WF is calculated with the groove width (CW) in the above table.

CAEFR/L-CHP

Face and external grooving adapter, with high pressure coolant capability







Right hand (R) shown.

Metric	CW	Seat size	CDX	H	B	LF	WF (1)
CAEFR/L-4T04-CHP	4	2,3,4	4.8	33	7.2	41.5	7.7
CAEFR/L-6T04-CHP	6	5,6	4.8	33	7.2	46.3	7.8

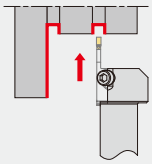
Use the right-hand insert for the right-hand holder with DTF insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.

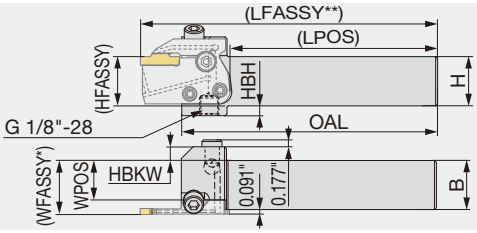
Reference pages: Inserts → F030 - F044, Shanks and toolholders → F024 - F026
Standard cutting conditions → F045, Technical Reference → L059

CHSR/L-CHP

Tube connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	CAE*R/L**-CHP, -MD	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	CAE*R/L**-CHP, -MD	3.69

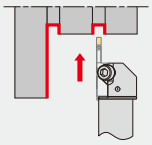
Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	CAE*R/L**-CHP, -MD	6.5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	CAE*R/L**-CHP, -MD	6.5

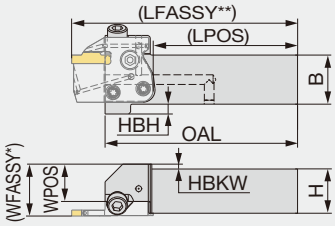
WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

CHSR/L-CHP-MC

Direct connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Metric	H	B	OAL	LPOS	WPOS	HBKW	HBH	Adapter (Option)	Torque
CHSR/L2020-CHP-MC	20	20	98	73.5	14	6	10	CAE*R/L**-CHP, -MD	6.5
CHSR/L2525-CHP-MC	25	25	98	73.5	19	-	5	CAE*R/L**-CHP, -MD	6.5

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179
CHSR/L**-CHP-MC	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	-

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

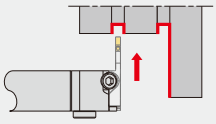
Shank	External grooving adapter		Face grooving adapter		External and face grooving adapter	
	CAER**-CHP, -MD	CAEL**-CHP, -MD	CAFR**-CHP	CAFL**-CHP	CAEFR**-CHP	CAEFL**-CHP
CHSR**-CHP (-MC)	●			●	●	
CHSL**-CHP (-MC)		●	●			●

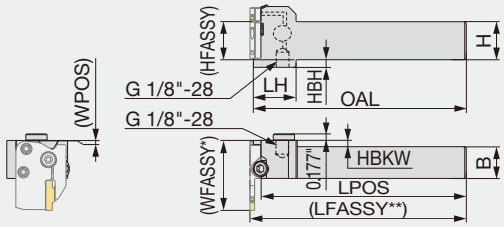
● : Corresponding

Reference pages: Inserts → F030 - F044, Adapters → F023, Standard cutting conditions → F045
Parts for coolant hose → F290, Technical Reference → L059

CHFVR/L-CHP

Shank for perpendicularly-mounted adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	CAE*L/R**-CHP, -MD	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	CAE*L/R**-CHP, -MD	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	CAE*L/R**-CHP, -MD	6.5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	CAE*L/R**-CHP, -MD	6.5

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	External grooving adapter		Face grooving adapter		External and face grooving adapter	
	CAER**-CHP, -MD	CAEL**-CHP, -MD	CAFR**-CHP	CAFL**-CHP	CAEFR**-CHP	CAEFL**-CHP
CHFVR**-CHP		●	●			●
CHFVL**-CHP	●			●	●	

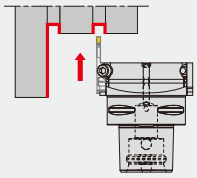
● : Corresponding

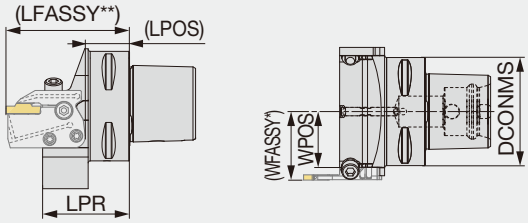
Reference pages: Inserts → F030 - F044, Adapters → F023, Standard cutting conditions → F045
Parts for coolant hose → F290, Technical Reference → L059

C*CHSN-CHP

Direct connection

Toolholder with TungCap connection, for adapter, with high pressure coolant capability





Right-hand (R) adapter shown.

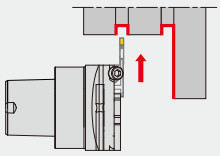
Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	CAE*R/L**-CHP, -MD	6.5
C4CHSN21047-CHP	40	46.5	21.5	21	CAE*R/L**-CHP, -MD	6.5
C5CHSN26047-CHP	50	47	22.5	26	CAE*R/L**-CHP, -MD	6.5
C6CHSN33050-CHP	63	50	24.5	32.5	CAE*R/L**-CHP, -MD	6.5

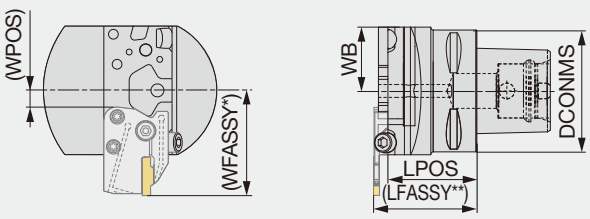
WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

C*CHFVN-CHP

Direct connection

Toolholder with TungCap connection, for perpendicularly-mounted adapter, with high pressure coolant capability





Left-hand (L) adapter shown.

Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	CAE*R/L**-CHP, -MD	6.5
C4CHFVN26046-CHP	40	46	26	1.5	CAE*R/L**-CHP, -MD	6.5
C5CHFVN26046-CHP	50	46	26	1.5	CAE*R/L**-CHP, -MD	6.5
C6CHFVN33046-CHP	63	46	33	8.5	CAE*R/L**-CHP, -MD	6.5

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS



Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CH**N**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N

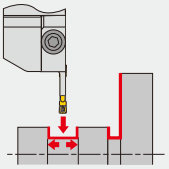
Recommended clamping torque (N·m)

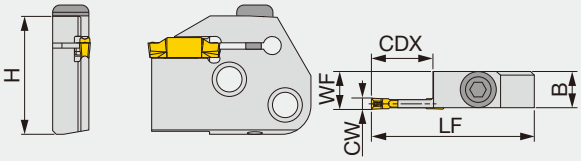
Clamping screw	Torque (N·m)
SR M5-04451	2.5
SR M6X12DIN6912	6.5
SR M6X20-XT	6.5

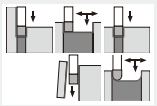
Reference pages: Inserts → F030 - F044, Adapters → F023, Standard cutting conditions → F045
Technical Reference → L059

CAER/L

External grooving, parting and turning adapter







Right hand (R) shown.

Metric	CW	Seat size	CDX	H	B	LF	WF	Torque
CAER/L-3T16	3	3	16	32.7	10	45	10.4	5
CAER/L-4T16	4	4	16	32.7	10	45	10.5	5
CAER/L-5T20	5	5	20	32.7	10	49	10.5	5
CAER/L-6T20	6	6	20	32.7	10	49	10.5	5

Torque: Recommended clamping torque: N·m
Not compatible with TungModularSystem
When groove depth is larger than insert length - 1.5 mm, please use 1-cornered insert.

SPARE PARTS



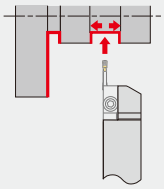


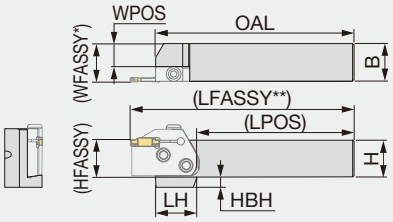
Designation	Clamping screw	Wrench
CAER/L...	BHM6-20-A	P-4

Reference pages: Inserts → F030 - F044, Shanks and toolholders → F028, F029
Standard cutting conditions → F045

CHSR/L

Shank for adapter





Right hand (R)
with right-hand adapter shown.

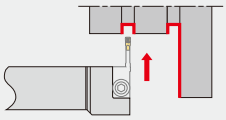
Inch	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Adapter (Option)
CHSR/L12-U	0.750	0.750	5.330	4.227	1.380	0.356	0.750	0.502	CAER/L...
CHSR/L16-U	1.000	1.000	5.330	4.227	1.100	0.606	1.000	0.280	CAER/L...
CHSR/L20-U	1.250	1.250	6.330	5.227	-	0.856	1.250	-	CAER/L...

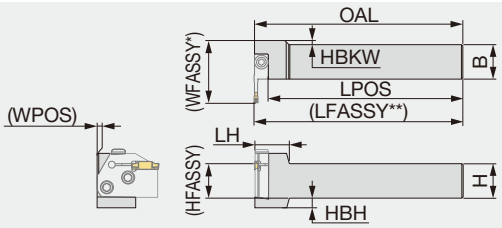
Metric	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Adapter (Option)
CHSR/L2020	20	20	133	105	35	10	20	12	CAER/L...
CHSR/L2525	25	25	133	105	28	15	25	7	CAER/L...
CHSR/L3232	32	32	153	125	-	22	32	-	CAER/L...

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Not compatible with TungModularSystem

CHFVR/L

Shank for adapter, perpendicularly mounted





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Adapter (Option)
CHFVR/L12-U	0.750	0.750	6.000	5.606	0.984	-0.001	0.352	0.750	0.502	CAEL/R...
CHFVR/L16-U	1.000	1.000	6.000	5.606	0.984	-0.001	0.102	1.000	0.276	CAEL/R...
CHFVR/L20-U	1.250	1.250	7.000	6.606	0.984	0.147	-	1.250	-	CAEL/R...

Metric	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Adapter (Option)
CHFVR/L2020	20	20	150	140	25	0	8	20	12	CAEL/R...
CHFVR/L2525	25	25	150	140	25	0	3	25	7	CAEL/R...
CHFVR/L3232	32	32	170	160	25	4	-	32	-	CAEL/R...

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Not compatible with TungModularSystem

SPARE PARTS





Designation	Clamping screw	Wrench
CH**R/L...	CSHB-6-A	P-4

Combination of adapter and shank

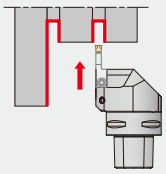
Shank	External grooving adapter		Face grooving adapter	
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	
CHFVR...		●	●	
CHFVL...	●			●

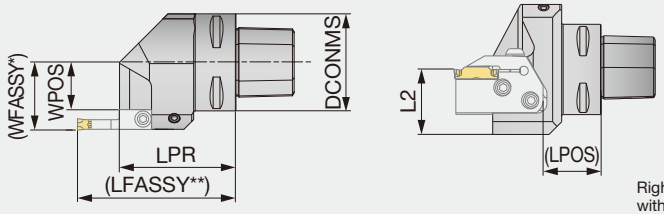
● : Corresponding

Reference pages: Inserts → F030 - F044, Adapters → F027, Standard cutting conditions → F045

C-CHSR/L

Toolholder with TungCap connection for adapter





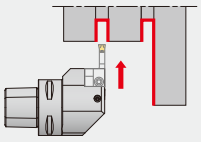
Right hand (R)
with right-hand adapter shown.

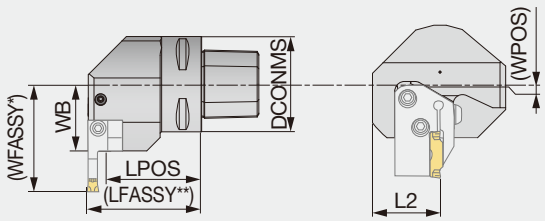
Metric	DCONMS	LPR	LPOS	L2	WPOS	Adapter (Option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAER/L...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAER/L...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAER/L...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAER/L...

WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type. If needed, the coolant direction can be adjusted by the nozzle.
Applicable for 7 MPa coolant. Not compatible with TungModularSystem.

C-CHFVR/L

Toolholder with TungCap connection for adapter, perpendicularly mounted





Right hand (R)
with left-hand adapter shown.

Metric	DCONMS	LPOS	L2	WB	WPOS	Adapter (Option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAEL/R...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAEL/R...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAEL/R...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAEL/R...

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type. If needed, the coolant direction can be adjusted by the nozzle.
Applicable for 7 MPa coolant. Not compatible with TungModularSystem.

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CH**R/L...	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CH**R/L...	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CH**R/L...	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CH**R/L...	SATZ-M10X1-M5	CSHB-6-A	P-4

Combination of adapter and toolholder

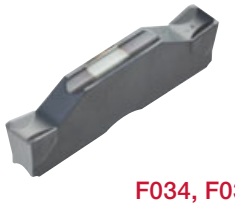
Toolholder	External grooving adapter		Face grooving adapter	
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

● : Corresponding

Reference pages: Inserts → F030 - F044, Adapters → F027, Standard cutting conditions → F045

External grooving and parting

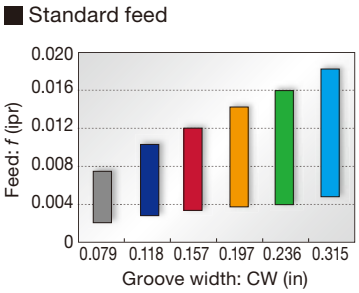
DGM type (2 corners) SGM type (1 corner)

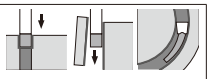


F034, F035

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"





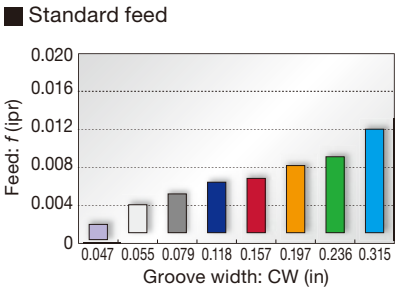
DGS type (2 corners) SGS type (1 corner)

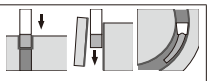


F036, F037

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.047" - 0.315"





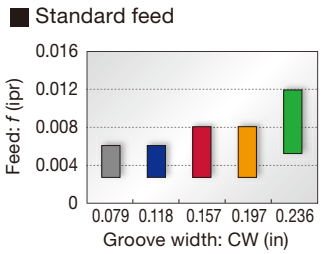
DGL type (2 corners)

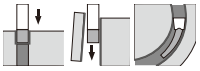


F037

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel which often presents challenges in chip control
CW = 0.079" - 0.236"





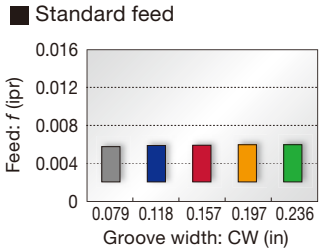
DGG type (2 corners)

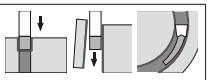


F038

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"





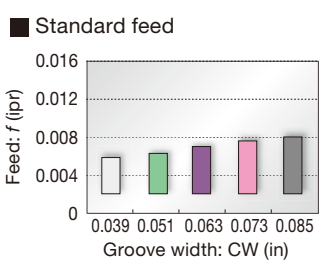
DGE type (2 corners)



F038

For high accurate and shallow groove

Excellent chip control
CW = 0.039" - 0.085"





External
Internal
Face
Parting
Others

Please see page F*** for the product details.

External and face grooving, and turning

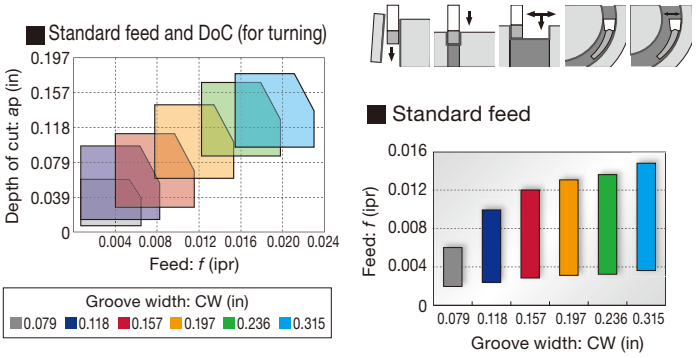
DTM type (2 corners)



F039

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.079" - 0.315"



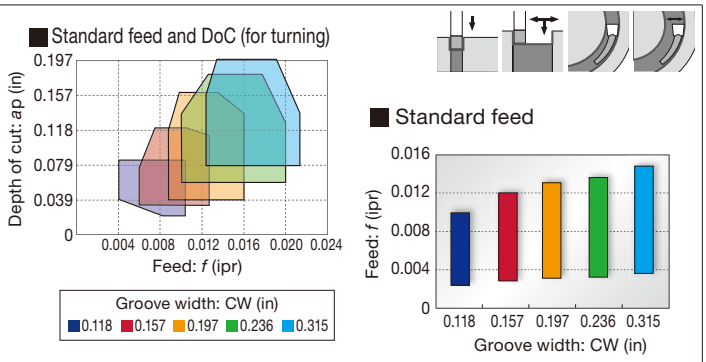
DTE type (2 corners)



F039, F040

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.104" - 0.315"



External, internal and face grooving, and turning

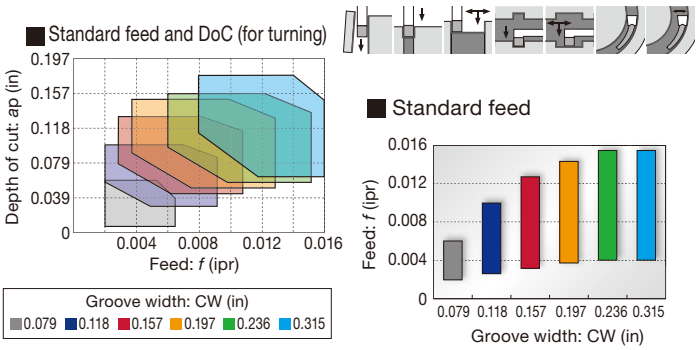
DTX type (2 corners)



F040

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.079" - 0.315"



Please see page F*** for the product details.

Profiling and undercutting

DTR type (2 corners)
STR type (1 corner)

Molded
DTR, STR



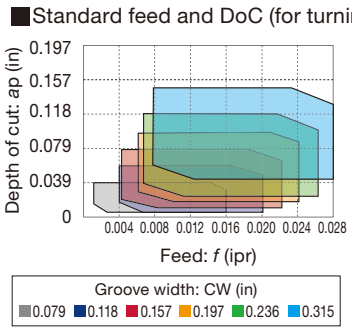
Ground
DTR

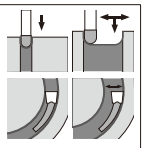


F041, F042

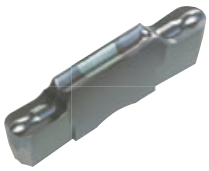
Full radius type

Excellent chip control
Molded and ground inserts available
CW = 0.079" - 0.315"





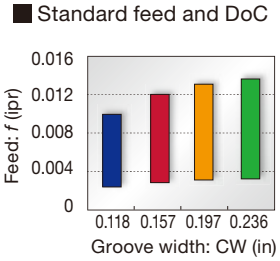
DTIU type
(2 corners)

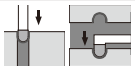


F042

Full radius type

Excellent chip control for undercutting
CW = 0.118" - 0.236"





Aluminum wheel machining

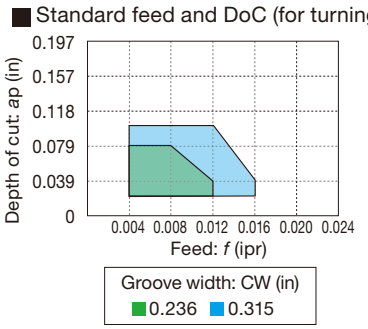
DTA type
(2 corners)

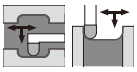


F043

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"





For high feed external and face turning of hardened steel parts

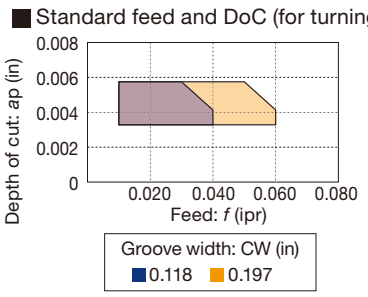
STH type
(1 corner)

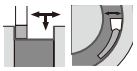


F043

External and face turning of hardened steel parts

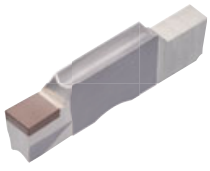
High efficiency machining using light D.O.C. and increased feeds
CW = 0.118", 0.197"





External grooving of hardened steel

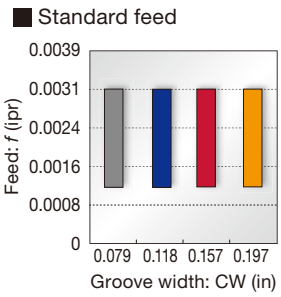
SGN-CBN type
(1 corner)

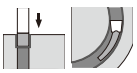


F044

For hardened steel cutting

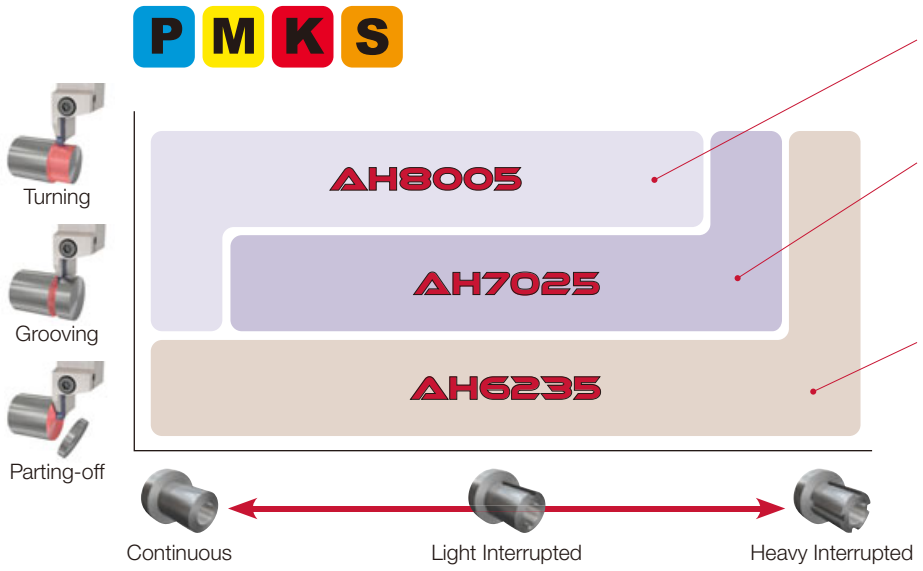
Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.197"
(Tol. ±0.001")





Please see page F*** for the product details.

GRADE SELECTION



GRADES

AH8005 P M K S
- First choice for external, internal, and side-turning, continuous cuts

AH7025 P M K S
- First choice for light interrupted cuts or a mix of continuous and interrupted cuts
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH6235 P M K
- First choice for heavy interrupted cuts, as well as parting and facing applications

AH725 P M S
- General purpose PVD grade for high fracture resistance

T515 K
- First recommended grade for cast iron
- Excellent wear resistance in high speed machining

T9225 P
- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P
- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K
- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S
- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S
- Recommended for non-ferrous materials and titanium

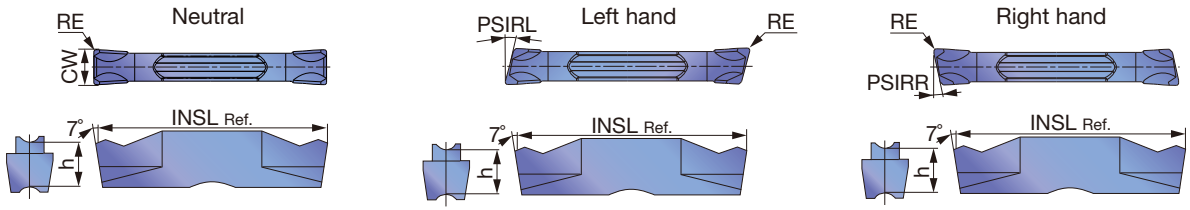
TH10 N
- Recommended for non-ferrous materials

BXA10 H
- Coated CBN grade designed for turning hardened steel parts

BX360 H
- Developed for grooving applications of hardened steel parts

DGM

External grooving and parting



P	Steel	★	★	☆	★		☆	★		★				
M	Stainless		★	☆	★		★	★						
K	Cast iron		★		★	☆	☆	★		☆			☆	
N	Non-ferrous												☆	
S	Superalloys		★	☆	★	★							★	
H	Hard materials													

★ : First choice
☆ : Second choice

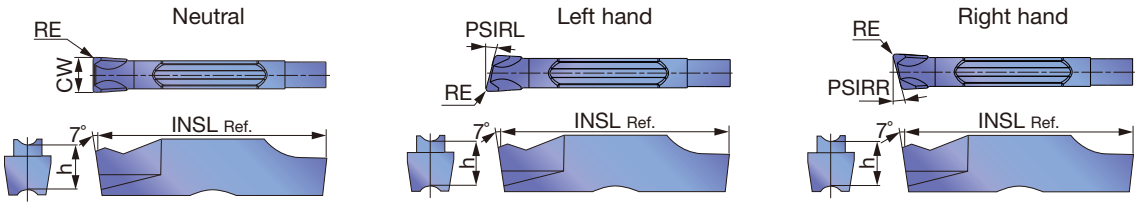
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			Un-coated		INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530			KS05F					
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●	●	●			●		0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008		●	●			●							0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008		●	●			●							0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008		●	●			●							0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008		●	●			●							0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008		●	●			●							0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008		●	●			●							0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008			●			●							0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008			●			●							0.762	0.197	15°	0°
DGM2.39-020	2	N	2.39	0.094	0.008		●		●			●						0.787	0.197	0°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●			●		0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008		●	●			●							0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008		●	●			●							0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.008			●			●							0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.008			●			●							0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008		●	●			●							0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008		●	●			●							0.787	0.197	15°	0°
DGM3.18-020	3	N	3.18	0.125	0.008		●		●			●						0.787	0.197	0°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●			●		0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012		●	●			●							0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012		●	●			●							0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012		●	●			●							0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012		●	●			●							0.787	0.197	15°	0°
DGM4.76-040	5	N	4.76	0.187	0.016		●		●			●						0.984	0.217	0°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●			●		0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012		●	●			●							0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	●				●		0.984	0.217	0°	0°
DGM6.35-040	6	N	6.35	0.250	0.016		●		●			●						0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	●	●	●		●	●				●		1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

SGM

External deep grooving and parting



P	Steel	★	☆	★	☆	★							
M	Stainless	★	☆	★	★	★							
K	Cast iron	★		★	☆	★		☆					
N	Non-ferrous							☆					
S	Superalloys	★	☆	★				★					
H	Hard materials												

★ : First choice
☆ : Second choice

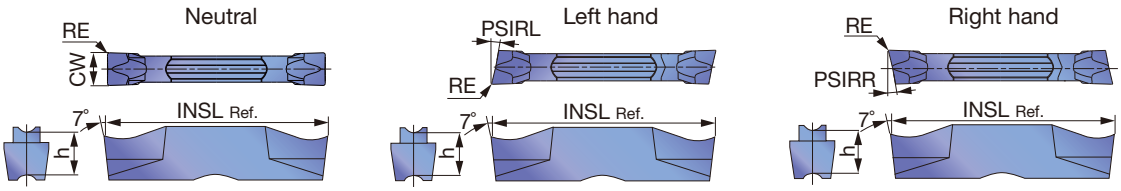
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGM2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●		●							0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●		●							0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM8-040	8	N	8	0.315	0.016	●		●		●	●					1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

DGS

External grooving and parting



		T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530	KS05F
P	Steel	★	★	☆	★	☆	★	★	
M	Stainless		★	☆	★	★	★		
K	Cast iron		★		★	☆	★	☆	☆
N	Non-ferrous								☆
S	Superalloys		★	☆	★				★
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet			Uncoated			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530			KS05F						
DGS1.2-003	0.9	N	1.2	0.047	0.0012			●										0.630	0.185	0°	0°
DGS1.4-005	1	N	1.4	0.055	0.002			●										0.630	0.169	0°	0°
DGS1.4-010	1	N	1.4	0.055	0.004			●										0.630	0.169	0°	0°
DGS1.4-016	1	N	1.4	0.055	0.006		●	●		●								0.630	0.169	0°	0°
DGS2-005	2	N	2	0.079	0.002			●										0.787	0.197	0°	0°
DGS2-010	2	N	2	0.079	0.004			●										0.787	0.197	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008			●		●								0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008			●		●								0.768	0.197	15°	0°
DGS2.39-020	2	N	2.39	0.094	0.008		●		●		●							0.787	0.197	0°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008			●		●								0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008			●		●								0.766	0.197	15°	0°
DGS3.18-020	3	N	3.18	0.125	0.008		●		●		●							0.787	0.197	0°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012		●	●		●								0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012		●	●		●								0.787	0.197	4°	0°
DGS4.76-040	5	N	4.76	0.187	0.016		●		●		●							0.984	0.217	0°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●			●			0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●				●			0.984	0.217	0°	0°
DGS6.35-040	6	N	6.35	0.250	0.016		●		●		●							0.984	0.217	0°	0°
DGS8-040	8	N	8	0.315	0.016		●		●		●				●			1.181	0.264	0°	0°

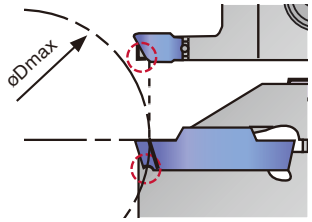
● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameters than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.141
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

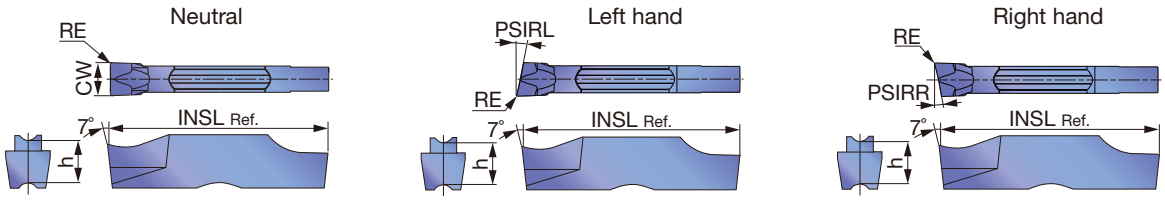
Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.141
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.338



Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

SGS

External deep grooving and parting



P	Steel	★	☆	★	☆	★															
M	Stainless	★	☆	★	★	★															
K	Cast iron	★		★	☆	★	☆														
N	Non-ferrous						☆														
S	Superalloys	★	☆	★			★														
H	Hard materials																				

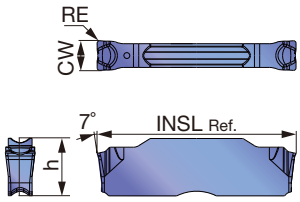
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated							INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F										
SGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●							0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●		●									0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●		●									0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●		●									0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●		●									0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●							0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●		●									0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●		●									0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●		●									0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●		●									0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●		●									0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●		●									0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●		●									0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●		●									0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●							0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●							0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●							0.984	0.217	0°	0°
SGS8-040	8	N	8	0.315	0.016	●		●		●								1.181	0.264	0°	0°

● : Line up

DGL

External grooving and parting



P	Steel	★	★	★																	
M	Stainless	★	★	★																	
K	Cast iron	★	★	★																	
N	Non-ferrous																				
S	Superalloys	★	★																		
H	Hard materials																				

★ : First choice
☆ : Second choice

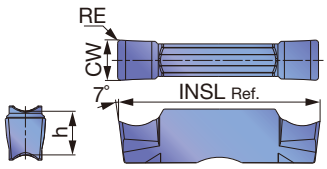
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated													INSL (in)	h (in)
					AH7025	AH8005	AH6235												
DGL2-020	2	2	0.079	0.008	●	●	●											0.787	0.197
DGL3-025	3	3	0.118	0.010	●	●	●											0.787	0.197
DGL4-030	4	4	0.157	0.012	●	●	●											0.787	0.197
DGL5-030	5	5	0.197	0.012	●	●	●											0.984	0.217
DGL6-080	6	6	0.236	0.031	●	●	●											0.984	0.217

● : Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

DGG

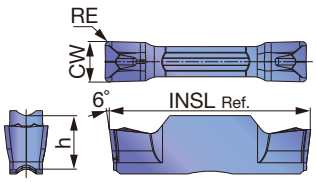
External grooving (for high precision)



| | | |

DTM

External face grooving and turning



P	Steel	★	★	★	
M	Stainless	★	★	★	
K	Cast iron	★	★	★	
N	Non-ferrous				
S	Superalloys	★	★		
H	Hard materials				

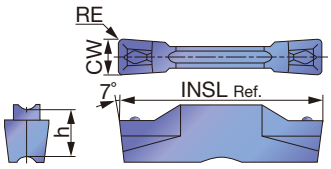
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH8005	Coated AH6235	INSL (in)	h (in)
DTM2-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DTM3-030	3	3	0.118	0.012	●	●	●	0.787	0.197
DTM4-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DTM4-080	4	4	0.157	0.031	●	●	●	0.787	0.197
DTM5-080	5	5	0.197	0.031	●	●	●	0.984	0.217
DTM6-080	6	6	0.236	0.031	●	●	●	0.984	0.217
DTM8-080	8	8	0.315	0.031	●	●	●	1.181	0.264

● : Line up

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	☆	☆	★
M	Stainless		★	☆	★	
K	Cast iron		★		☆	
N	Non-ferrous					
S	Superalloys		★	☆		
H	Hard materials					

★ : First choice
☆ : Second choice

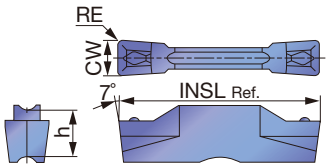
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated T9225	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTE265-015	3	2.65	0.104	0.006	●	●	●	●	●	0.787	0.197
DTE300-020	3	3	0.118	0.008	●	●	●	●	●	0.787	0.197
DTE300-040	3	3	0.118	0.016	●	●	●	●	●	0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	●	●	●	●	0.787	0.197
DTE400-040	4	4	0.157	0.016	●	●	●	●	●	0.787	0.197
DTE400-080	4	4	0.157	0.031	●	●	●	●	●	0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	●	●	●	●	0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	●	●	●	●	0.984	0.217
DTE500-040	5	5	0.197	0.016	●	●	●	●	●	0.984	0.217
DTE500-080	5	5	0.197	0.031	●	●	●	●	●	0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	●	●	●		0.984	0.217
DTE600-080	6	6	0.236	0.031	●	●	●	●		0.984	0.217
DTE600-120	6	6	0.236	0.047	●	●	●	●		0.984	0.217
DTE800-080	8	8	0.315	0.031	●	●	●	●		1.181	0.264
DTE800-120	8	8	0.315	0.047	●	●	●	●		1.181	0.264

●: Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

DTE

External face grooving and turning



P	Steel	★		★	☆	★	☆	★		★			
M	Stainless			★	☆	★	★	★					
K	Cast iron		★	★		★	☆	★					
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

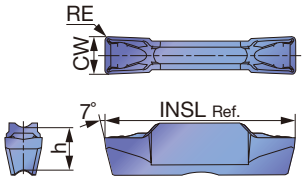
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T515	AH7025	AH725	AH8005	GH130	AH6235	NS9530					
DTE3-020	3	3	0.118	0.008			●		●		●					0.787	0.197
DTE3-040	3	3	0.118	0.016	●	●	●	●	●	●	●	●				0.787	0.197
DTE4-040	4	4	0.157	0.016	●	●	●	●	●	●	●	●				0.787	0.197
DTE4-080	4	4	0.157	0.031			●		●		●					0.787	0.197
DTE5-040	5	5	0.197	0.016		●	●		●		●					0.984	0.217
DTE5-080	5	5	0.197	0.031			●		●		●					0.984	0.217
DTE6-080	6	6	0.236	0.031		●	●		●		●					0.984	0.217

● : Line up

DTX

External, internal and face grooving, and turning



P	Steel	★	★	☆	★	☆	★		★				
M	Stainless		★	☆	★	★	★						
K	Cast iron		★		★	☆	★		☆			☆	
N	Non-ferrous											☆	
S	Superalloys		★	☆	★							★	
H	Hard materials												

★ : First choice
☆ : Second choice

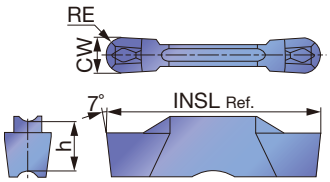
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				Uncoated			INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530				KS05F				
DTX2-020	2	2	0.079	0.008		●		●		●					●			0.787	0.197
DTX3-030	3	3	0.118	0.012	●	●	●	●	●	●	●				●			0.787	0.197
DTX4-040	4	4	0.157	0.016	●	●	●	●	●	●	●				●			0.787	0.197
DTX5-040	5	5	0.197	0.016	●	●	●	●	●	●	●				●			0.984	0.217
DTX6-080	6	6	0.236	0.031		●	●	●	●	●					●			0.984	0.217
DTX8-080	8	8	0.315	0.031		●		●		●					●			1.181	0.264

● : Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	☆	☆				★			
M	Stainless		★	☆	★							
K	Cast iron		★		☆				☆			
N	Non-ferrous											
S	Superalloys		★	☆								
H	Hard materials											

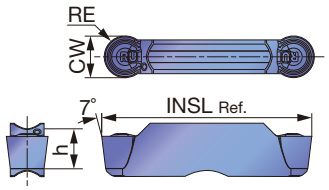
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated							Cermet					INSL (in)	h (in)
					T9225	AH7025	AH725	GH130				NS9530						
DTR300-150	3	3	0.118	0.059	●	●	●	●				●					0.787	0.197
DTR400-200	4	4	0.157	0.079	●	●	●	●				●					0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	●	●	●				●					0.984	0.217
DTR500-250	5	5	0.197	0.098	●	●	●	●				●					0.984	0.217
DTR600-300	6	6	0.236	0.118	●	●	●	●									0.984	0.217

●: Line up

DTR

Profiling and undercutting



P	Steel	★	★	☆	★		☆	★		★						
M	Stainless		★	☆	★		★	★								
K	Cast iron		★		★	☆	☆	★		☆			☆			
N	Non-ferrous												☆			
S	Superalloys		★	☆	★	★							★			
H	Hard materials															

★ : First choice
☆ : Second choice

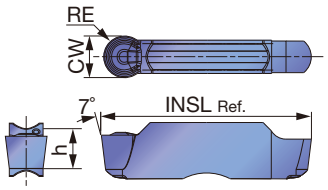
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			Uncoated			INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530			KS05F				
DTR2-100	2	2	0.079	0.039		●		●			●				●			0.787	0.197
DTR3-150	3	3	0.118	0.059	●	●	●	●	●	●	●	●			●			0.787	0.197
DTR4-200	4	4	0.157	0.079	●	●	●	●	●	●	●	●			●			0.787	0.197
DTR5-250	5	5	0.197	0.098	●	●	●	●	●	●	●	●			●			0.984	0.217
DTR6-300	6	6	0.236	0.118	●	●	●	●		●	●				●			0.984	0.217
DTR8-400	8	8	0.315	0.157	●	●	●	●		●	●				●			1.181	0.264

● : Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

STR

Profiling and undercutting



		AH7025	AH8005	KS05F
P	Steel	★	★	
M	Stainless	★	★	
K	Cast iron	★	★	☆
N	Non-ferrous			☆
S	Superalloys	★	★	★
H	Hard materials			

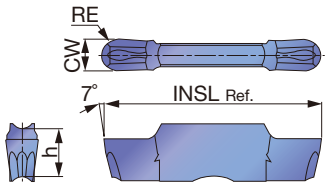
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH8005	Uncoated KS05F	INSL (in)	h (in)
STR2-100	2	2	0.079	0.039	●	●	●	0.787	0.197
STR3-150	3	3	0.118	0.059	●	●	●	0.787	0.197
STR4-200	4	4	0.157	0.079	●	●	●	0.787	0.197
STR5-250	5	5	0.197	0.098	●	●	●	0.984	0.217
STR6-300	6	6	0.236	0.118	●	●	●	0.984	0.217
STR8-400	8	8	0.315	0.157	●	●	●	1.181	0.264

●: Line up

DTIU

Profiling and undercutting (for high precision)



		AH7025	AH725	GH130
P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

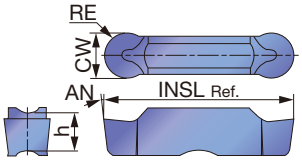
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)
DTIU300-150	3	3	0.118	0.059	●	●	●	0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●	0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●	0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●	0.984	0.217

●: Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

DTA

Aluminum wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

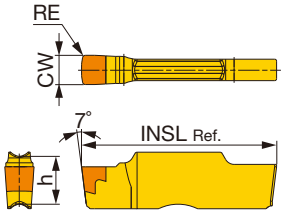
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

●: Line up

STH

External and face turning



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice

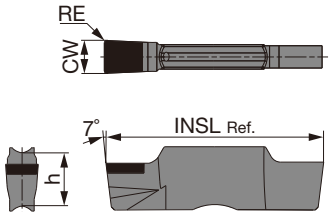
Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BXA10	INSL (in)	h (in)
STH300-SR	3	3	0.118	0.012	●	0.787	0.197
STH500-SR	5	5	0.197	0.012	●	0.984	0.217

●: Line up

Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

SGN

External grooving



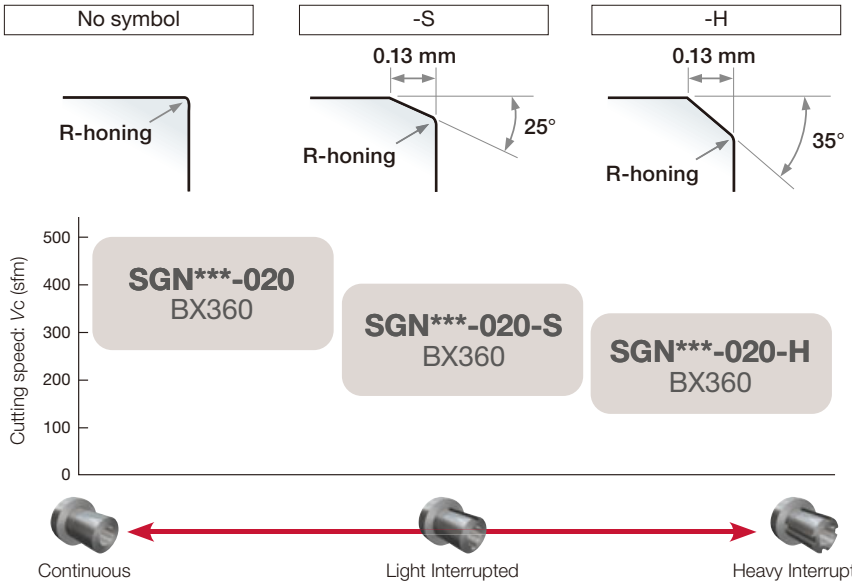
P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN	INSL (in)	h (in)	Condition		
					BX360			Continuous	Light interrupted	Heavy interrupted
SGN200-020	2	2	0.079	0.008	●	0.787	0.197	○		
SGN200-020-S	2	2	0.079	0.008	●	0.787	0.197		○	
SGN200-020-H	2	2	0.079	0.008	●	0.787	0.197			○
SGN300-020	3	3	0.118	0.008	●	0.787	0.197	○		
SGN300-020-S	3	3	0.118	0.008	●	0.787	0.197		○	
SGN300-020-H	3	3	0.118	0.008	●	0.787	0.197			○
SGN400-020	4	4	0.157	0.008	●	0.787	0.197	○		
SGN400-020-S	4	4	0.157	0.008	●	0.787	0.197		○	
SGN400-020-H	4	4	0.157	0.008	●	0.787	0.197			○
SGN500-020-S	5	5	0.197	0.008	●	0.984	0.217		○	
SGN500-020-H	5	5	0.197	0.008	●	0.984	0.217			○

●: Line up

Edge preparations



Reference pages: Toolholders → F016 - F029, Standard cutting conditions → F045

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Wear resistance	T9225, AH8005	262 - 984
		< 300 HB	Impact resistance	AH6235, GH130	164 - 394
		< 300 HB	Surface quality	NS9530	262 - 722
M	Stainless steel 303, 304, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Wear resistance	AH8005	164 - 394
		< 200 HB	Impact resistance	AH6235, GH130	164 - 394
K	Gray cast iron No.250B, etc.	-	First choice	T515	492 - 2297
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 591
	Ductile cast iron 65-45-12, etc.	-	First choice	T515	492 - 984
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH8005	66 - 197
		< HRC 40	Impact resistance	AH7025, AH725, AH6235	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	KS05F	66 - 328
		< HRC 40	Impact resistance	AH7025, AH725	66 - 262

Please see page F030 - F032 for feed: *f* (ipr).

STH

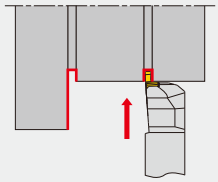
ISO	Grade	CW	Application	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
H	BXA10	0.118"	External turning	328 - 755	0.003 - 0.005	0.016 - 0.039
			Face turning	328 - 755	0.003 - 0.005	0.016 - 0.031
		0.197"	External turning	328 - 755	0.003 - 0.005	0.020 - 0.059
			Face turning	328 - 755	0.003 - 0.005	0.020 - 0.031

SGN

ISO	Grade	Edge preparation	Workpiece condition	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
H	BX360	No symbol	Continuous	262 - 492	0.0012 - 0.0031
		-S	Light interrupted	164 - 394	0.0012 - 0.0031
		-H	Heavy interrupted	131 - 328	0.0012 - 0.0024

STCR/L-18

Precision grooving tools with uniquely shaped insert for swiss type machine and general lathes



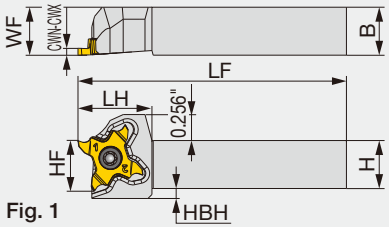


Fig. 1

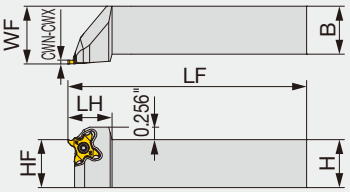
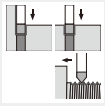


Fig. 2



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.013	0.125	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.013	0.125	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.013	0.125	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.013	0.125	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.013	0.125	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2

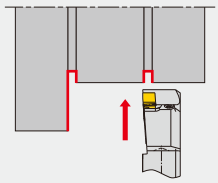
Metric	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*	Fig.
STCR/L1010X18	0.33	3.18	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.33	3.18	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.33	3.18	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.33	3.18	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.33	3.18	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.33	3.18	20	20	120	23	20	25	-	TC*18...	1.2	2
STCR/L2525Z18	0.33	3.18	25	25	135	23	25	30	-	TC*18...	1.2	2

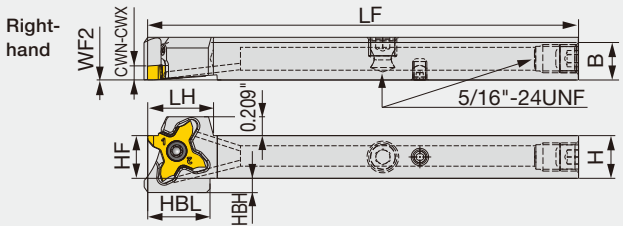
The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert is used for the left hand toolholders (STCL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

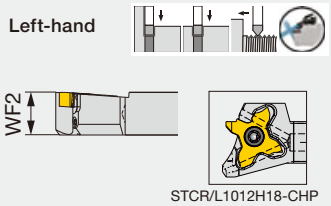
STCR/L-18-CHP

Direct connection

External grooving and threading toolholder, high pressure coolant compatible







STCR/L1012H18-CHP
STCR/L1212*18**B**-CHP

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2	HBH	Insert	Torque
STCR08X18-CHP	0.013	0.125	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR10X18-CHP	0.013	0.125	0.625	0.625	4.75	0.728	-	0.625	0/0.625	-	TC*18...	0.89

Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2	HBH	Insert	Torque*
STCR/L1012H18-CHP	0.33	3.18	10	12	100	17.1	17.1	10	0/12	4	TC*18...	1.2
STCR/L1212X18B-CHP	0.33	3.18	12	12	120	18.5	17.5	12	0/12	4	TC*18...	1.2
STCR/L1616X18-CHP	0.33	3.18	16	16	120	18.5	-	16	0/16	0	TC*18...	1.2

The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert (TC*18L...) is used for the left hand toolholders (STCL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

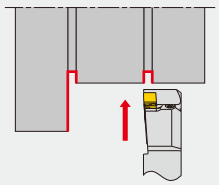
Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR**18	CSTC-4L100DL	T-1008/5	-	-	-	-
STCL**18	CSTC-4L100DR	T-1008/5	-	-	-	-
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

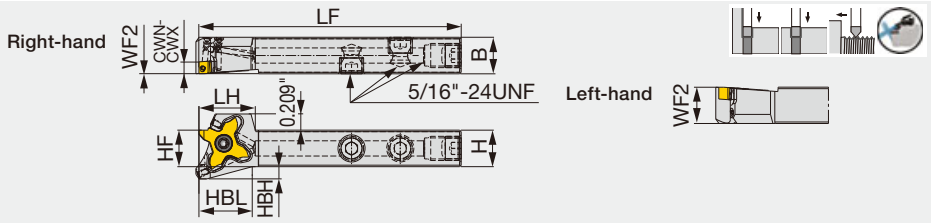
Reference pages: Inserts → F053 - F059, Standard cutting conditions → F060
Parts for coolant hose → F290

STCR/L-18-CHP

Tube connection

External grooving and threading toolholder. High pressure coolant capability.





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2(1)	HBH	Insert	Torque
STCR/L08F18-CHP	0.013	0.125	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89

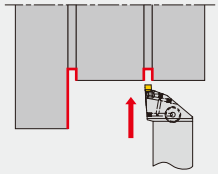
Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2(1)	HBH	Insert	Torque*
STCR/L1212F18B-CHP	0.33	3.18	12	12	85	18.5	17.5	12	0/12	4	TC*18...	1.2

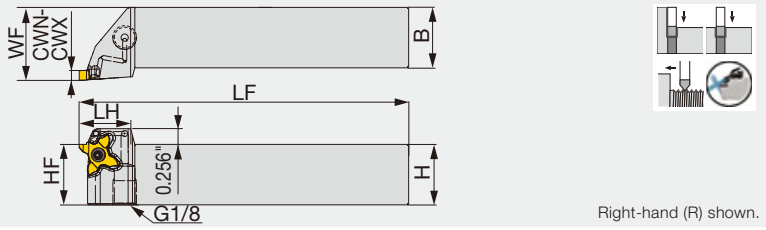
The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
(1) "0/0.500" for the WF2 dimension indicates WF2 = 0 for the right handed tool, WF2 = 0.500 for the left handed tool.
Torque: Recommended clamping torque: lbs·ft (*N·m)

STCR/L-18-CHP

Tube connection

Threading tool - for external theading with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.013	0.125	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.89
STCR/L16-18-CHP	0.013	0.125	1.000	1.000	5.500	0.900	-	1.000	1.250	-	TC*18...	0.89

Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque*
STCR/L2020X18-CHP	0.33	3.18	20	20	120	23	-	20	25	-	TC*18...	1.2
STCR/L2525Z18-CHP	0.33	3.18	25	25	135	23	-	25	30	-	TC*18...	1.2

Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18L...) with the left hand holder (STCL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

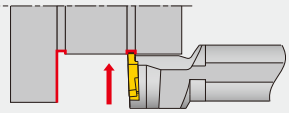
SPARE PARTS

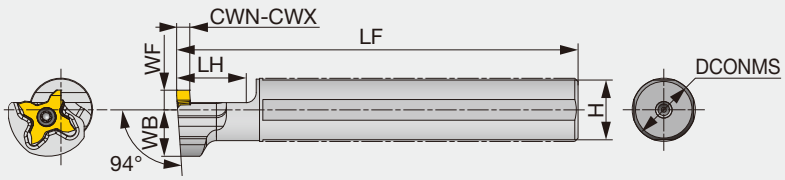
Designation	Clamping screw	Wrench	Coolant plug	Wrench
STCL08F18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	-
STCR08F18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	-
STCL1212F18B-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4
STCR1212F18B-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
STCL**18-CHP	CSTC-4L100DR	T-1008/5	-	-
STCR**18-CHP	CSTC-4L100DL	T-1008/5	-	-

Reference pages: Inserts → F053 - F059, Standard cutting conditions → F060
Parts for coolant hose → F290

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





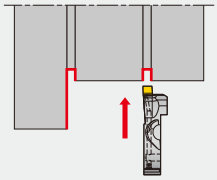
Left-hand (L) shown.

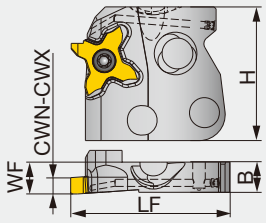
Metric	CWN	CWX	DCONMS	LF	LH	H	WB	WF	Insert	Torque
JS14H-STCL18	0.33	3.18	14	100	20	13	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3.18	15.875	85	20	15	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3.18	16	85	20	15	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3.18	19.05	90	20	18	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3.18	19.05	120	20	18	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3.18	20	90	20	19	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3.18	20	120	20	19	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3.18	22	120	20	21	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3.18	25	100	20	24	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3.18	25.4	120	20	24	12.25	10	TC*18R...	1.2

The left hand toolholder (STCL...) is used with the right hand inserts (TC*18R...)
Torque: Recommended clamping torque: N·m

STCAR/L18-CHP

External grooving and threading adapter, with high pressure coolant capability





Right-hand (R) shown.

Metric	CWN	CWX	WF	H	LF	B	Insert	Torque
STCAR/L18-CHP	0.33	3.18	7.5	33	38	7.2	TC*18...	1.2

Use the right hand insert (TC*18R...) with the right hand adapter (STCAR...). Use the left hand insert (TC*18L...) with the left hand adapter (STCAL...).
Torque: Recommended clamping torque: N·m

SPARE PARTS





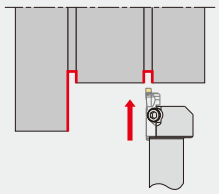
Designation	Clamping screw	Wrench
JS**STCL18	CSTC-4L100DL	T-1008/5
STCAL18-CHP	CSTC-4L100DR	T-1008/5
STCAR18-CHP	CSTC-4L100DL	T-1008/5

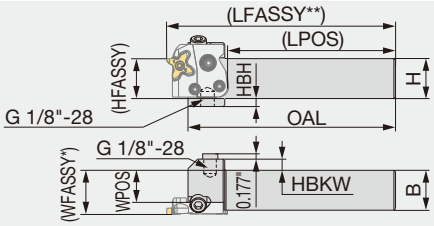
Reference pages: JS-STCL18: Inserts → F053 - F059, Standard cutting conditions → F060
STCAR/L18-CHP: Inserts → F053 - F059, Shanks and toolholders → F049 - F051
Standard cutting conditions → F060, Technical Reference → L059

CHSR/L-CHP

Tube connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	STCAR/L18-CHP	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	STCAR/L18-CHP	3.69

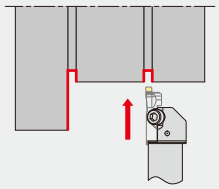
Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	STCAR/L18-CHP	6.5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	STCAR/L18-CHP	6.5

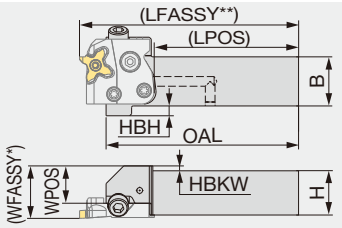
WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

CHSR/L-CHP-MC

Direct connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Metric	H	B	OAL	LPOS	WPOS	HBKW	HBH	Adapter (Option)	Torque
CHSR/L2020-CHP-MC	20	20	98	73.5	14	6	10	STCAR/L18-CHP	6.5
CHSR/L2525-CHP-MC	25	25	98	73.5	19	-	5	STCAR/L18-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS



Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179
CHSR/L**-CHP-MC	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	-

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	Adapter	
	STCAR18-CHP	STCAL18-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

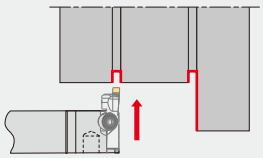
● : Corresponding

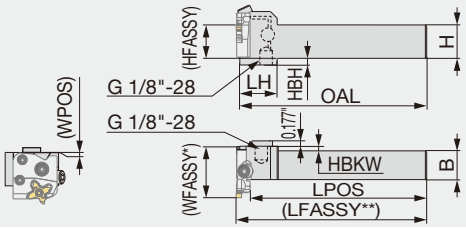
Reference pages: Inserts → F053 - F059, Adapters → F048, Standard cutting conditions → F060
Parts for coolant hose → F290, Technical Reference → L059

CHFVR/L-CHP

Tube connection

Shank for perpendicularly-mounted adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	STCAL/R18-CHP	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	STCAL/R18-CHP	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	STCAL/R18-CHP	6.5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	STCAL/R18-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS



Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	Adapter	
	STCAR18-CHP	STCAL18-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

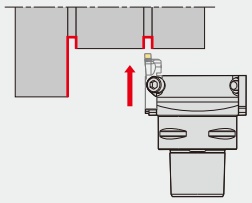
● : Corresponding

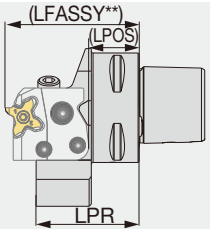
Reference pages: Inserts → F053 - F059, Adapters → F048, Standard cutting conditions → F060
Parts for coolant hose → F290, Technical Reference → L059

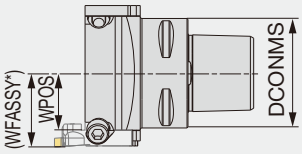
C*CHSN-CHP

Direct connection

Toolholder with TungCap connection, for adapter, with high pressure coolant capability







Right-hand (R) adapter shown.

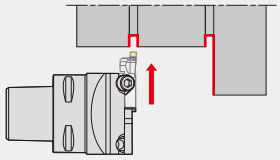
Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	STCAR/L18-CHP	6.5
C4CHSN21047-CHP	40	46.5	21.5	21	STCAR/L18-CHP	6.5
C5CHSN26047-CHP	50	47	22.5	26	STCAR/L18-CHP	6.5
C6CHSN33050-CHP	63	50	24.5	32.5	STCAR/L18-CHP	6.5

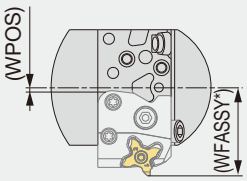
WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

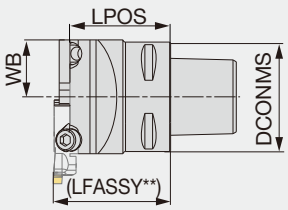
C*CHFVN-CHP

Direct connection

Toolholder with TungCap connection, for perpendicularly-mounted adapter, with high pressure coolant capability







Left-hand (L) adapter shown.

Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	STCAR/L18-CHP	6.5
C4CHFVN26046-CHP	40	46	26	1.5	STCAR/L18-CHP	6.5
C5CHFVN26046-CHP	50	46	26	1.5	STCAR/L18-CHP	6.5
C6CHFVN33046-CHP	63	46	33	8.5	STCAR/L18-CHP	6.5

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CH**N**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N

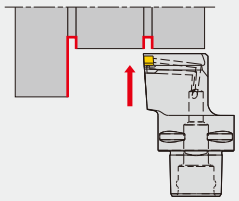
Recommended clamping torque (N·m)

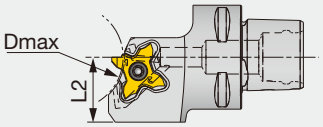
Clamping screw	Torque (N·m)
SR M5-04451	2.5
SR M6X12DIN6912	6.5
SR M6X20-XT	6.5

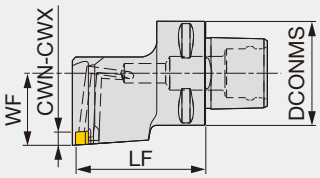
Reference pages: Inserts → F053 - F059, Adapters → F048, Standard cutting conditions → F060
Technical Reference → L059

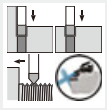
C-STCR/L-18-CHP

External grooving and threading toolholder, with high pressure coolant capability









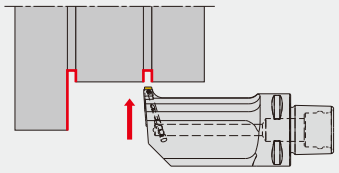
Right hand (R) shown.

Metric	CWN	CWX	DCONMS	LF	L2	WF	Dmax	Insert	Torque
C3STCR/L22040-18-CHP	0.33	3.18	32	40	20	22	32	TC*18...	1.2
C4STCR/L27050-18-CHP	0.33	3.18	40	50	25	27	75 (1)	TC*18...	1.2

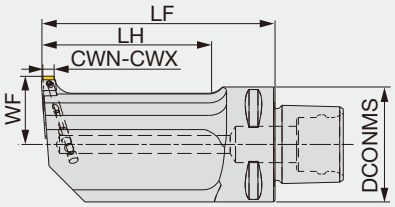
Applicable for 14 MPa coolant
Use the right hand insert (TC*18R...) with the right hand holder (STCR...). Use the left hand insert (TC*18L...) with the left hand holder (STCL...).
(1) The value for 3.5 mm groove depth. *Dmax* varies according to the grooving depth required.
Torque: Recommended clamping torque: N·m

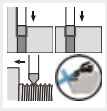
C-STCFL-18-CHP

External grooving and threading toolholder, with high pressure coolant capability









Left hand (L) shown.

Metric	CWN	CWX	DCONMS	LF	LH	L2	WF	Dmax	Insert	Torque
C3STCFL18040-18-CHP	0.33	3.18	32	40	21.5	20	18	32	TC*18R...	1.2
C3STCFL18065-18-CHP	0.33	3.18	32	65	46.5	20	18	32	TC*18R...	1.2

Applicable for 14 MPa coolant
Use the right hand insert (TC*18R...) with the left hand holder (STCFL...).
Torque: Recommended clamping torque: N·m

SPARE PARTS





Designation	Clamping screw	Wrench
C*STCL**-18-CHP	CSTC-4L100DR	T-1008/5
C*STCR**-18-CHP	CSTC-4L100DL	T-1008/5
C3STCFL**-18-CHP	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → F053 - F059, Standard cutting conditions → F060

External grooving

TCS18 (4 corners)



F054, F055

First choice for O.D. grooving

General-purpose pressed-in 3D chipbreaker for smooth chip control

CW = 0.039" - 0.118"
CDX = 0.138"



TCL18 (4 corners)



F055

For lighter cutting action

Features pressed-in 3D chipbreaker with sharp cutting edge for light cutting action. Provides excellent chip control at low feed rates.

CW = 0.059" - 0.118"
CDX = 0.138"



TCG18 (4 corners)



F056, F057

For better chipping resistance

Features an optimum rake angle and edge preparation for a good balance of light cutting action and fracture resistance.

CW = 0.039" - 0.125"
CDX = 0.138"



TCP18 (4 corners)



F058, F059

For higher surface quality

Featuring a large rake angle, providing light cutting action and better surface finish. TCP-F style insert is also available for sharp cutting edge.

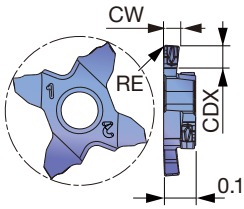
CW = 0.013" - 0.118"
CDX = 0.138"



Please see page F*** for the product details.

TCS18R/L (3D chipbreaker, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079
TCS18L100-010	L	1	0.039	0.004	●	0.079
TCS18R120-010	R	1.2	0.047	0.004	●	0.079
TCS18L120-010	L	1.2	0.047	0.004	●	0.079
TCS18R125-010	R	1.25	0.049	0.004	●	0.079
TCS18L125-010	L	1.25	0.049	0.004	●	0.079
TCS18R125-020	R	1.25	0.049	0.008	●	0.079
TCS18L125-020	L	1.25	0.049	0.008	●	0.079
TCS18R130-020	R	1.3	0.051	0.008	●	0.138
TCS18L130-020	L	1.3	0.051	0.008	●	0.138
TCS18R140-010	R	1.4	0.055	0.004	●	0.138
TCS18L140-010	L	1.4	0.055	0.004	●	0.138
TCS18R140-020	R	1.4	0.055	0.008	●	0.138
TCS18L140-020	L	1.4	0.055	0.008	●	0.138
TCS18R145-010	R	1.45	0.057	0.004	●	0.138
TCS18L145-010	L	1.45	0.057	0.004	●	0.138
TCS18R150-010	R	1.5	0.059	0.004	●	0.138
TCS18L150-010	L	1.5	0.059	0.004	●	0.138
TCS18R150-020	R	1.5	0.059	0.008	●	0.138
TCS18L150-020	L	1.5	0.059	0.008	●	0.138
TCS18R160-020	R	1.6	0.063	0.008	●	0.138
TCS18L160-020	L	1.6	0.063	0.008	●	0.138
TCS18R170-020	R	1.7	0.067	0.008	●	0.138
TCS18L170-020	L	1.7	0.067	0.008	●	0.138
TCS18R175-010	R	1.75	0.069	0.004	●	0.138
TCS18L175-010	L	1.75	0.069	0.004	●	0.138
TCS18R175-020	R	1.75	0.069	0.008	●	0.138
TCS18L175-020	L	1.75	0.069	0.008	●	0.138
TCS18R185-020	R	1.85	0.073	0.008	●	0.138
TCS18L185-020	L	1.85	0.073	0.008	●	0.138
TCS18R195-020	R	1.95	0.077	0.008	●	0.138
TCS18L195-020	L	1.95	0.077	0.008	●	0.138
TCS18R200-010	R	2	0.079	0.004	●	0.138
TCS18L200-010	L	2	0.079	0.004	●	0.138
TCS18R200-020	R	2	0.079	0.008	●	0.138
TCS18L200-020	L	2	0.079	0.008	●	0.138
TCS18R225-020	R	2.25	0.089	0.008	●	0.138
TCS18L225-020	L	2.25	0.089	0.008	●	0.138
TCS18R230-020	R	2.3	0.091	0.008	●	0.138
TCS18L230-020	L	2.3	0.091	0.008	●	0.138
TCS18R250-010	R	2.5	0.098	0.004	●	0.138
TCS18L250-010	L	2.5	0.098	0.004	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

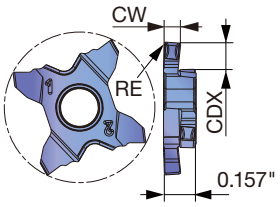
★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCS18R250-020	R	2.5	0.098	0.008	●	0.138
TCS18L250-020	L	2.5	0.098	0.008	●	0.138
TCS18R250-030	R	2.5	0.098	0.012	●	0.138
TCS18L250-030	L	2.5	0.098	0.012	●	0.138
TCS18R265-030	R	2.65	0.104	0.012	●	0.138
TCS18L265-030	L	2.65	0.104	0.012	●	0.138
TCS18R280-030	R	2.8	0.110	0.012	●	0.138
TCS18L280-030	L	2.8	0.110	0.012	●	0.138
TCS18R300-010	R	3	0.118	0.004	●	0.138
TCS18L300-010	L	3	0.118	0.004	●	0.138
TCS18R300-020	R	3	0.118	0.008	●	0.138
TCS18L300-020	L	3	0.118	0.008	●	0.138
TCS18R300-030	R	3	0.118	0.012	●	0.138
TCS18L300-030	L	3	0.118	0.012	●	0.138

5 pieces per package
● : Line up

TCL18R/L (3D chipbreaker, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

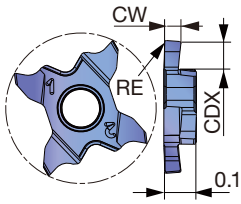
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCL18R150-010	R	1.5	0.059	0.004	●	0.138
TCL18L150-010	L	1.5	0.059	0.004	●	0.138
TCL18R150-020	R	1.5	0.059	0.008	●	0.138
TCL18L150-020	L	1.5	0.059	0.008	●	0.138
TCL18R175-020	R	1.75	0.069	0.008	●	0.138
TCL18L175-020	L	1.75	0.069	0.008	●	0.138
TCL18R200-010	R	2	0.079	0.004	●	0.138
TCL18L200-010	L	2	0.079	0.004	●	0.138
TCL18R200-020	R	2	0.079	0.008	●	0.138
TCL18L200-020	L	2	0.079	0.008	●	0.138
TCL18R250-030	R	2.5	0.098	0.012	●	0.138
TCL18L250-030	L	2.5	0.098	0.012	●	0.138
TCL18R300-010	R	3	0.118	0.004	●	0.138
TCL18L300-010	L	3	0.118	0.004	●	0.138
TCL18R300-020	R	3	0.118	0.008	●	0.138
TCL18L300-020	L	3	0.118	0.008	●	0.138
TCL18R300-030	R	3	0.118	0.012	●	0.138
TCL18L300-030	L	3	0.118	0.012	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

TCG18R/L (honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)
					AH7025	
TCG18R100-010	R	1	0.039	0.004	●	0.079
TCG18L100-010	L	1	0.039	0.004	●	0.079
TCG18R120-010	R	1.2	0.047	0.004	●	0.079
TCG18L120-010	L	1.2	0.047	0.004	●	0.079
TCG18R125-010	R	1.25	0.049	0.004	●	0.079
TCG18L125-010	L	1.25	0.049	0.004	●	0.079
TCG18R125-020	R	1.25	0.049	0.008	●	0.079
TCG18L125-020	L	1.25	0.049	0.008	●	0.079
TCG18R130-020	R	1.3	0.051	0.008	●	0.079
TCG18L130-020	L	1.3	0.051	0.008	●	0.079
TCG18R140-010	R	1.4	0.055	0.004	●	0.138
TCG18L140-010	L	1.4	0.055	0.004	●	0.138
TCG18R140-020	R	1.4	0.055	0.008	●	0.138
TCG18L140-020	L	1.4	0.055	0.008	●	0.138
TCG18R145-010	R	1.45	0.057	0.004	●	0.138
TCG18L145-010	L	1.45	0.057	0.004	●	0.138
TCG18R145-020	R	1.45	0.057	0.008	●	0.138
TCG18L145-020	L	1.45	0.057	0.008	●	0.138
TCG18R150-010	R	1.5	0.059	0.004	●	0.138
TCG18L150-010	L	1.5	0.059	0.004	●	0.138
TCG18R150-020	R	1.5	0.059	0.008	●	0.138
TCG18L150-020	L	1.5	0.059	0.008	●	0.138
TCG18R160-020	R	1.6	0.063	0.008	●	0.138
TCG18L160-020	L	1.6	0.063	0.008	●	0.138
TCG18R170-020	R	1.7	0.067	0.008	●	0.138
TCG18L170-020	L	1.7	0.067	0.008	●	0.138
TCG18R175-010	R	1.75	0.069	0.004	●	0.138
TCG18L175-010	L	1.75	0.069	0.004	●	0.138
TCG18R175-020	R	1.75	0.069	0.008	●	0.138
TCG18L175-020	L	1.75	0.069	0.008	●	0.138
TCG18R185-020	R	1.85	0.073	0.008	●	0.138
TCG18L185-020	L	1.85	0.073	0.008	●	0.138
TCG18R195-020	R	1.95	0.077	0.008	●	0.138
TCG18L195-020	L	1.95	0.077	0.008	●	0.138
TCG18R200-010	R	2	0.079	0.004	●	0.138
TCG18L200-010	L	2	0.079	0.004	●	0.138
TCG18R200-020	R	2	0.079	0.008	●	0.138
TCG18L200-020	L	2	0.079	0.008	●	0.138
TCG18R225-020	R	2.25	0.089	0.008	●	0.138
TCG18L225-020	L	2.25	0.089	0.008	●	0.138
TCG18R230-020	R	2.3	0.091	0.008	●	0.138
TCG18L230-020	L	2.3	0.091	0.008	●	0.138
TCG18R250-010	R	2.5	0.098	0.004	●	0.138
TCG18L250-010	L	2.5	0.098	0.004	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

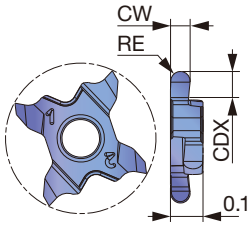
★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCG18R250-020	R	2.5	0.098	0.008	●	0.138
TCG18L250-020	L	2.5	0.098	0.008	●	0.138
TCG18R250-030	R	2.5	0.098	0.012	●	0.138
TCG18L250-030	L	2.5	0.098	0.012	●	0.138
TCG18R265-030	R	2.65	0.104	0.012	●	0.138
TCG18L265-030	L	2.65	0.104	0.012	●	0.138
TCG18R280-030	R	2.8	0.110	0.012	●	0.138
TCG18L280-030	L	2.8	0.110	0.012	●	0.138
TCG18R300-010	R	3	0.118	0.004	●	0.138
TCG18L300-010	L	3	0.118	0.004	●	0.138
TCG18R300-020	R	3	0.118	0.008	●	0.138
TCG18L300-020	L	3	0.118	0.008	●	0.138
TCG18R300-030	R	3	0.118	0.012	●	0.138
TCG18L300-030	L	3	0.118	0.012	●	0.138

5 pieces per package
● : Line up

TCG18R/L (Full R, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

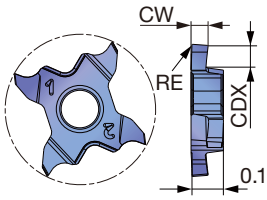
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCG18R100-050	R	1	0.039	0.020	●	0.079
TCG18L100-050	L	1	0.039	0.020	●	0.079
TCG18R158-079	R	1.58	0.062	0.031	●	0.138
TCG18L158-079	L	1.58	0.062	0.031	●	0.138
TCG18R200-100	R	2	0.079	0.039	●	0.138
TCG18L200-100	L	2	0.079	0.039	●	0.138
TCG18R239-120	R	2.39	0.094	0.047	●	0.138
TCG18L239-120	L	2.39	0.094	0.047	●	0.138
TCG18R300-150	R	3	0.118	0.059	●	0.138
TCG18L300-150	L	3	0.118	0.059	●	0.138
TCG18R318-159	R	3.18	0.125	0.063	●	0.138
TCG18L318-159	L	3.18	0.125	0.063	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

TCP18R/L (lightly honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

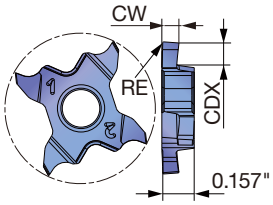
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)
					AH725	
TCP18R033-005	R	0.33	0.013	0.002	●	0.031
TCP18L033-005	L	0.33	0.013	0.002	●	0.031
TCP18R043-005	R	0.43	0.017	0.002	●	0.047
TCP18L043-005	L	0.43	0.017	0.002	●	0.047
TCP18R050-005	R	0.5	0.020	0.002	●	0.047
TCP18L050-005	L	0.5	0.020	0.002	●	0.047
TCP18R075-005	R	0.75	0.030	0.002	●	0.079
TCP18L075-005	L	0.75	0.030	0.002	●	0.079
TCP18R095-005	R	0.95	0.037	0.002	●	0.079
TCP18L095-005	L	0.95	0.037	0.002	●	0.079
TCP18R100-010	R	1	0.039	0.004	●	0.079
TCP18L100-010	L	1	0.039	0.004	●	0.079
TCP18R120-010	R	1.2	0.047	0.004	●	0.079
TCP18L120-010	L	1.2	0.047	0.004	●	0.079
TCP18R125-010	R	1.25	0.049	0.004	●	0.079
TCP18L125-010	L	1.25	0.049	0.004	●	0.079
TCP18R140-010-35	R	1.4	0.055	0.004	●	0.138
TCP18L140-010-35	L	1.4	0.055	0.004	●	0.138
TCP18R145-010	R	1.45	0.057	0.004	●	0.079
TCP18L145-010	L	1.45	0.057	0.004	●	0.079
TCP18R145-010-35	R	1.45	0.057	0.004	●	0.138
TCP18L145-010-35	L	1.45	0.057	0.004	●	0.138
TCP18R150-010	R	1.5	0.059	0.004	●	0.079
TCP18L150-010	L	1.5	0.059	0.004	●	0.079
TCP18R150-010-35	R	1.5	0.059	0.004	●	0.138
TCP18L150-010-35	L	1.5	0.059	0.004	●	0.138
TCP18R175-010	R	1.75	0.069	0.004	●	0.079
TCP18L175-010	L	1.75	0.069	0.004	●	0.079
TCP18R175-010-35	R	1.75	0.069	0.004	●	0.138
TCP18L175-010-35	L	1.75	0.069	0.004	●	0.138
TCP18R200-010	R	2	0.079	0.004	●	0.098
TCP18L200-010	L	2	0.079	0.004	●	0.098
TCP18R200-010-35	R	2	0.079	0.004	●	0.138
TCP18L200-010-35	L	2	0.079	0.004	●	0.138
TCP18R250-010	R	2.5	0.098	0.004	●	0.098
TCP18L250-010	L	2.5	0.098	0.004	●	0.098
TCP18R250-010-35	R	2.5	0.098	0.004	●	0.138
TCP18L250-010-35	L	2.5	0.098	0.004	●	0.138
TCP18R300-010	R	3	0.118	0.004	●	0.098
TCP18L300-010	L	3	0.118	0.004	●	0.098
TCP18R300-010-35	R	3	0.118	0.004	●	0.138
TCP18L300-010-35	L	3	0.118	0.004	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

TCP18R/L-F (sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX (in)
TCP18R033F-005	R	0.33	0.013	0.002	●	0.031
TCP18L033F-005	L	0.33	0.013	0.002	●	0.031
TCP18R043F-005	R	0.43	0.017	0.002	●	0.047
TCP18L043F-005	L	0.43	0.017	0.002	●	0.047
TCP18R050F-005	R	0.5	0.020	0.002	●	0.047
TCP18L050F-005	L	0.5	0.020	0.002	●	0.047
TCP18R075F-005	R	0.75	0.030	0.002	●	0.079
TCP18L075F-005	L	0.75	0.030	0.002	●	0.079
TCP18R095F-005	R	0.95	0.037	0.002	●	0.079
TCP18L095F-005	L	0.95	0.037	0.002	●	0.079
TCP18R100F-005	R	1	0.039	0.002	●	0.079
TCP18R100F-010	R	1	0.039	0.004	●	0.079
TCP18L100F-010	L	1	0.039	0.004	●	0.079
TCP18R120F-005	R	1.2	0.047	0.002	●	0.079
TCP18R120F-010	R	1.2	0.047	0.004	●	0.079
TCP18L120F-010	L	1.2	0.047	0.004	●	0.079
TCP18R125F-005	R	1.25	0.049	0.002	●	0.079
TCP18R125F-010	R	1.25	0.049	0.004	●	0.079
TCP18L125F-010	L	1.25	0.049	0.004	●	0.079
TCP18R140F-010-35	R	1.4	0.055	0.004	●	0.138
TCP18R145F-005-35	R	1.45	0.057	0.002	●	0.138
TCP18R145F-010	R	1.45	0.057	0.004	●	0.079
TCP18L145F-010	L	1.45	0.057	0.004	●	0.079
TCP18R145F-010-35	R	1.45	0.057	0.004	●	0.138
TCP18L145F-010-35	L	1.45	0.057	0.004	●	0.138
TCP18R150F-005-35	R	1.5	0.059	0.002	●	0.138
TCP18R150F-010	R	1.5	0.059	0.004	●	0.079
TCP18L150F-010	L	1.5	0.059	0.004	●	0.079
TCP18R150F-010-35	R	1.5	0.059	0.004	●	0.138
TCP18L150F-010-35	L	1.5	0.059	0.004	●	0.138
TCP18R175F-005-35	R	1.75	0.069	0.002	●	0.138
TCP18R175F-010	R	1.75	0.069	0.004	●	0.079
TCP18L175F-010	L	1.75	0.069	0.004	●	0.079
TCP18R175F-010-35	R	1.75	0.069	0.004	●	0.138
TCP18L175F-010-35	L	1.75	0.069	0.004	●	0.138
TCP18R200F-005-35	R	2	0.079	0.002	●	0.138
TCP18R200F-010	R	2	0.079	0.004	●	0.098
TCP18L200F-010	L	2	0.079	0.004	●	0.098
TCP18R200F-010-35	R	2	0.079	0.004	●	0.138
TCP18L200F-010-35	L	2	0.079	0.004	●	0.138
TCP18R250F-010	R	2.5	0.098	0.004	●	0.098
TCP18L250F-010	L	2.5	0.098	0.004	●	0.098
TCP18R250F-010-35	R	2.5	0.098	0.004	●	0.138
TCP18L250F-010-35	L	2.5	0.098	0.004	●	0.138
TCP18R300F-010	R	3	0.118	0.004	●	0.098
TCP18L300F-010	L	3	0.118	0.004	●	0.098
TCP18R300F-010-35	R	3	0.118	0.004	●	0.138
TCP18L300F-010-35	L	3	0.118	0.004	●	0.138

5 pieces per package
● : Line up

Reference pages: Toolholders → F046 - F052, Standard cutting conditions → F060

STANDARD CUTTING CONDITIONS

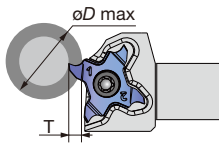
TCS18R/L, TCL18R/L (3D chipbreaker), TCG18R/L (honed edge), TCG18R/L (Full R)

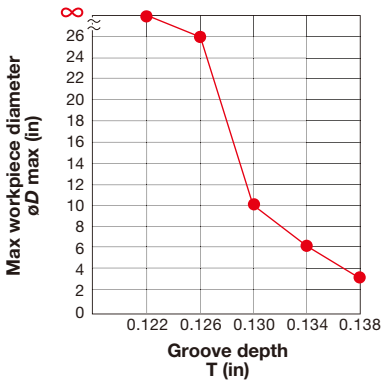
ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				TCL18	TCS18	TCG18
P	Low carbon steel 1015, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Carbon steel, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
M	Stainless steel 304, 316, etc.	AH7025	164 - 394	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Gray cast iron No.250B, No.300B, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Ductile cast iron 60-40-18, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 197	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 131	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006

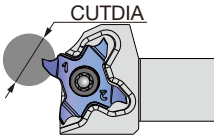
TCP18R/L (lightly honed edge), TCP18R/L-F (sharp edge)

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Low carbon steel 1015, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, 4140, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, 4140, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
M	Stainless steel 304, 316, etc.	First choice	SH725	164 - 394	0.001 - 0.004
M	Stainless steel 304, 316, etc.	Toughness	AH725	164 - 394	0.001 - 0.004
K	Gray cast iron No.250B, No.300B, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K	Gray cast iron No.250B, No.300B, etc.	Sharpness	SH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, etc.	Sharpness	SH725	164 - 591	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	Toughness	AH725	98 - 262	0.001 - 0.004
S	Superalloys Inconel718, etc.	First choice	AH725	66 - 131	0.001 - 0.004

Precautions of processing







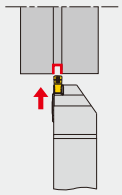
Max workpiece diameter CUTDIA (in)
0.276

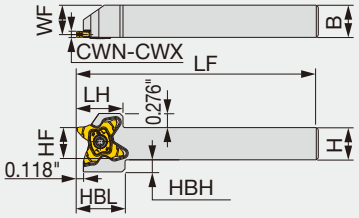
***Groove depth and max workpiece diameter (øDmax)**

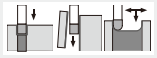
Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.

STCR/L-27

External toolholders for grooving, parting







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L06-27	0.020	0.125	0.375	0.375	5.000	0.906	0.945	0.375	0.315	0.374	TC*27...	1.84
STCR/L08-27	0.020	0.125	0.500	0.500	5.000	0.906	0.945	0.500	0.440	0.287	TC*27...	1.84
STCR/L10-27	0.020	0.125	0.625	0.625	5.000	0.906	0.945	0.625	0.570	0.236	TC*27...	1.84
STCR/L12-27	0.020	0.125	0.750	0.750	5.000	0.906	0.945	0.750	0.690	0.118	TC*27...	1.84
STCR/L16-27	0.020	0.125	1.000	1.000	5.500	0.906	-	1.000	0.940	-	TC*27...	1.84

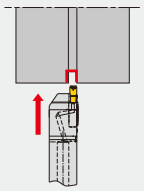
Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque*
STCR/L1010-27	0.5	3.18	10	10	120	23	24	10	8.5	9.5	TC*27...	2.5
STCR/L1212-27	0.5	3.18	12	12	120	23	24	12	10.5	8	TC*27...	2.5
STCR/L1616-27	0.5	3.18	16	16	120	23	24	16	14.5	6	TC*27...	2.5
STCR/L2020-27	0.5	3.18	20	20	120	23	24	20	18.5	2	TC*27...	2.5
STCR/L2525-27	0.5	3.18	25	25	135	23	-	25	23.5	-	TC*27...	2.5

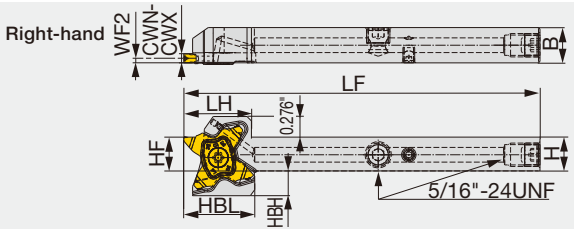
Torque: Recommended clamping torque: lbs·ft (*N·m)

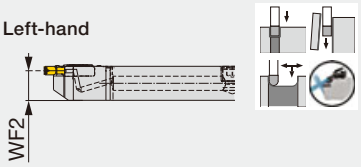
STCR/L-27-CHP

Direct connection

Grooving and parting-off toolholder. High pressure coolant capability.







Inch	CWN	CWX	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Insert	Torque
STCR/L08-27-CHP	0.020	0.125	0.500	0.500	4.750	0.906	0.500	0.059/0.441	0.287	0.945	TC*27...	1.84

Metric	CWN	CWX	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Insert	Torque*
STCR/L1212-27-CHP	0.5	3.18	12	12	120	23	12	1.5/10.5	8	24	TC*27...	2.5

- Make sure to avoid tool interferences when used on Swiss machines
(1) The above WF2 value is valid when an insert width of CW = 0.118" (3 mm) is mounted.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

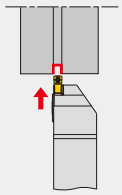
Designation	Screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR**-27	SR16-212-01397L	T-2010/5	-	-	-	-
STCL**-27	SR16-212-01397	T-2010/5	-	-	-	-
STCR**-27-CHP	SR16-212-01397L	T-2010/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCL**-27-CHP	SR16-212-01397	T-2010/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

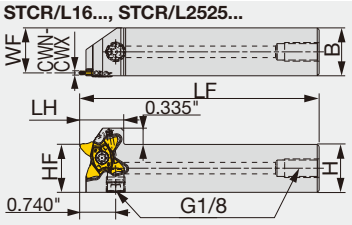
Reference pages: Inserts → F067 - F071, Standard cutting conditions → F072
Parts for coolant hose → F290

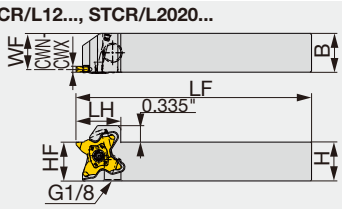
STCR/L-27-CHP

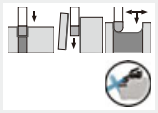
Tube connection

External grooving and parting toolholder, with high pressure coolant capability









Right-hand (R) shown.

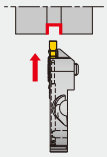
Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
STCR/L12-27-CHP	0.020	0.125	0.750	0.750	5.000	0.906	0.750	0.690	TC*27...	1.84
STCR/L16-27-CHP	0.020	0.125	1.000	1.000	4.920	0.906	1.000	0.940	TC*27...	1.84

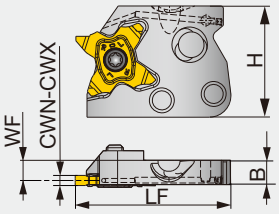
Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
STCR/L2020-27-CHP	0.5	3.18	20	20	120	23	20	18.5	TC*27...	2.5
STCR/L2525-27-CHP	0.5	3.18	25	25	125	23	25	23.5	TC*27...	2.5

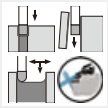
Torque: Recommended clamping torque: lbs·ft (*N·m)

STCAR/L27-CHP

External grooving and parting adapter, with high pressure coolant capability







Right-hand (R) shown.

Metric	CWN	CWX	WF	H	LF	B	Insert	Torque
STCAR/L27-CHP	0.5	3.18	6	33	46	7.2	TC*27...	2.5

Torque: Recommended clamping torque: N·m

SPARE PARTS





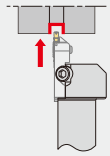
Designation	Screw	Wrench
STCR**-27-CHP	SR16-212-01397L	T-2010/5
STCL**-27-CHP	SR16-212-01397	T-2010/5
STCAR27-CHP	SR16-212-01397L	T-2010/5
STCAL27-CHP	SR16-212-01397	T-2010/5

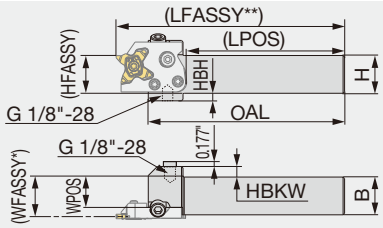
Reference pages: STCR/L-27-CHP: Inserts → F067 - F071, Standard cutting conditions → F072
Parts for coolant hose → F290
STCAR/L27-CHP: Inserts → F067 - F071, Shanks and toolholders → F063 - F065
Standard cutting conditions → F072, Technical Reference → L059

CHSR/L-CHP

Tube connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	STCAR/L27-CHP	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	STCAR/L27-CHP	3.69

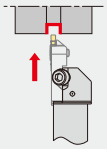
Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	STCAR/L27-CHP	6.5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	STCAR/L27-CHP	6.5

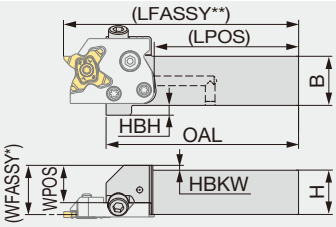
WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page **L059** for instructions on installing and removing the adapter or the insert.

CHSR/L-CHP-MC

Direct connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Metric	H	B	OAL	LPOS	WPOS	HBKW	HBH	Adapter (Option)	Torque
CHSR/L2020-CHP-MC	20	20	98	73.5	14	6	10	STCAR/L27-CHP	6.5
CHSR/L2525-CHP-MC	25	25	98	73.5	19	-	5	STCAR/L27-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page **L059** for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179
CHSR/L**-CHP-MC	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	-

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

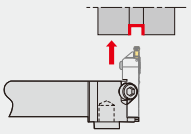
Combination of adapter and shank

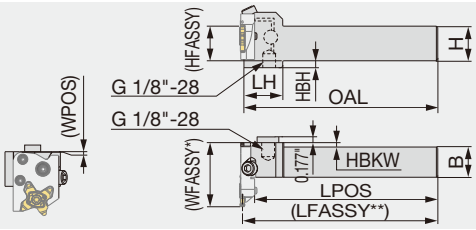
Shank	Adapter	
	STCAR27-CHP	STCAL27-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

● : Corresponding

Reference pages: Inserts → F067 - F071, Adapters → F062, Standard cutting conditions → F072
Parts for coolant hose → F290, Technical Reference → L059

Shank for perpendicularly-mounted adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	STCAL/R27-CHP	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	STCAL/R27-CHP	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	STCAL/R27-CHP	6.5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	STCAL/R27-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	Adapter	
	STCAR27-CHP	STCAL27-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

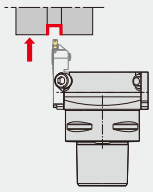
● : Corresponding

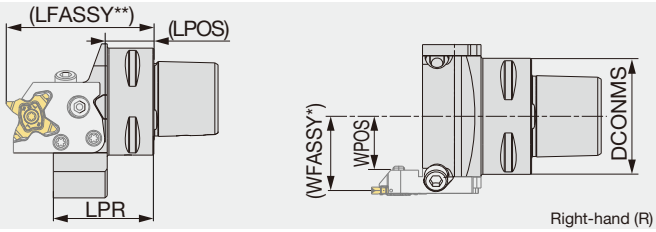
Reference pages: Inserts → F067 - F071, Adapters → F062, Standard cutting conditions → F072
Parts for coolant hose → F290, Technical Reference → L059

C*CHSN-CHP

Direct connection

Toolholder with TungCap connection, for adapter, with high pressure coolant capability





Right-hand (R) adapter shown.

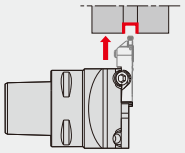
Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	STCAR/L27-CHP	6.5
C4CHSN21047-CHP	40	46.5	21.5	21	STCAR/L27-CHP	6.5
C5CHSN26047-CHP	50	47	22.5	26	STCAR/L27-CHP	6.5
C6CHSN33050-CHP	63	50	24.5	32.5	STCAR/L27-CHP	6.5

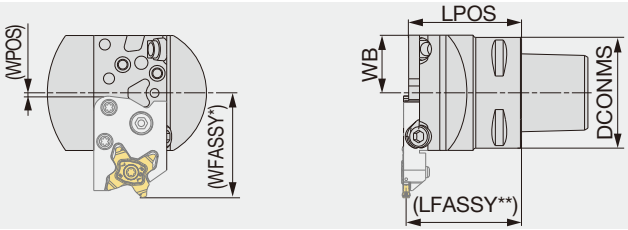
WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

C*CHFVN-CHP

Direct connection

Toolholder with TungCap connection, for perpendicularly-mounted adapter, with high pressure coolant capability





Left-hand (L) adapter shown.

Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	STCAR/L27-CHP	6.5
C4CHFVN26046-CHP	40	46	26	1.5	STCAR/L27-CHP	6.5
C5CHFVN26046-CHP	50	46	26	1.5	STCAR/L27-CHP	6.5
C6CHFVN33046-CHP	63	46	33	8.5	STCAR/L27-CHP	6.5

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS








Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CH**N**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N

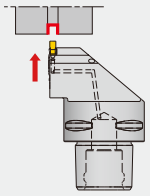
Recommended clamping torque (N·m)

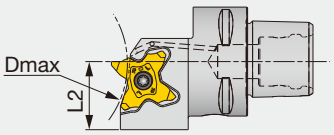
Clamping screw	Torque (N·m)
SR M5-04451	2.5
SR M6X12DIN6912	6.5
SR M6X20-XT	6.5

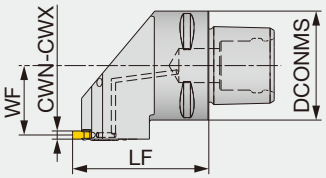
Reference pages: Inserts → F067 - F071, Adapters → F062, Standard cutting conditions → F072
Technical Reference → L059

C-STCR/L-27-CHP

External grooving toolholder, with high pressure coolant capability







Right hand (R) shown.

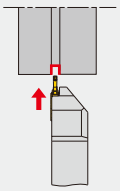
Metric	CWN	CWX	DCONMS	LF	L2	WF	Dmax	Insert	Torque
C4STCR/L27050-27-CHP	0.5	3.18	40	50	25	25.5	68 (1)	TC*27R/L...	2.5

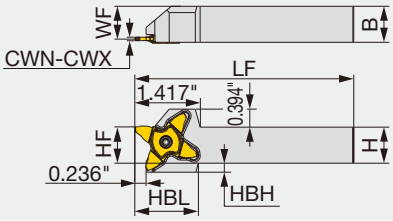
Applicable for 14 MPa coolant
(1) The value for 6.4 mm groove depth. *Dmax* varies according to the grooving depth required.
Torque: Recommended clamping torque: N·m

External
Internal
Face
Parting
Others

STCR/L-38

External grooving and parting toolholder





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque
STCR/L12-38	0.059	0.157	0.750	0.750	5.000	0.750	0.670	0.234	1.378	TCL38...	1.84
STCR/L16-38	0.059	0.157	1.000	1.000	5.500	1.000	0.920	-	-	TCL38...	1.84
STCR/L20-38	0.059	0.157	1.250	1.250	5.500	1.250	1.170	-	-	TCL38...	1.84

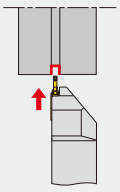
Metric	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L2020-38	1.5	4	20	20	120	20	18.1	5	35	TCL38...	2.5
STCR/L2525-38	1.5	4	25	25	135	25	23.1	-	-	TCL38...	2.5
STCR/L3232-38	1.5	4	32	32	135	32	30.1	-	-	TCL38...	2.5

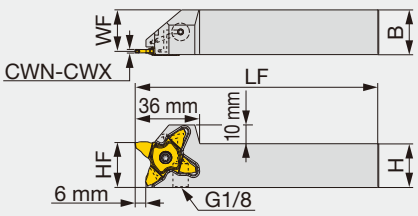
Torque: Recommended clamping torque: lbs·ft (*N·m)

STCR/L-38-CHP

Tube connection

External grooving and parting toolholder, with high pressure coolant capability





Right hand (R) shown.

Metric	CWN	CWX	H	B	LF	HF	WF	Insert	Torque
STCR/L2525-38-CHP	1.5	4	25	25	135	25	23.1	TCL38...	2.5

Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Screw	Wrench
C4STCR27050-27-CHP	SR16-212-01397L	T-2010/5
C4STCL27050-27-CHP	SR16-212-01397	T-2010/5
STCR...	SR16-212-01397L	T-2010/5
STCL...	SR16-212-01397	T-2010/5

Reference pages: Inserts → F067 - F071, Standard cutting conditions → F072
Parts for coolant hose → F290

External grooving and parting

TCS27 (4 corners)



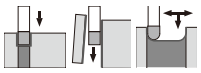
F068, F069

First choice for grooving

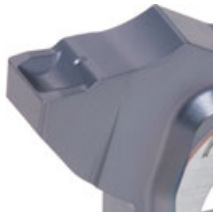
For general machining

Lower cutting force and superior sharpness

CW = 0.020" - 0.125"
CDX = 0.252"



TCM27 (4 corners)



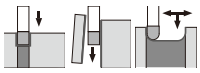
F070, F071

For higher efficiency

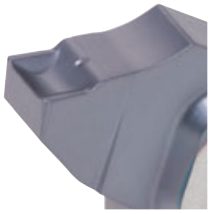
For high feed machining

Well-designed edge with high strength and fracture resistance

CW = 0.059" - 0.125"
CDX = 0.252"



TCL27 (4 corners)

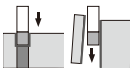


F067

For lighter cutting action

Extremely sharp cutting edge
A large dimple geometry eliminates chip jamming

CW = 0.059" - 0.118"
CDX = 0.252"



TCL38 (4 corners)

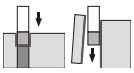


F071

For lighter cutting action

Sharp edge for light cutting action
Excellent chip control at low feeds

CW = 0.059" - 0.157"
CDX = 0.394"

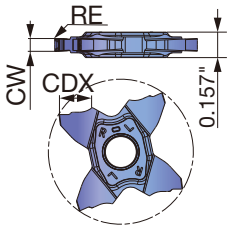


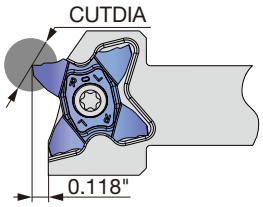
Please see page F*** for the product details.

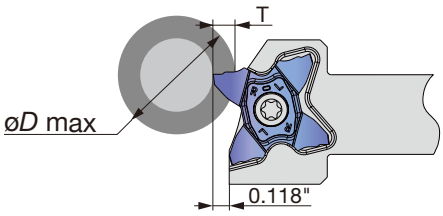
INSERTS

TCL27 (for grooving and parting off)









P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

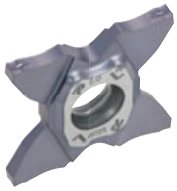
★ : First choice

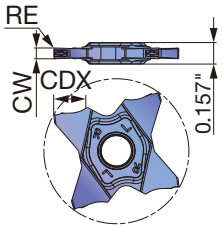
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
							T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCL27-150-015	1.5	0.059	0.006	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCL27-200-020	2	0.079	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCL27-250-020	2.5	0.098	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCL27-300-020	3	0.118	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

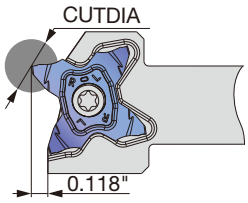
5 pieces per package
● : Line up

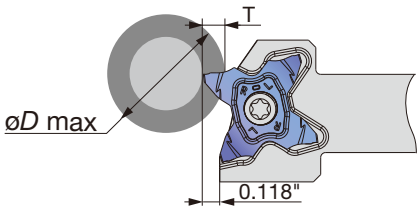
Reference pages: Toolholders → F061 - F066, Standard cutting conditions → F072

TCS27 (for grooving and parting off)









P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice

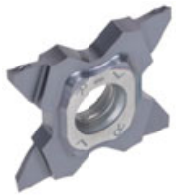
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725			CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
									T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-050-000	0.5	0.020	0	●			0.039	0.079	∞	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.020	0.002	●			0.098	0.197	∞	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.030	0.004	●			0.098	0.197	∞	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0.031	0	●			0.063	0.126	∞	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.039	0.002	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.039	0.004	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0.041	0	●			0.079	0.157	∞	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0.047	0	●			0.079	0.157	∞	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.049	0.004	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.049	0.008	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0.055	0	●			0.079	0.157	∞	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0.058	0	●			0.098	0.197	∞	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.059	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-150-020	1.5	0.059	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-157-015	1.57	0.062	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.067	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.069	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.069	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.070	0.007	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.073	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.077	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.079	0.004	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-200-020	2	0.079	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-222-015	2.22	0.087	0.006	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.091	0.008	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.094	0.006	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-247-020	2.47	0.097	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-010	2.5	0.098	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-030	2.5	0.098	0.012	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-270-010	2.7	0.106	0.004	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-287-020	2.87	0.113	0.008	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-300-000	3	0.118	0	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-020	3	0.118	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-030	3	0.118	0.012	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-040	3	0.118	0.016	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-315-015	3.15	0.124	0.006	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCS27-318-020	3.18	0.125	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

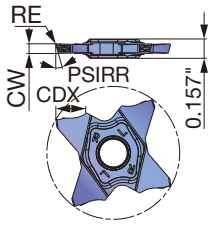
5 pieces per package

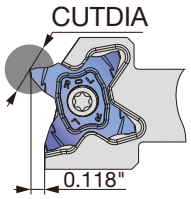
● : Line up

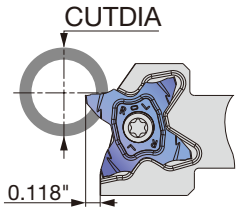
Reference pages: Toolholders → F061 - F066, Standard cutting conditions → F072

TCS27-R/L (for parting off)









Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

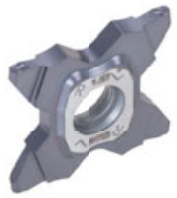
★ : First choice

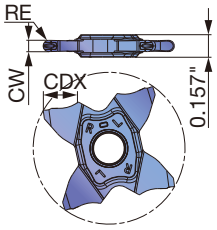
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PSIRL	PSIRR	Max. parting off dia. (CUTDIA) (in) Solid bar	Tube
TCS27-100-15R	R	1	0.039	0.002	●	0.138	0°	15°	0.276	23.622
TCS27-100-15L	L	1	0.039	0.002	●	0.138	15°	0°	0.276	23.622
TCS27-150-6R	R	1.5	0.059	0.002	●	0.224	0°	6°	0.449	1.378
TCS27-150-6L	L	1.5	0.059	0.002	●	0.224	6°	0°	0.449	1.378
TCS27-150-15R	R	1.5	0.059	0.002	●	0.224	0°	15°	0.449	1.378
TCS27-150-15L	L	1.5	0.059	0.002	●	0.224	15°	0°	0.449	1.378
TCS27-200-6R	R	2	0.079	0.004	●	0.252	0°	6°	0.504	1.181
TCS27-200-6L	L	2	0.079	0.004	●	0.252	6°	0°	0.504	1.181
TCS27-200-15R	R	2	0.079	0.004	●	0.252	0°	15°	0.504	1.181
TCS27-200-15L	L	2	0.079	0.004	●	0.252	15°	0°	0.504	1.181

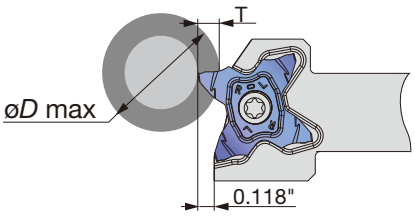
5 pieces per package

● : Line up

TCS27 (for grooving and profiling, full R)







P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	Relation of groove depth (T) and Max. diameter (øD max) (in) T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-157-079	1.57	0.062	0.031	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	0.079	0.039	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	0.094	0.047	●	0.224	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-300-150	3	0.118	0.059	●	0.252	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

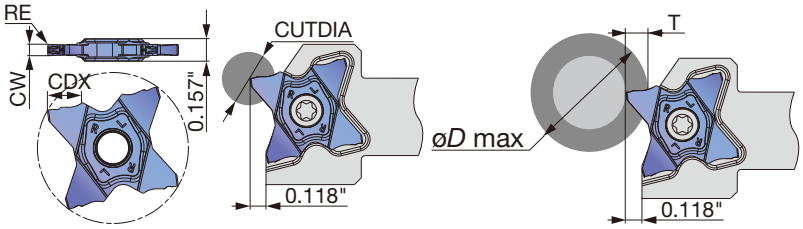
5 pieces per package

● : Line up

Reference pages: Toolholders → F061 - F066, Standard cutting conditions → F072

TCM27 (for grooving and parting off)





P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated			CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
				AH725					T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-150-010	1.5	0.059	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-150-020	1.5	0.059	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-157-015	1.57	0.062	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.067	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.069	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.069	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.070	0.007	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.073	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.077	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.079	0.004	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-200-020	2	0.079	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-222-015	2.22	0.087	0.006	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.091	0.008	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.094	0.006	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-247-020	2.47	0.097	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-010	2.5	0.098	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-030	2.5	0.098	0.012	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-270-010	2.7	0.106	0.004	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-287-020	2.87	0.113	0.008	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-300-000	3	0.118	0	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-020	3	0.118	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-030	3	0.118	0.012	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-040	3	0.118	0.016	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-315-015	3.15	0.124	0.006	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCM27-318-020	3.18	0.125	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

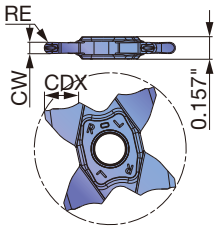
5 pieces per package

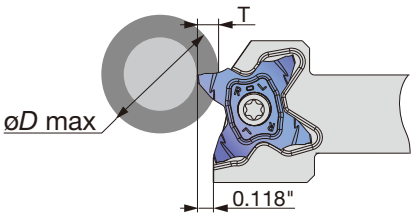
● : Line up

Reference pages: Toolholders → F061 - F066, Standard cutting conditions → F072

TCM27 (for grooving and profiling, full R)







P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice

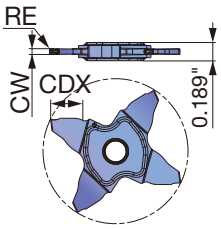
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725		CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
								T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-157-079	1.57	0.062	0.031	●		0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	0.079	0.039	●		0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	0.094	0.047	●		0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-300-150	3	0.118	0.059	●		0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

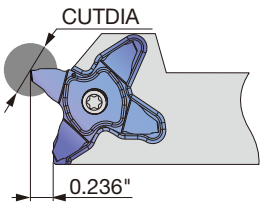
5 pieces per package

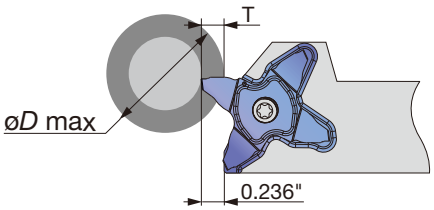
● : Line up

TCL38 (for grooving and parting off)









P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025		CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)					
								T ≤ 0.197	T ≤ 0.236	T ≤ 0.276	T ≤ 0.315	T ≤ 0.354	T ≤ 0.394
TCL38-150-020	1.5	0.059	0.008	●		0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-200-020	2	0.079	0.008	●		0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-300-020	3	0.118	0.008	●		0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969
TCL38-400-030	4	0.157	0.012	●		0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969

5 pieces per package

● : Line up

Reference pages: Toolholders → F061 - F066, Standard cutting conditions → F072

STANDARD CUTTING CONDITIONS

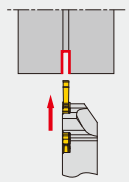
TCL27, TCS27, TCM27

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)						Depth of cut for profiling (with full radius insert)
				Grooving, Parting-off			Parting-off (with hand)	Profiling (with full radius insert)		
				TCL27	TCS27	TCM27	TCS27	TCS27	TCM27	
P	Carbon steel 1045 etc.	AH725	328 - 656	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Alloy steel 4140, etc.	AH725	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
M	Stainless steel 304, etc.	AH725	328 - 492	0.001 - 0.005	0.002 - 0.006	0.002 - 0.008	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
K	Gray cast iron No.250B, etc.	AH725	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Ductile cast iron 60-40-18, etc.	AH725	164 - 394	0.001 - 0.005	0.002 - 0.006	0.002 - 0.008	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
S	Titanium alloys Ti-6Al-4V, etc.	AH725	98 - 197	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006	0.002 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020
	Superalloys Inconel718, etc.	AH725	66 - 164	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006	0.002 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020

TCL38

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)
				Grooving, Parting-off
				TCL38
P	Carbon steel 1045 etc.	AH7025	262 - 591	0.001 - 0.007
	Alloy steel 4140, etc.	AH7025	164 - 591	0.001 - 0.007
M	Stainless steel 304, etc.	AH7025	164 - 492	0.001 - 0.006
K	Gray cast iron No.250B, etc.	AH7025	164 - 591	0.001 - 0.006
	Ductile cast iron 60-40-18, etc.	AH7025	164 - 394	0.001 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 197	0.001 - 0.006
	Superalloys Inconel718, etc.	AH7025	66 - 164	0.001 - 0.006

Parting-off and grooving toolholders



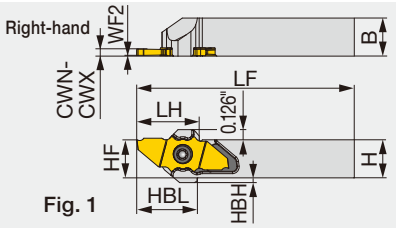


Fig. 1

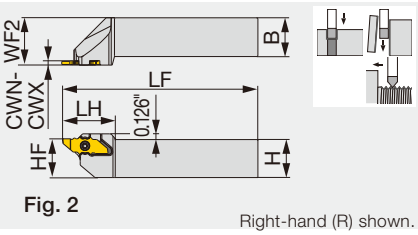


Fig. 2

Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque	Fig.
JSXXR/L063	0.024	0.098	0.375	0.375	4.750	0.774	0.375	0.008/0.367	0.748	0.120	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L083	0.024	0.098	0.500	0.500	4.750	0.774	0.500	0.008/0.492	0.748	0.060	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103	0.024	0.098	0.625	0.625	4.750	0.774	0.625	0.008/0.617	-	-	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L123	0.024	0.098	0.750	0.750	3.950	0.886	0.750	0.008/0.742	-	-	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L163	0.024	0.098	1.000	1.000	5.350	1.339	1.000	1.250	-	-	JX**06...,12...,16..., 20...	0.89	2

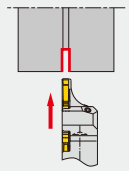
Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	0.6	2.5	10	10	120	19.65	10	0.2/9.8	19	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09	0.6	2.5	12	12	85	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09	0.6	2.5	12	12	120	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09	0.6	2.5	16	16	120	19.65	16	0.2/15.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2020H09	0.6	2.5	20	20	100	22.5	20	0.2/19.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2525Z09	0.6	2.5	25	25	135	34	25	30	-	-	JX**06...,12...,16..., 20...	1.2	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20...inserts, and 0.157" (4 mm) shorter for JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/H/X-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes

Direct connection **Tube connection**



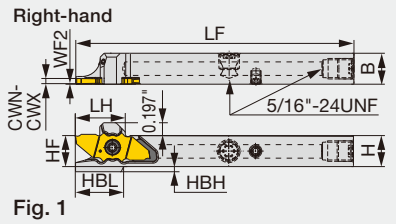


Fig. 1

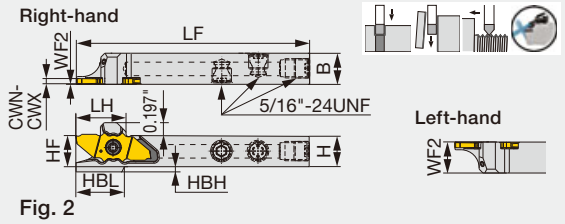


Fig. 2

Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque	Fig.
JSXXR/L083F-CHP	0.024	0.098	0.500	0.500	3.344	0.764	0.500	0.008/0.492	0.736	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-CHP(3)	0.024	0.098	0.500	0.500	4.750	0.764	0.500	0.008/0.492	0.736	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-CHP(3)	0.024	0.098	0.625	0.625	4.750	0.764	0.625	0.008/0.617	-	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(3)	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-CHP(3)	0.6	2.5	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-CHP(3),(4)	0.6	2.5	16	16	120	19.4	16	0.2	18.7	2.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-CHP(3)	0.6	2.5	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 0.157" (4 mm) shorter for JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS





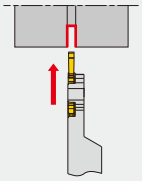


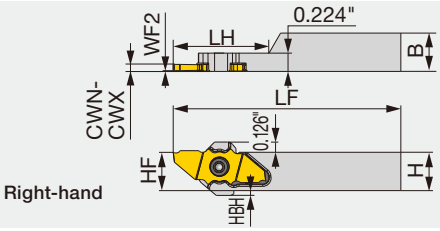

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**09	CSTC-4L100DL	T-1008/5	-	-	-	-
JSXXL**09	CSTC-4L100DR	T-1008/5	-	-	-	-
JSXXR**F**-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F**-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X**-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X**-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

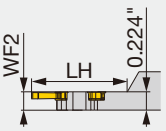
Reference pages: Inserts → F076, F077, Standard cutting conditions → F078
Parts for coolant hose → F290

JSXXR/L-S

Parting-off toolholders, for swiss lathes (for sub spindle)







Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque
JSXXR/L063-S	0.024	0.098	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX**06...,12...,16...(3)	0.89
JSXXR/L083-S	0.024	0.098	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX**06...,12...,16...(3)	0.89

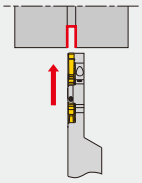
Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*
JSXXR/L1010X09-S	0.6	2.5	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...(3)	1.2
JSXXR/L1212F09-S	0.6	2.5	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1212X09-S	0.6	2.5	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1616X09-S	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) JX**20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/X-S-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes (for sub spindle)

Direct connection **Tube connection**



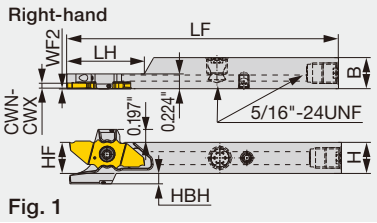


Fig. 1

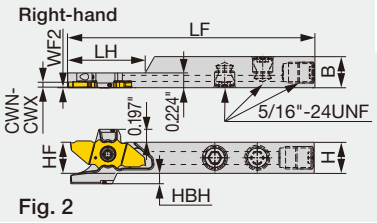
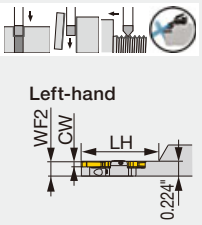


Fig. 2



Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque	Fig.
JSXXR/L083F-S-CHP	0.024	0.098	0.500	0.500	3.344	1.024	0.500	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-S-CHP	0.024	0.098	0.500	0.500	4.750	1.181	0.500	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-S-CHP	0.024	0.098	0.625	0.625	4.750	1.181	0.625	0.008/0.217	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP(4)	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-S-CHP(3),(4)	0.6	2.5	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09B-S-CHP(3)	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-S-CHP(3),(4)	0.6	2.5	16	16	120	30	16	0.2	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-S-CHP(3)	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

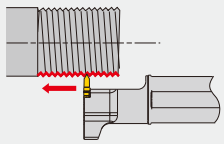
SPARE PARTS

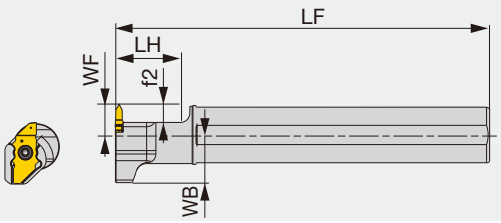
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**-S	CSTC-4L055DL	T-1008/5	-	-	-	-
JSXXL**-S	CSTC-4L055DR	T-1008/5	-	-	-	-
JSXXR**F**-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F**-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**X**-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**X**-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

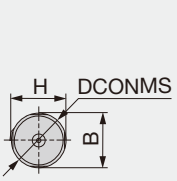
Reference pages: Inserts → F076, F077, Standard cutting conditions → F078
Parts for coolant hose → F290

JS-SXXL09

External grooving and threading toolholder with round shank, for Swiss lathes







Metric	DCONMS	H	B	LF	LH	WB	WF(1)	f2(1)	Insert	Torque
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX**06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX**06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX**06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX**06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX**06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX**06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX**06,12*R	1.2

Torque: Recommended clamping torque: N·m
(1) When using JX..06... insert, both WF and f2 sizes will be 2 mm shorter than the values provided above.

SPARE PARTS



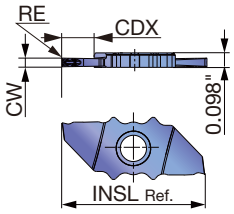

Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → F076, F077, Standard cutting conditions → F078

INSERTS

JXPS**R/L-F (with 3D chipbreaker, sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

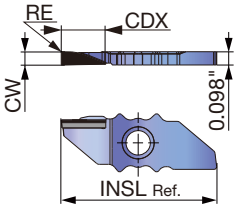
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)
JXPS06R06F	R	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS06L06F	L	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS12R08F	R	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12L08F	L	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12R10F	R	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12L10F	L	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS16R15F	R	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS16L15F	L	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS20R20F	R	2	0.079	0.002	●	0.787	0.413	1.299
JXPS20L20F	L	2	0.079	0.002	●	0.787	0.413	1.299

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

JXDX**R-F (PCD insert)





P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice

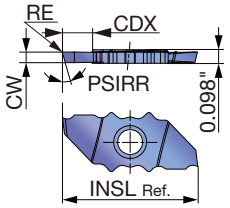
Designation	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	PCD DX110	CDX (in)	INSL (in)
JXDX12R20F	R	2	0.079	< 0.0039	●	0.236	0.984
JXDX12R25F	R	2.5	0.098	< 0.0039	●	0.256	0.984
JXDX16R25F	R	2.5	0.098	< 0.0039	●	0.276	1.142

● : Line up

Reference pages: Toolholders → F073 - F075, Standard cutting conditions → F078

JXPG**R/L-F (Sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR
JXPG06R10F	R	1	0.039	0.002	●	0.236	0.138	0.827	0°
JXPG06L10F	L	1	0.039	0.002	●	0.236	0.138	0.827	0°
JXPG06R15F	R	1.5	0.059	0.002	●	0.236	0.138	0.827	0°
JXPG06L15F	L	1.5	0.059	0.002	●	0.236	0.138	0.827	0°
JXPG06R10F-15	R	1	0.039	0.002	●	0.236	0.138	0.827	15°
JXPG06L10F-15	L	1	0.039	0.002	●	0.236	0.138	0.827	15°
JXPG06R15F-15	R	1.5	0.059	0.002	●	0.236	0.138	0.827	15°
JXPG06L15F-15	L	1.5	0.059	0.002	●	0.236	0.138	0.827	15°
JXPG12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.984	0°
JXPG12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.984	0°
JXPG12R20F	R	2	0.079	0.002	●	0.472	0.256	0.984	0°
JXPG12L20F	L	2	0.079	0.002	●	0.472	0.256	0.984	0°
JXPG12R15F-15	R	1.5	0.059	0.002	●	0.472	0.256	0.984	15°
JXPG12L15F-15	L	1.5	0.059	0.002	●	0.472	0.256	0.984	15°
JXPG12R20F-15	R	2	0.079	0.002	●	0.472	0.256	0.984	15°
JXPG12L20F-15	L	2	0.079	0.002	●	0.472	0.256	0.984	15°
JXPG16R15F	R	1.5	0.059	0.002	●	0.630	0.335	1.142	0°
JXPG16L15F	L	1.5	0.059	0.002	●	0.630	0.335	1.142	0°
JXPG16R20F	R	2	0.079	0.002	●	0.630	0.335	1.142	0°
JXPG16L20F	L	2	0.079	0.002	●	0.630	0.335	1.142	0°
JXPG16R15F-15	R	1.5	0.059	0.002	●	0.630	0.335	1.142	15°
JXPG16L15F-15	L	1.5	0.059	0.002	●	0.630	0.335	1.142	15°
JXPG16R20F-15	R	2	0.079	0.002	●	0.630	0.335	1.142	15°
JXPG16L20F-15	L	2	0.079	0.002	●	0.630	0.335	1.142	15°
JXPG20R15F	R	1.5	0.059	0.002	●	0.787	0.413	1.299	0°
JXPG20L15F	L	1.5	0.059	0.002	●	0.787	0.413	1.299	0°
JXPG20R20F	R	2	0.079	0.002	●	0.787	0.413	1.299	0°
JXPG20L20F	L	2	0.079	0.002	●	0.787	0.413	1.299	0°
JXPG20R15F-15	R	1.5	0.059	0.002	●	0.787	0.413	1.299	15°
JXPG20L15F-15	L	1.5	0.059	0.002	●	0.787	0.413	1.299	15°
JXPG20R20F-15	R	2	0.079	0.002	●	0.787	0.413	1.299	15°
JXPG20L20F-15	L	2	0.079	0.002	●	0.787	0.413	1.299	15°

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

Reference pages: Toolholders → F073 - F075, Standard cutting conditions → F078

STANDARD CUTTING CONDITIONS

Parting, Grooving

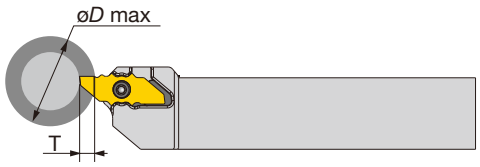
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Carbon steels, Alloy steels 1055, etc., 4140, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

For aluminum and non-ferrous metal PCD insert

ISO	Workpiece materials	Grades	Operation	Cutting speed *Vc* (sfm)	Feed *f* (ipr)	Depth of cut *ap* (in)
N	Aluminum alloys 5056, 6061, etc.	DX110	Grooving	328 - 984	0.0012 - 0.0059	-
N		DX110	Turning	328 - 984	0.0012 - 0.0059	< 0.236

Maximum grooving depths (T) in relation to workpiece diameters (ø*D* max) without interference

Maximum grooving depth (T) is limited relative to workpiece diameter (ø*D* max) to avoid interference between workpiece and insert.



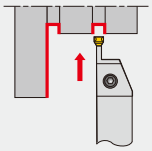
Grooving depths (T) and workpiece diameters (ø*D* max) for each insert

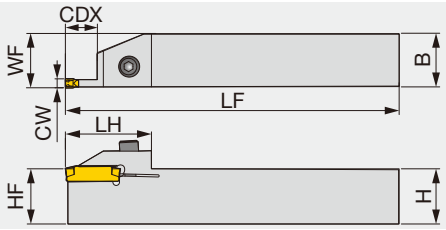
Designation	T≤0.039	T≤0.079	T≤0.098	T≤0.118	T≤0.138	T≤0.157	T≤0.197	T≤0.217	T≤0.236	T≤0.256	T≤0.276	T≤0.295	T≤0.315	T≤0.335	T≤0.354	T≤0.374	T≤0.394	T≤0.413
JXP*06...	∞	∞	7.874	2.362	1.181	-	-	-	-	-	-	-	-	-	-	-	-	-
JXP*12...	∞	∞	∞	∞	∞	∞	∞	3.937	2.362	1.378	-	-	-	-	-	-	-	-
JXP*16...	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	7.874	3.543	1.969	0.984	-	-	-	-
JXP*20...	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	7.874	3.150	1.969	0.984

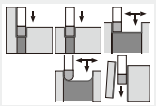
(Unit: inch)

CGWSR/L-W

External grooving, parting and turning toolholder, for 2 corner inserts







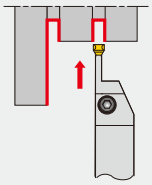
Right hand (R) shown.

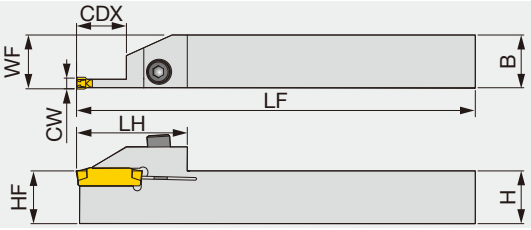
Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGWSR/L1616-W30	3	12	16	16	125	34	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30	3	12	20	20	150	34	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30	3	12	25	25	150	34	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40	4	13	20	20	150	39	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40	4	13	25	25	150	39	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50	5	13	20	20	150	39	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50	5	13	25	25	150	39	25	25.4	WG*50, WGE50R/L	5

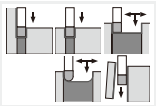
Torque: Recommended clamping torque: N·m

CGWSR/L-W-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGWSR/L1616-W20-L	2	15	16	16	125	37	16	16.2	WGE20, WGE20R/L	5
CGWSR/L2020-W20-L	2	15	20	20	150	37	20	20.2	WGE20, WGE20R/L	5
CGWSR/L2525-W20-L	2	15	25	25	150	37	25	25.2	WGE20, WGE20R/L	5
CGWSR/L1616-W30-L	3	16.5, 17.5(1)	16	16	125	37	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30-L	3	16.5, 17.5(1)	20	20	150	37	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30-L	3	16.5, 17.5(1)	25	25	150	37	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40-L	4	21, 21.5(1)	20	20	150	42	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40-L	4	21, 21.5(1)	25	25	150	42	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50-L	5	21	20	20	150	42	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50-L	5	21	25	25	150	42	25	25.4	WG*50, WGE50R/L	5

Torque: Recommended clamping torque: N·m
(1) The value is true when using the WGR insert.

SPARE PARTS



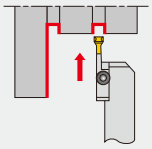


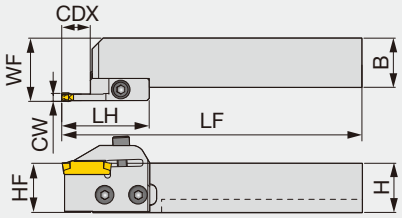
Designation	Clamping screw	Wrench
CGWSR/L****-W...	CHHM5-18	P-4

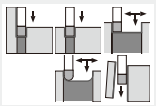
Reference pages: Inserts → F086 - F088, Standard cutting conditions → F088

CGWSR/L-WG

External grooving, parting and turning toolholder, for 2 corner inserts







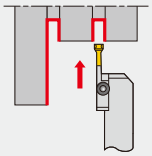
Right hand (R) shown.
Dashed line: 20mm square shank.

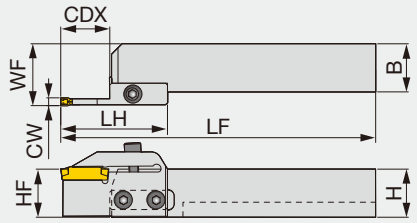
Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L2020-W30GR/L	3	12	20	20	150.5	43.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L	5
CGWSR/L2525-W30GR/L	3	12	25	25	150.5	43.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L	5
CGWSR/L2020-W40GR/L	4	13	20	20	151.5	44.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L	5
CGWSR/L2525-W40GR/L	4	13	25	25	151.5	44.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L	5
CGWSR/L2020-W50GR/L	5	13	20	20	151.5	44.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L	5
CGWSR/L2525-W50GR/L	5	13	25	25	151.5	44.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L	5

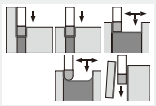
Note: Use right-hand adapters (R) with right-hand shanks (R); and left-hand adapters (L) with left-hand shanks (L).
Torque: Recommended clamping torque: N·m

CGWSR/L-WG-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.
Dashed line: 20mm square shank.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L2020-W20GR/L-L	2	15	20	20	153.5	46.5	20	26.7	WGE20, WGE20R/L	CGWSR/L2020	W20GR/L-L	5
CGWSR/L2525-W20GR/L-L	2	15	25	25	153.5	46.5	25	31.7	WGE20, WGE20R/L	CGWSR/L2525	W20GR/L-L	5
CGWSR/L2020-W30GR/L-L	3	16.5, 17.5(1)	20	20	157.5	50.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L-L	5
CGWSR/L2525-W30GR/L-L	3	16.5, 17.5(1)	25	25	157.5	50.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L-L	5
CGWSR/L2020-W40GR/L-L	4	21, 21.5(1)	20	20	162.5	55.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L-L	5
CGWSR/L2525-W40GR/L-L	4	21, 21.5(1)	25	25	162.5	55.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L-L	5
CGWSR/L2020-W50GR/L-L	5	21	20	20	162.5	55.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L-L	5
CGWSR/L2525-W50GR/L-L	5	21	25	25	162.5	55.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L-L	5

Note: Use right-hand adapters (R) with right-hand shanks (R); and left-hand adapters (L) with left-hand shanks (L).
Torque: Recommended clamping torque: N·m
(1) The value is true when using the WGR insert.

SPARE PARTS





Designation	Clamping screw	Adapter screw	Wrench
CGWSR/L****-W**G...	CHHM5-18	CSHB-6	P-4

Combination of adapter and shank

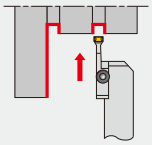
Shank	Adapter	
	**GR, **GR-L	**GL, **GL-L
CGWSR...	●	
CGWSL...		●
CGWTR...		●
CGWTL...	●	

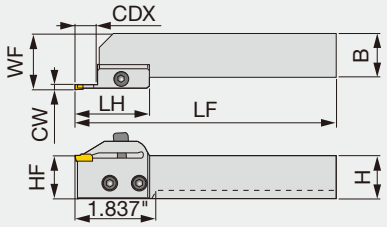
● : Corresponding

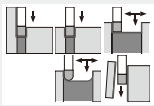
Reference pages: Inserts → F086 - F088, Shanks → F085, Standard cutting conditions → F088

CGWSR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Inch	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L12-20GR/L	0.079	0.472	0.750	0.750	5.913	1.699	0.787	1.055	GE20, GE20-AL	CGWSR/L12	20GR/L	3.69
CGWSR/L16-20GR/L	0.079	0.472	1.000	1.000	5.913	1.699	0.984	1.252	GE20, GE20-AL	CGWSR/L16	20GR/L	3.69
CGWSR/L12-30GR/L	0.118	0.472	0.750	0.750	5.913	1.699	0.787	1.063	G*30,GE30R/L,GE30-AL	CGWSR/L12	30GR/L	3.69
CGWSR/L16-30GR/L	0.118	0.472	1.000	1.000	5.913	1.699	0.984	1.260	G*30,GE30R/L,GE30-AL	CGWSR/L16	30GR/L	3.69
CGWSR/L12-40GR/L	0.157	0.472	0.750	0.750	5.913	1.699	0.787	1.067	G*40,GE40R/L,GE40-AL	CGWSR/L12	40GR/L	3.69
CGWSR/L16-40GR/L	0.157	0.472	1.000	1.000	5.913	1.699	0.984	1.264	G*40,GE40R/L,GE40-AL	CGWSR/L16	40GR/L	3.69
CGWSR/L12-50GR/L	0.197	0.472	0.750	0.750	5.913	1.699	0.787	1.071	G*50,GE50R	CGWSR/L12	50GR	3.69

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque*
CGWSR/L2020-20GR/L	2	12	20	20	150.2	43.15	20	26.8	GE20, GE20-AL	CGWSR/L2020	20GR/L	5
CGWSR/L2525-20GR/L	2	12	25	25	150.2	43.15	25	31.8	GE20, GE20-AL	CGWSR/L2525	20GR/L	5
CGWSR/L2020-30GR/L	3	12	20	20	150.2	43.15	20	27	G*30,GE30R/L,GE30-AL	CGWSR/L2020	30GR/L	5
CGWSR/L2525-30GR/L	3	12	25	25	150.2	43.15	25	32	G*30,GE30R/L,GE30-AL	CGWSR/L2525	30GR/L	5
CGWSR/L2020-40GR/L	4	12	20	20	150.2	43.15	20	27.1	G*40,GE40R/L,GE40-AL	CGWSR/L2020	40GR/L	5
CGWSR/L2525-40GR/L	4	12	25	25	150.2	43.15	25	32.1	G*40,GE40R/L,GE40-AL	CGWSR/L2525	40GR/L	5
CGWSR/L2020-50GR/L	5	12	20	20	150.2	43.15	20	27.2	G*50,GE50R	CGWSR/L2020	50GR	5

Note: For diameter compensation values in traversing, see page F129.
Use right-hand adapters (R) with right-hand shanks (R); and left-hand adapters (L) with left-hand shanks (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS





Designation	Clamping screw	Adapter screw	Wrench
CGW*R/L****-**G...	CHHM5-18	CSHB-6	P-4

Combination of adapter and shank

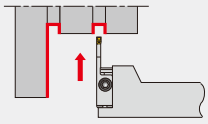
Shank	Adapter	
	**GR, **GR-L	**GL, **GL-L
CGWSR...	●	
CGWSL...		●
CGWTR...		●
CGWTL...	●	

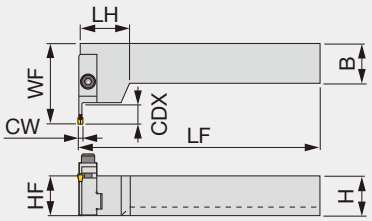
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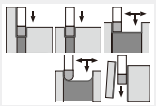
Reference pages: Inserts → F089 - F094, Shanks → F085, Standard cutting conditions → F094

CGWTR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Inch	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque
CGWTR/L12-30GL/R	0.118	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*30,GE30R/L,GE30-AL	CGWTR/L12	30GL/R	3.69
CGWTR/L16-30GL/R	0.118	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*30,GE30R/L,GE30-AL	CGWTR/L16	30GL/R	3.69
CGWTR/L12-40GL/R	0.157	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*40,GE40R/L,GE40-AL	CGWTR/L12	40GL/R	3.69
CGWTR/L16-40GL/R	0.157	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*40,GE40R/L,GE40-AL	CGWTR/L16	40GL/R	3.69
CGWTR/L12-50GL/R	0.197	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*50,GE50R/L	CGWTR/L12	50GL/R	3.69
CGWTR/L16-50GL/R	0.197	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*50,GE50R/L	CGWTR/L16	50GL/R	3.69

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Adapter	Torque*
CGWTR/L2020-30GL/R	3	12	20	20	150	12.9	20	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2020	30GL/R	5
CGWTR/L2525-30GL/R	3	12	25	25	150	12.9	25	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2525	30GL/R	5
CGWTR/L2020-40GL/R	4	12	20	20	150.1	12.9	20	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2020	40GL/R	5
CGWTR/L2525-40GL/R	4	12	25	25	150.1	12.9	25	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2525	40GL/R	5
CGWTR/L2020-50GL/R	5	12	20	20	150.2	12.9	20	49.9	G*50,GE50R/L	CGWTR/L2020	50GL/R	5
CGWTR/L2525-50GL/R	5	12	25	25	150.2	12.9	25	49.9	G*50,GE50R/L	CGWTR/L2525	50GL/R	5

Note: For diameter compensation values in traversing, see page F129.
Use left-hand adapters (L) with right-hand shanks (R); and right-hand adapters (R) with left-hand shanks (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS





Designation	Clamping screw	Adapter screw	Wrench
CGW*R/L****-**G...	CHHM5-18	CSHB-6	P-4

Combination of adapter and shank

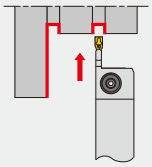
Shank	Adapter	
	**GR, **GR-L	**GL, **GL-L
CGWSR...	●	
CGWSL...		●
CGWTR...		●
CGWTL...	●	

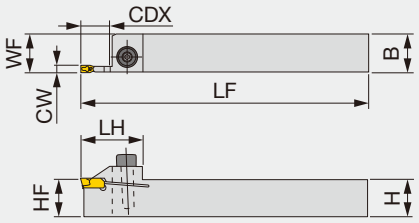
● : Corresponding

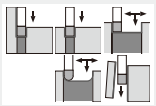
Reference pages: Inserts → F089 - F094, Shanks → F085, Standard cutting conditions → F094

CGSSR/L

External grooving, parting and turning toolholder, for 1 corner inserts







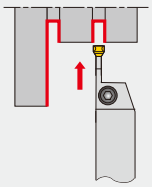
Right hand (R) shown.

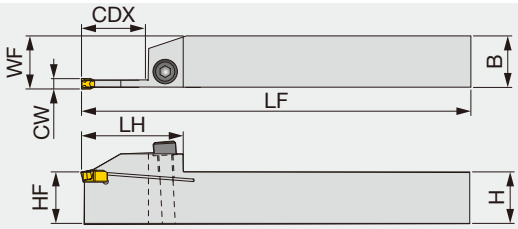
Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGSSR/L1616-20	2	16	16	16	125	27	16	16.2	GE20, GE20-AL	5
CGSSR/L2020-20	2	16	20	20	150	27	20	20.2	GE20, GE20-AL	5
CGSSR/L2525-20	2	16	25	25	150	27	25	25.2	GE20, GE20-AL	5
CGSSR/L1616-30	3	12	16	16	125	27	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30	3	12	20	20	150	27	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30	3	12	25	25	150	27	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40	4	12	20	20	150	27	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40	4	12	25	25	150	27	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50	5	12	20	20	150	27	20	20.7	G*50,GE50R/L	5
CGSSR/L2525-50	5	12	25	25	150	27	25	25.7	G*50,GE50R/L	5

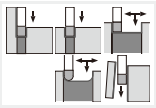
Torque: Recommended clamping torque: N·m

CGSSR/L-D

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGSSR/L1616-30D	3	22	16	16	125	36.2	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30D	3	22	20	20	150	36.2	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30D	3	22	25	25	150	36.2	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40D	4	25	20	20	150	39.5	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40D	4	25	25	25	150	39.5	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50D	5	25	20	20	150	39.5	20	20.7	G*50,GE50R/L	5
CGSSR/L2525-50D	5	25	25	25	150	39.5	25	25.7	G*50,GE50R/L	5

Torque: Recommended clamping torque: N·m

SPARE PARTS



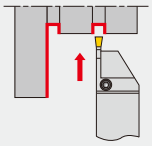


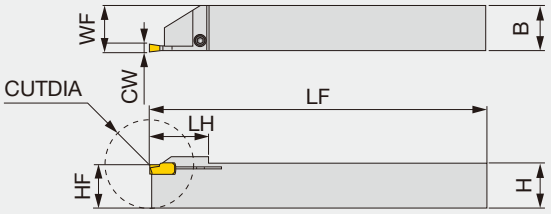
Designation	Clamping screw	Wrench
CGSSR/L...	CHHM5-18	P-4

Reference pages: Inserts → F089 - F094, Standard cutting conditions → F094

JCGSSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCGSSR/L1010-20	2	20	10	10	125	15	10	10.2	GE20, GE20-AL	2.3
JCGSSR/L1212-20	2	25	12	12	125	19	12	12.2	GE20, GE20-AL	2.3
JCGSSR/L1616-20	2	32	16	16	125	22.5	16	16.2	GE20, GE20-AL	2.3

Torque: Recommended clamping torque: N·m

SPARE PARTS



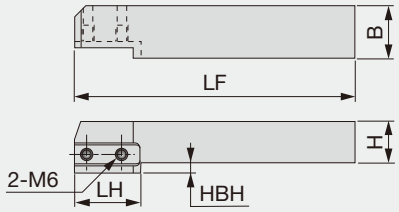


Designation	Clamping screw	Wrench
JCGSSR/L...	CSTB-3	T-9F

Reference pages: Inserts → F089 - F094, Standard cutting conditions → F094

CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



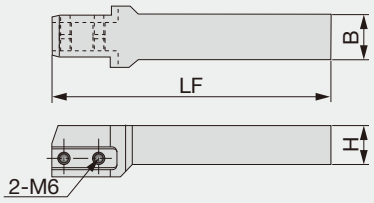
Right hand (R) shown.

Inch	H	B	LF	LH	HBH
CGWSR/L12	0.750	0.750	5.400	1.310	0.250
CGWSR/L16	1.000	1.000	5.400	-	-

Metric	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

CGWSRL

Shank of toolholders. Vertical type with offset

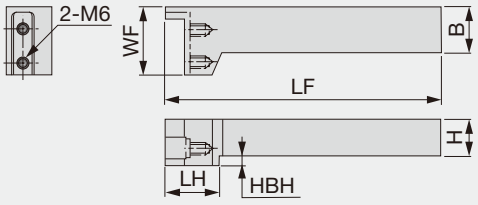


Inch	H	B	LF
CGWSRL12	0.75	0.75	5.40
CGWSRL16	1.00	1.00	5.40

Right (R) or Left (L) hand cartridges can be used in this toolholder

CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders, for tangentially clamped adapter



Right hand (R) shown.

Inch	H	B	LF	LH	WF	HBH
CGWTR/L12	0.75	0.75	6.00	1.20	1.50	0.234
CGWTR/L16	1.00	1.00	6.00	-	1.50	-

Metric	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

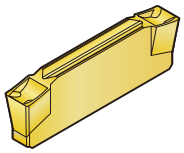
SPARE PARTS



Designation	Adapter screw
CGW...	CSHB-6

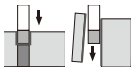
External grooving and parting

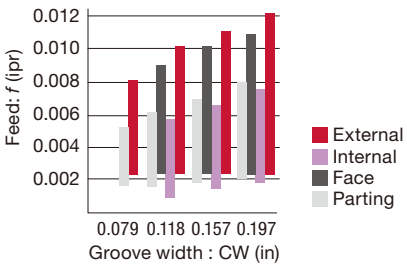
WGE



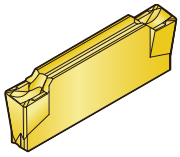
F087

1st choice for external grooving and parting
Excellent chip control for grooving
CW = 0.079" - 0.197"





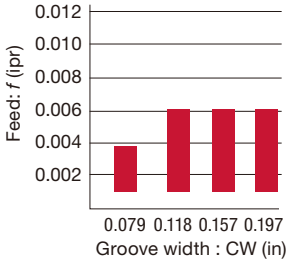
WGE R/L



F087

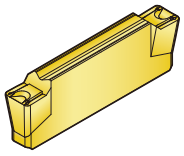
Handed insert
Minimize burr generation when workpiece is cut off
CW = 0.079" - 0.197"





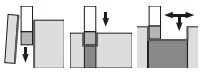
External grooving and turning

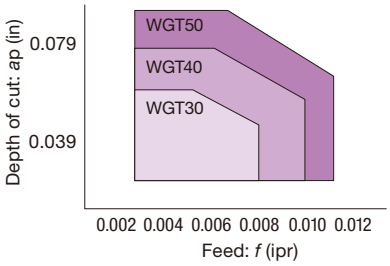
WGT



F088

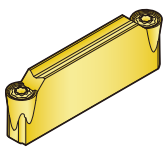
1st choice for turning
Low cutting force and good chip control for traversing
CW = 0.118" - 0.197"





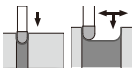
Profiling

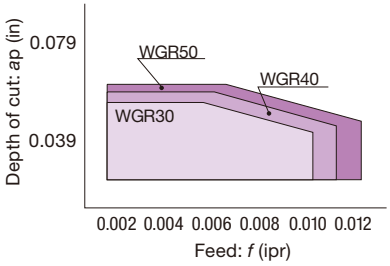
WGR



F088

Low cutting force and good chip control for profiling
CW = 0.118" - 0.197"



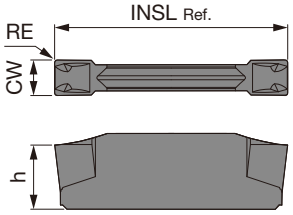


Please see page F*** for the product details.

INSERTS (2 corners)

WGE

For external grooving and parting



P	Steel	★	★	★				★		
M	Stainless		★	★						
K	Cast iron		★	☆				☆		
N	Non-ferrous									
S	Superalloys		☆							
H	Hard materials									

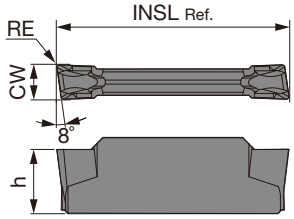
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated						Cermet						INSL (in)	h (in)
				T9225	AH120	GH730				NS9530							
WGE20	2	0.079	0.008	●	●	●				●						0.787	0.185
WGE30	3	0.118	0.008	●	●	●				●						0.787	0.217
WGE40	4	0.157	0.008	●	●	●				●						0.984	0.224
WGE50	5	0.197	0.008	●	●	●				●						0.984	0.232

● : Line up

WGE(R/L)

For parting off (handed inserts)



Right hand (R) shown.

P	Steel	★	★							
M	Stainless	★	★							
K	Cast iron	★	☆							
N	Non-ferrous									
S	Superalloys	☆								
H	Hard materials									

★ : First choice
☆ : Second choice

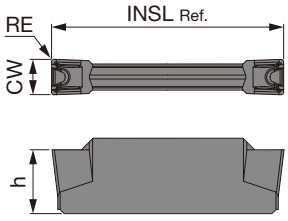
Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated										INSL (in)	h (in)
					AH120	GH730										
WGE20R	R	2	0.079	0.008		●									0.787	0.185
WGE20L	L	2	0.079	0.008		●									0.787	0.185
WGE30R	R	3	0.118	0.008	●	●									0.787	0.217
WGE30L	L	3	0.118	0.008		●									0.787	0.217
WGE40R	R	4	0.157	0.008		●									0.984	0.224
WGE40L	L	4	0.157	0.008		●									0.984	0.224
WGE50R	R	5	0.197	0.008		●									0.984	0.232
WGE50L	L	5	0.197	0.008		●									0.984	0.232

● : Line up

Reference pages: Toolholders → F079, F080, Standard cutting conditions → F088

WGT

For external grooving, parting, and turning



		Coated			Cermet	
		T9225	AH120	GH730	NS9530	
P	Steel	★	★	★	★	
M	Stainless		★	★		
K	Cast iron		★	☆	☆	
N	Non-ferrous					
S	Superalloys		☆			
H	Hard materials					

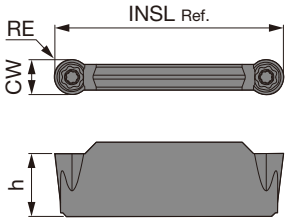
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGT30	3	0.118	0.016	●		●	●	0.787	0.217
WGT40	4	0.157	0.016	●		●	●	0.984	0.224
WGT50	5	0.197	0.016	●	●	●	●	0.984	0.232

● : Line up

WGR

For profiling (full radius)



		Coated			Cermet	
		T9225	AH120	GH730	NS9530	
P	Steel	★	★	★	★	
M	Stainless		★	★		
K	Cast iron		★	☆	☆	
N	Non-ferrous					
S	Superalloys		☆			
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGR30	3	0.118	0.059	●	●	●	●	0.787	0.217
WGR40	4	0.157	0.079	●	●	●	●	0.984	0.224
WGR50	5	0.197	0.098		●	●	●	0.984	0.232

● : Line up

STANDARD CUTTING CONDITIONS (for 2 corner inserts)

ISO	Workpiece material	Recommended grade	Cutting speed *Vc* (sfm)
P	Low carbon steels Alloy steels (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steels Alloy steels (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steels Alloy steels (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 492
M	Stainless steels	GH730, AH120	164 - 394
K	Gray and ductile cast irons	GH730, AH120	164 - 591

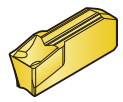
Operation	Feed: *f* (ipr) Groove width: CW 2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (WGE□□)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting (WGE□□R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Turning (WGT□□)	-	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Profiling (WGR□□)	-	*ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.063 *f* = 0.002 - 0.012

Note: For diameter compensation values in traversing, see page F129.

Reference pages: Toolholders → F079, F080

External grooving and parting

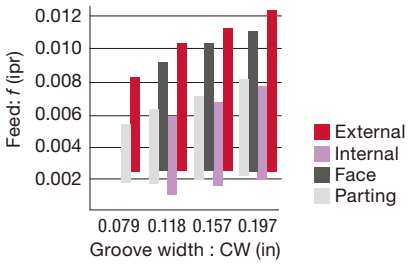
GE

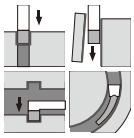


F091

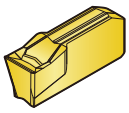
1st choice for external grooving and parting
Excellent chip control

CW = 0.079" - 0.197"





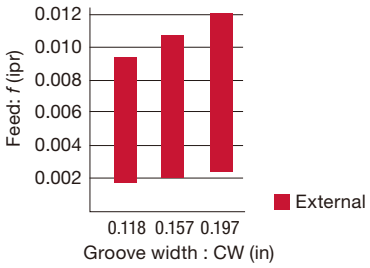
GF

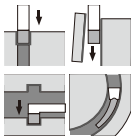


F092

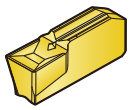
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 0.118" - 0.197"





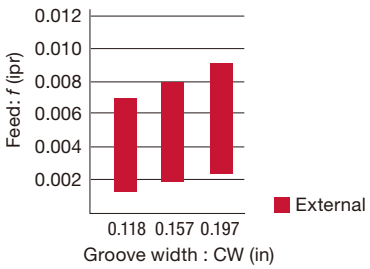
GN

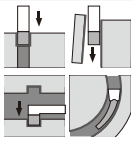


F093

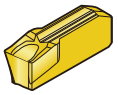
1st choice for internal grooving
Low cutting force and good chip control for internal grooving

CW = 0.118" - 0.197"





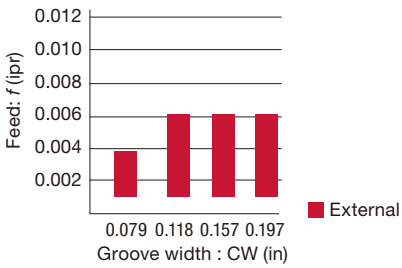
GE R/L



F093

Handed insert
Minimize burr generation when workpiece is cut off

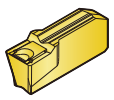
CW = 0.118" - 0.197"





External grooving and turning

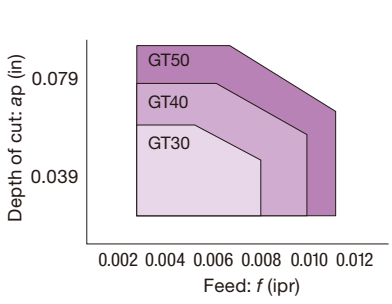
GT

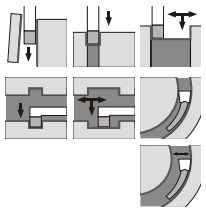


F091

1st choice for turning
Low cutting force and good chip control for traversing

CW = 0.118" - 0.197"

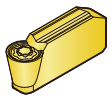




Please see page F*** for the product details.

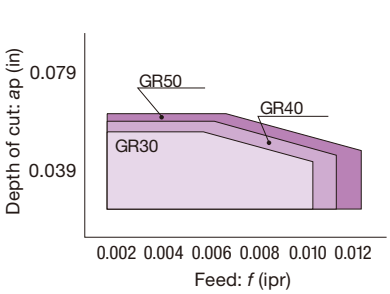
Profiling

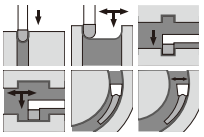
GR



F092

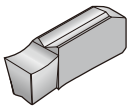
Full radius type
Low cutting force and good chip control for profiling
CW = 0.118" - 0.197"





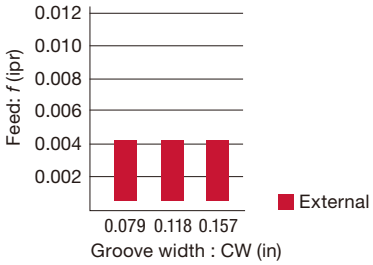
For aluminum and non-ferrous metal

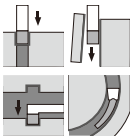
GE-AL



F094

Reduce cutting force and welding due to sharp chipbreaker
CW = 0.079" - 0.157"





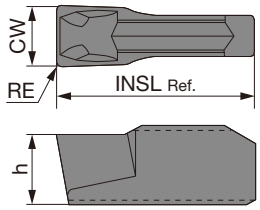
External
Internal
Face
Parting
Others

Please see page F*** for the product details.

INSERTS (1 corner)

GE

For external grooving and parting



		Coated			Cermet	
		T9225	AH120	GH730	NS9530	
P	Steel	★	★	★	★	
M	Stainless		★	★		
K	Cast iron		★	☆	☆	
N	Non-ferrous					
S	Superalloys		☆			
H	Hard materials					

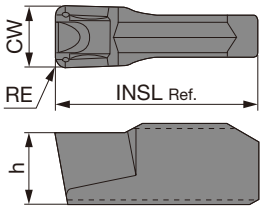
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GE20	2	0.079	0.008		●	●	●	0.394	0.138
GE30	3	0.118	0.008	●	●	●	●	0.394	0.138
GE40	4	0.157	0.008	●	●	●	●	0.394	0.157
GE50	5	0.197	0.008	●	●	●	●	0.472	0.177

● : Line up

GT

For external grooving and turning



		Coated			Cermet	
		T9225	AH120	GH730	NS9530	
P	Steel	★	★	★	★	
M	Stainless		★	★		
K	Cast iron		★	☆	☆	
N	Non-ferrous					
S	Superalloys		☆			
H	Hard materials					

★ : First choice
☆ : Second choice

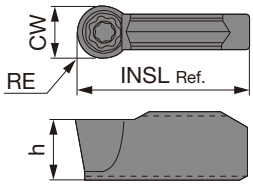
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GT30	3	0.118	0.016		●	●	●	0.394	0.138
GT40	4	0.157	0.016		●	●	●	0.394	0.157
GT50	5	0.197	0.016	●	●	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F081 - F084, Standard cutting conditions → F094

GR

For profiling (full radius)



P	Steel	★	★	★				★			
M	Stainless		★	★							
K	Cast iron		★	☆				☆			
N	Non-ferrous										
S	Superalloys		☆								
H	Hard materials										

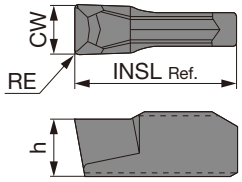
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated						Cermet						INSL (in)	h (in)
				T9225	AH120	GH730				NS9530							
GR30	3	0.118	0.059		●	●				●						0.394	0.138
GR40	4	0.157	0.079	●	●	●				●						0.394	0.157
GR50	5	0.197	0.098	●	●	●				●						0.472	0.177

● : Line up

GF

For face grooving



P	Steel	★			★						
M	Stainless	★									
K	Cast iron	☆			☆						
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

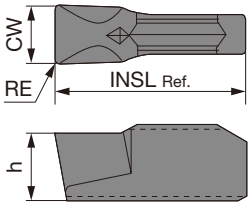
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet									INSL (in)	h (in)
				GH730			NS9530										
GF30	3	0.118	0.008	●			●									0.394	0.138
GF40	4	0.157	0.008	●			●									0.394	0.157
GF50	5	0.197	0.008	●			●									0.472	0.177

● : Line up

Reference pages: Toolholders → F081 - F084, Standard cutting conditions → F094

GN

For internal grooving



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

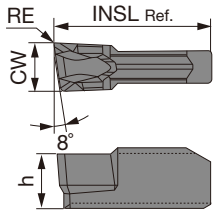
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-R/L

For parting off (handed inserts)



Right hand (R) shown.

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

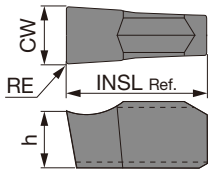
Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
GE30R	R	3	0.118	0.008	●	●	0.394	0.138
GE30L	L	3	0.118	0.008		●	0.394	0.138
GE40R	R	4	0.157	0.008	●	●	0.394	0.157
GE40L	L	4	0.157	0.008		●	0.394	0.157
GE50R	R	5	0.197	0.008		●	0.472	0.177
GE50L	L	5	0.197	0.008	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F081 - F084, Standard cutting conditions → F094

GE-AL

For aluminum and non-ferrous metal



P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE20-AL	2	0.079	0.008	●	0.394	0.138
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

● : Line up

STANDARD CUTTING CONDITIONS (for 1 corner inserts)

ISO	Workpiece material	Grades	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 394
M	Stainless steel	GH730, AH120	164 - 394
K	Gray iron, Ductile cast iron	GH730, AH120	164 - 591
N	Aluminum alloy, Non-ferrous metal	KS05F	656 - 984

For External

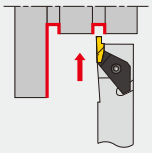
Operation	Feed: *f* (ipr) Groove width: CW 2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (GE**)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting off (GE**R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Traversing (GT**)	-	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Profiling (GR**)	-	*ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.063 *f* = 0.002 - 0.012
Grooving for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	0.0012 - 0.004	-

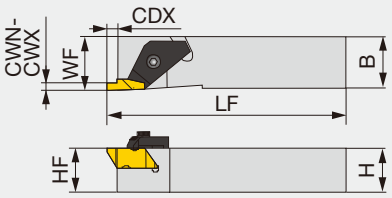
For diameter compensation values in traversing, see page F129.

Reference pages: Toolholders → F081 - F084

FLASR/L

External grooving and threading toolholder, for Swiss lathes







Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLASR/L-082D	0.031	0.128	0.138	0.500	0.500	0.500	6.000	0.500	FL*-2**R/L...	2.21
FLASR-102B	0.031	0.128	0.138	0.625	0.625	0.625	4.500	0.625	FL*-2**R...	2.21
FLASR/L-103B	0.031	0.250	0.210	0.625	0.625	0.625	4.500	0.625	FL*-3**R/L...	2.21

Metric	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque*
FLASR/L-1616M3	1	3	5.31	16	16	16	125	16	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS

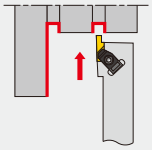
Designation	Clamp	Clamping screw	Wrench
FLASR-082D	TF-182	S-310	7/64HEX
FLASL-082D	TF-183	S-310	7/64HEX
FLASR-102B, FLASR-103B	TF-184	S-412	5/32HEX
FLASL-103B	TF-185	S-412	5/32HEX

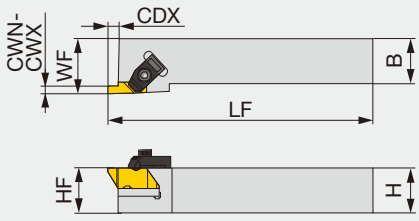
METRIC SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX

FLSR/L

External grooving and threading toolholder, for Swiss lathes







Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/L-122B	0.031	0.128	0.140	0.750	0.750	0.750	4.500	1.000	FL*-2**R/L...	2.21
FLSR/L-162C	0.031	0.128	0.140	1.000	1.000	1.000	5.000	1.250	FL*-2**R/L...	2.21
FLSR/L-123B	0.031	0.250	0.210	0.750	0.750	0.750	4.500	1.000	FL*-3**R/L...	2.21
FLSR/L-163C	0.031	0.250	0.210	1.000	1.000	1.000	5.000	1.250	FL*-3**R/L...	2.21

Metric	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque*
FLSR/L-2020M3	1	3	4.5	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1	3	4.5	25	25	25	150	32	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-122B, FLSR-162C	TF-74	S-310	7/64HEX
FLSL-122B, FLSL-162C	TF-75	S-310	7/64HEX
FLSR-123B, FLSR-163C	TF-72	S-412	5/32HEX
FLSL-123B, FLSL-163C	TF-73	S-412	5/32HEX

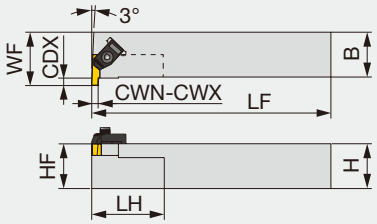
METRIC SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

Reference pages: Inserts → F097 - F104, Standard cutting conditions → F104

FLER/L

External toolholders for grooving & threading



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	LH	WF	Insert	Torque
FLER/L-122B	0.031	0.128	0.140	0.750	0.750	0.750	4.500	1.000	1.000	FL*-2**L/R...	2.21
FLER/L-162C	0.031	0.128	0.140	1.000	1.000	1.000	5.000	1.000	1.250	FL*-2**L/R...	2.21
FLER/L-123B	0.031	0.250	0.210	0.750	0.750	0.750	4.500	2.000	1.125	FL*-3**L/R...	2.21
FLER/L-163D	0.031	0.250	0.210	1.000	1.000	1.000	6.000	2.000	1.250	FL*-3**L/R...	2.21

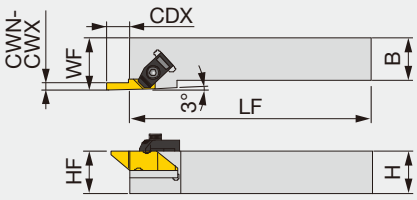
The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLER-122B, FLER-162C	TF-75	S-310	7/64HEX
FLEL-122B, FLEL-162C	TF-74	S-310	7/64HEX
FLER-123B, FLER-163D	TF-73	S-412	5/32HEX
FLEL-123B, FLEL-163D	TF-72	S-412	5/32HEX

FLSR/LT

External toolholders for grooving & threading



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/LT-163D	0.094	0.189	0.440	1.000	1.000	1.000	6.000	1.250	FLGT-3R/L...	2.21
FLSR/LT-203D	0.094	0.189	0.440	1.250	1.250	1.250	6.000	1.500	FLGT-3R/L...	2.21

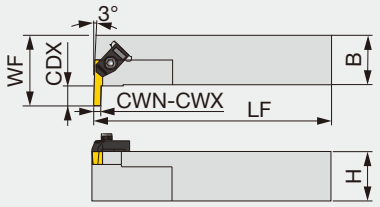
The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

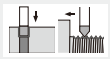
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSRT-163D, FLSRT-203D	TF-72	S-412	5/32HEX
FLSLT-163D, FLSLT-203D	TF-73	S-412	5/32HEX

External
Internal
Face
Parting
Others

Reference pages: Inserts → F097 - F104, Standard cutting conditions → F104





Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLER/LT-163D	0.094	0.189	0.440	1.000	1.000	1.000	6.000	1.250	FLGT-3R/L...	2.21
FLER/LT-203D	0.094	0.189	0.440	1.250	1.250	1.250	6.000	1.500	FLGT-3R/L...	2.21

The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

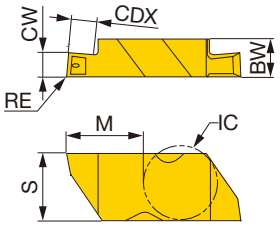




Designation	Clamp	Clamping screw	Wrench
FLERT-163D, FLERT-203D	TF-72	S-412	5/32HEX
FLELT-163D, FLELT-203D	TF-73	S-412	5/32HEX

INSERTS

FLG-CB (With chipbreaker, metric width)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

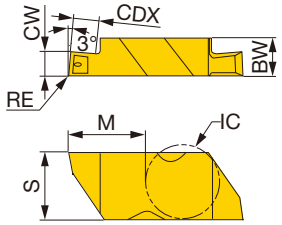
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-3M100R-CB	R	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M100L-CB	L	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M150R-CB	R	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M150L-CB	L	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200R-CB	R	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200L-CB	L	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M250R-CB	R	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M250L-CB	L	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300R-CB	R	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300L-CB	L	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Inserts → F097 - F104, Standard cutting conditions → F104

FLG-CB (With chipbreaker)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

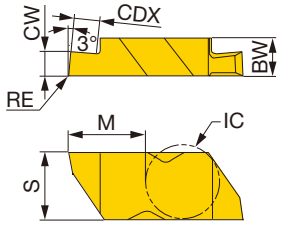
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2047R-CB	R	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L-CB	L	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R-CB	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L-CB	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R-CB	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L-CB	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R-CB	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L-CB	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R-CB	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L-CB	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R-CB	R	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L-CB	L	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLG



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

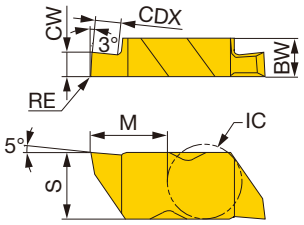
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041R	R	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041L	L	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047R	R	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L	L	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058R	R	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058L	L	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R	R	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L	L	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105R	R	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105L	L	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110R	R	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110L	L	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122R	R	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122L	L	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142R	R	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142L	L	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178R	R	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178L	L	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185R	R	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185L	L	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3250R	R	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050
FLG-3250L	L	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLGP (Positive rake)



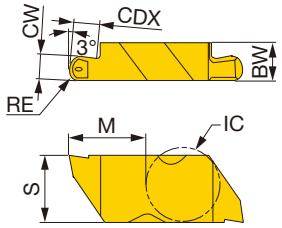
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGP-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

FLR-CB (Full nose radius, with chipbreaker)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

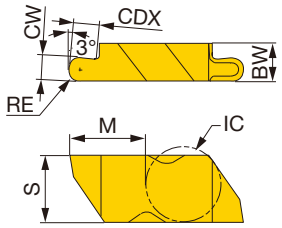
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-3031R-CB	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L-CB	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R-CB	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L-CB	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R-CB	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L-CB	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLR (Full nose radius)



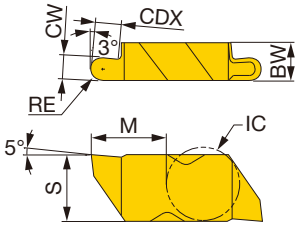
P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	☆		
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-2031R	R	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2031L	L	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2047R	R	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2047L	L	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2062R	R	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-2062L	L	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLR-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

FLRP (Full nose radius and positive rake)



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	☆		
H	Hard materials			

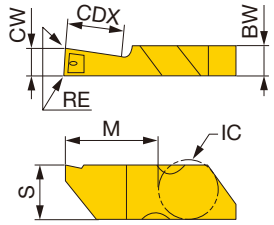
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRP-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLRP-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLGD-CB (Single edge deep, with chipbreaker)



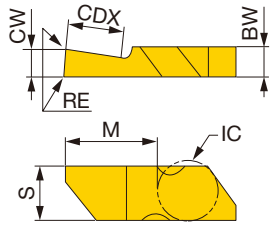
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

FLGD (Single edge deep)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

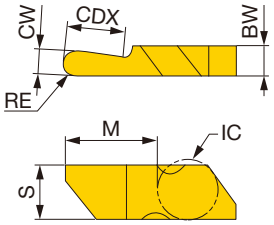
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3094R	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLRD (Full nose radius, single edge deep)



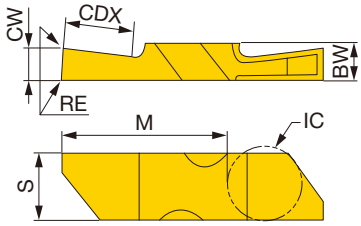
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRD-3062R	R	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3062L	L	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094R	R	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094L	L	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016

● : Line up

FLGT (Double end deep)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

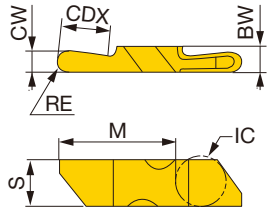
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGT-3094R	R	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3094L	L	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3125R	R	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3125L	L	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189R	R	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189L	L	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

Reference pages: Toolholders → F095 - F097, Standard cutting conditions → F104

FLRT (Double end deep FNR)



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	☆			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRT-3062R	R	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3062L	L	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094R	R	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094L	L	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

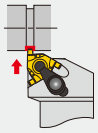
STANDARD CUTTING CONDITIONS

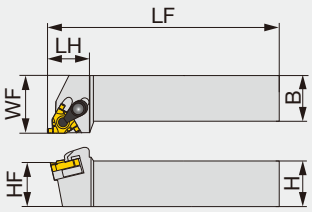
ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	High carbon steel 1045, etc.	AH110	Grooving	328 - 656	0.005 - 0.014
	Alloy steel 4137, etc.	AH110	Grooving	164 - 262	0.005 - 0.012
M	Stainless steel 304, etc.	AH110	Grooving	164 - 492	0.004 - 0.008
K	Gray cast iron No.250B, etc.	AH110	Grooving	164 - 591	0.004 - 0.010
	Ductile cast iron 60-40-18, etc.	AH110	Grooving	164 - 394	0.004 - 0.010

Reference pages: Toolholders → F095 - F097

CER/L

External grooving and threading toolholder (The -DT holders can be used either with the insert screw or top-clamp)





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
CER/L123DT	0.039	0.089	0.750	0.750	5.000	0.870	0.750	1.000	GTGN-16...	2.58
CER/L163DT	0.039	0.089	1.000	1.000	6.000	1.000	1.000	1.250	GTGN-16...	2.58
CER203DT	0.039	0.089	1.250	1.250	6.000	1.250	1.250	1.500	GTGN-16...	2.58

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
CER/L1212H16DT	1	2.25	12	12	100	24	12	16	GTGN-16...	3.5
CER/L1616H16DT	1	2.25	16	16	100	24	16	20	GTGN-16...	3.5
CER/L2020K16DT	1	2.25	20	20	125	24	20	25	GTGN-16...	3.5
CER/L2525M16DT	1	2.25	25	25	150	28	25	32	GTGN-16...	3.5
CER3232P16T	1	2.25	32	32	170	32	32	40	GTGN-16...	3.5

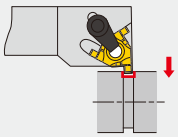
Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the toolholder.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

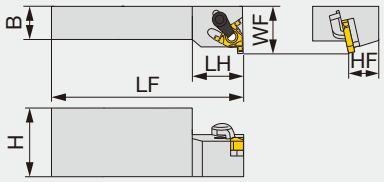
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim screw	*Optional: Shim for grooving	Wrench 1	Wrench 2
CER*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16ER/IL-DT	P-3.5	T-15F
CEL*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
CER3232P16T	CSP16	-	-	G16ER/IR-S	-	T-15F

B-CER/L

External threading and grooving toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
B-CER/L16M16	1	2.25	32	16	150	24	16	22	GTGN-16...	3.5

Note: When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: N·m

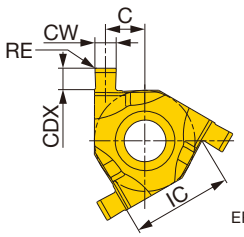
SPARE PARTS

Designation	Clamp set	Clamp screw	Wrench	*Optional: Shim for grooving
B-CER16M16	CSP16	-	T-15F	G16ER/IL-S
B-CEL16M16	CSP16	-	T-15F	G16EL/IR-S

Reference pages: Inserts, Standard cutting conditions → F106

INSERT

GTGN16



ER/IL shown.

P	Steel	★		
M	Stainless	★		
K	Cast iron			
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	HAND (External)	CW±0.03 (mm)	CW±0.001 (in)	RE (in)	Coated SH730	Insert size	CDX (in)	IC (in)	C (in)	Shim: Dual-clamp toolholder: screw-on and clamp-on	Shim: Clamp-on toolholder
GTGN-16ER/IL100	R	1	0.039	0.004	●	16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	L	1	0.039	0.004	●	16	0.049	0.375	0.166	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL120	R	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	L	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL140	R	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	L	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL170	R	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR170	L	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	R	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR195	L	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	R	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR225	L	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S

Note: GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

● : Line up

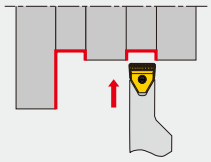
STANDARD CUTTING CONDITIONS

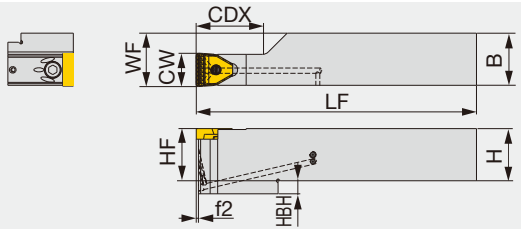
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, 4140, etc.	SH730	164 - 492	0.002 - 0.004
M	Stainless steel 304, 316, etc.	SH730	98 - 394	0.002 - 0.004
S	Heat-resistant alloys, Titanium alloys, etc. Ti-6Al-4V, etc.	SH730	98 - 131	0.002 - 0.004

Reference pages: Toolholders → F105

FPGR

External grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	HBH	f2	Insert (1)	Torque
FPGR16-10T20	0.394	0.787	1.000	1.000	7.000	1.000	1.020	-	0.019	PSG*10...	1.62
FPGR20-10T36	0.394	1.417	1.250	1.250	8.000	1.250	1.270	-	0.019	PSG*10...	1.62
FPGR16-15T20	0.590	0.787	1.000	1.000	7.000	1.000	1.020	-	0.019	PSG*15...	1.62
FPGR20-15T40	0.590	1.574	1.250	1.250	8.000	1.250	1.270	-	0.015	PSG*15...	1.62
FPGR20-20T40	0.787	1.574	1.250	1.250	8.000	1.250	1.270	0.314	0.015	PSG*20...	6.27
FPGR24-20T50	0.787	1.968	1.500	1.500	10.000	1.500	1.520	0.314	0.015	PSG*20...	6.27
FPGR20-25T40	0.984	1.574	1.250	1.250	8.000	1.250	1.270	0.314	0.015	PSG*25...	6.27
FPGR24-25T50	0.984	1.968	1.500	1.500	10.000	1.500	1.520	0.314	0.015	PSG*25...	6.27

Metric	CW	CDX	H	B	LF	HF	WF	HBH	f2	Insert (1)	Torque*
FPGR2525M-10T20	10	20	25	25	150	25	25.5	-	0.5	PSG*10...	2.2
FPGR3232P-10T36	10	36	32	32	170	32	32.5	-	0.5	PSG*10...	2.2
FPGR2525M-15T20	15	20	25	25	150	25	25.5	-	0.5	PSG*15...	2.2
FPGR3232P-15T40	15	40	32	32	170	32	32.5	-	0.4	PSG*15...	2.2
FPGR3232P-20T40	20	40	32	32	170	32	32.5	8	0.4	PSG*20...	8.5
FPGR4040R-20T50	20	50	40	40	200	40	40.5	8	0.4	PSG*20...	8.5
FPGR3232P-25T40	25	40	32	32	170	32	32.5	8	0.4	PSG*25...	8.5
FPGR4040R-25T50	25	50	40	40	200	40	40.5	8	0.4	PSG*25...	8.5

(1) Can be used for both wide grooving and wide profile grooving
Torque: Recommended clamping torque: lbs·ft (*N·m)
CDX, LF, f2 are dimensions when PSGM insert is attached. When mounting PSGB insert, the dimensions will be 0.197" (5 mm) longer.

SPARE PARTS



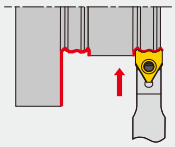


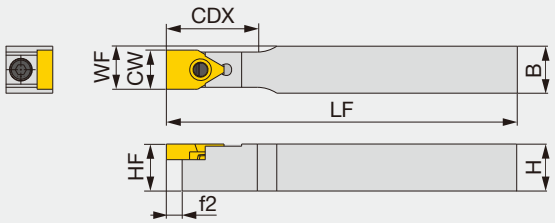

Designation	Lever	Clamping screw	Spring	Wrench
FPGR**-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGR**-20T..., 25T...	FCL8	FCS6	BP-9	P-5

Reference pages: Inserts → F110, F111, Standard cutting conditions → F111

FPGN

External profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque
FPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSG*10...	1.62
FPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSG*10...	1.62
FPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSG*10...	1.62
FPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSG*15...	1.62
FPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSG*15...	1.62
FPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSG*20...	6.27
FPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSG*20...	6.27
FPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSG*25...	6.27

Metric	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque*
FPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSG*10...	2.2
FPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSG*10...	2.2
FPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSG*10...	2.2
FPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSG*15...	2.2
FPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSG*15...	2.2
FPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSG*20...	8.5
FPGN2525M-20T32	20	37	25	25	155	25	22.5	5.5	PSG*20...	8.5
FPGN2525M-25T36	25	41	25	25	155	25	25	5.5	PSG*25...	8.5

PSGB insert blank is available for tailored inserts.
(1) Can be used for both wide grooving and wide profile grooving
Torque: Recommended clamping torque: lbs·ft (*N·m)
CDX, LF, f2 are dimensions when PSGB insert is attached. When mounting PSGM insert, the dimensions will be 0.197" (5 mm) shorter.

SPARE PARTS



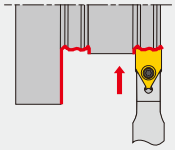


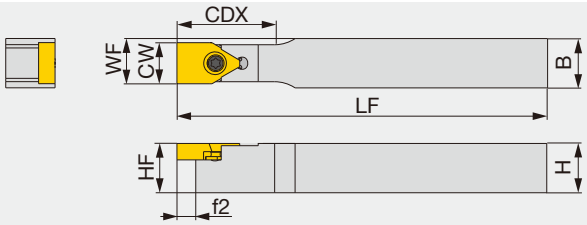

Designation	Lever	Clamping screw	Spring	Wrench
FPGN**-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN**-20T..., 25T...	FCL8	FCS6	BP-9	P-5

Reference pages: Inserts → F110, F111, Standard cutting conditions → F111

SPGN

External profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque
SPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10	0.96
SPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10	0.96
SPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10	0.96
SPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15	2.58
SPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15	2.58
SPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20	3.69
SPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSGB20	3.69
SPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSGB25	3.69

Metric	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque*
SPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10	2.3
SPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10	2.3
SPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10	2.3
SPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15	3.5
SPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15	3.5
SPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20	5
SPGN2525M-20T32	20	37	25	25	155	25	22.5	5.5	PSGB20	5
SPGN2525M-25T36	25	41	25	25	155	25	25	5.5	PSGB25	5

PSGB insert blank is available for tailored inserts.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
SPGN**-10T20	CSTB-3L081	T-8F
SPGN**-15T25	CSTB-4	T-15F
SPGN**-20T..., 25T...	CSTB-5	T-20F

Reference pages: Inserts → F110, F111, Standard cutting conditions → F111

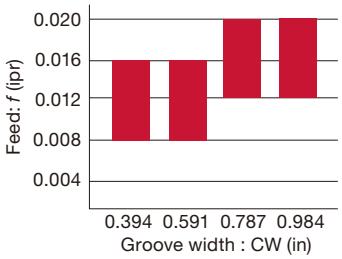
CHIPBREAKER GUIDE

PSGM



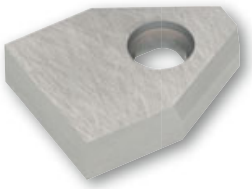
For wide grooving
Improved productivity with excellent chip control and the chipbreaker designed for high feed

CW = 0.394" - 0.984"





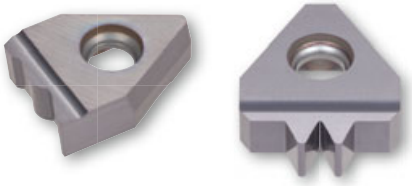
PSGB



Blank for wide profile grooving inserts
Can be prepared for various insert shapes Shortened cutting time and improved productivity with one-pass operations

CW = 0.394" - 0.984"

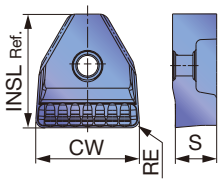
Specially tailored inserts (example)





INSERTS

PSGM



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

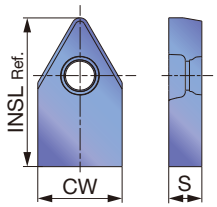
Designation	CW* (mm)	CW** (in)	RE (in)	Coated AH725	INSL (in)	S (in)
PSGM10-08	10	0.394	0.031	●	0.433	0.157
PSGM15-15	15	0.591	0.059	●	0.591	0.197
PSGM20-20	20	0.787	0.079	●	0.866	0.256
PSGM25-20	25	0.984	0.079	●	0.866	0.256

*Tolerance: CW ± 0.08 mm (CW = 10 mm), ± 0.1 mm (CW ≥ 15 mm)
**Tolerance: CW ± 0.003" (CW = 0.394"), ± 0.004" (CW ≥ 0.591")

● : Line up

Reference pages: Toolholders → F107 - F109

PSGB



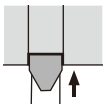
P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	CW±0.025 (mm)	CW±0.001 (in)	Uncoated TH10	Uncoated UX30	INSL (in)	S (in)
PSGB10	10.2	0.402	●	●	0.709	0.157
PSGB15	15.2	0.598	●	●	0.787	0.197
PSGB20	20.2	0.795	●	●	1.063	0.256
PSGB25	25.2	0.992	●	●	1.063	0.256

● : Line up

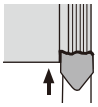
STANDARD CUTTING CONDITIONS



Wide grooving (PSGM insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Alloy steel 4140, etc.	< 300	AH725	164 - 591

	Groove width: CW (in) 0.394	0.591	0.787	0.984
Feed: *f* (ipr)	0.008 - 0.016	0.008 - 0.016	0.012 - 0.020	0.012 - 0.020

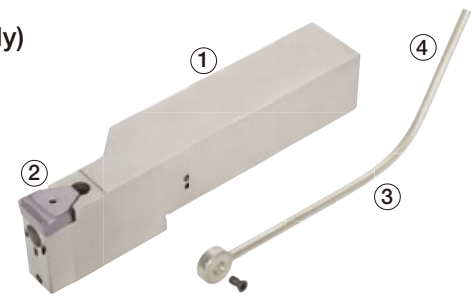


Wide profile grooving (PSGB insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Carbon steel 1045, etc.	< 200	UX30	164 - 492
	Alloy steel 4140, etc.	< 300	UX30	164 - 394
M	Stainless steel 303, etc.	< 200	UX30	164 - 394
K	Gray cast iron No.250B, etc.	-	TH10	164 - 492
	Ductile cast irons 65-45-12, etc.	-	TH10	164 - 394
N	Aluminum alloy Si < 12%, etc.	-	TH10	328 - 1640

Spare parts for internal coolant supply attachment (Order separately)

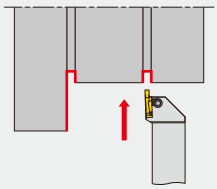
No.	Parts name	Designation	Note
①	Body	FPGR...	-
②	Insert	PSGM...	-
③	Coolant supply attachment	SGCU-341	-
④	Connector	Commercial items can be used	G 1/8 thread
			NPT 1/8 thread

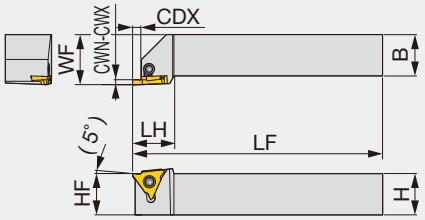


Reference pages: Toolholders → F107 - F109

TGTSR/L

External grooving toolholder, for 3 corner insert







Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque
TGTSR16-3	0.013	0.100	0.110	1.00	1.00	6	0.98	1.00	1.00	2.21
TGTSR16-4-1	0.040	0.057	0.100	1.00	1.00	6	1.00	1.00	1.00	2.21
TGTSR16-4-2	0.060	0.090	0.160	1.00	1.00	6	1.00	1.00	1.00	2.21
TGTSR16-4-3	0.100	0.180	0.210	1.00	1.00	6	1.00	1.00	1.00	2.21

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque*
TGTSR/L2020K16	0.33	2.5	2.5	20	20	125	25	20	25	3
TGTSR/L2525M16	0.33	2.5	2.5	25	25	150	25	25	30	3
TGTSR/L2020K22-1	1	1.45	2	20	20	125	25	20	25	3
TGTSR/L2020K22-2	1.5	2.3	3.5	20	20	125	25	20	25	3
TGTSR/L2020K22-3	2.5	4.5	5	20	20	125	25	20	25	3
TGTSR/L2525M22-1	1	1.45	2	25	25	150	25	25	30	3
TGTSR/L2525M22-2	1.5	2.3	3.5	25	25	150	25	25	30	3
TGTSR/L2525M22-3	2.5	4.5	5	25	25	150	25	25	30	3

Use right-hand toolholders (TGTSR) with right-hand inserts (GBR); and left-hand toolholders (TGTSL) with left-hand inserts (GBL).
Torque: Recommended clamping torque: lbs·ft (*N·m)
See below insert table.

Designation	Insert
TGTSR16-3	GBR/L32...
TGTSR16-4-1	GBR43050R ~ 145
TGTSR16-4-2	GBR43150 ~ 230
TGTSR16-4-3	GBR43250 ~ 450
TGTSR/L2020K16	GBR/L32...
TGTSR/L2525M16	GBR/L32...
TGTSR/L2020K22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2020K22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2020K22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R
TGTSR/L2525M22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2525M22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2525M22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R

SPARE PARTS



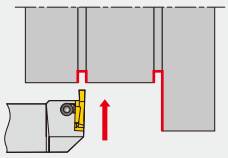


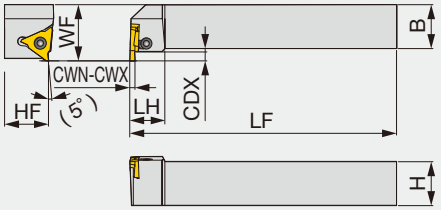
Designation	Clamp	Clamping screw	Wrench
TGTSR16-3	CP900	MCS520-2.5	P-2.5
TGTSR16-4...	CP910	MCS520-2.5	P-2.5
TGTSR/L*****16	CP900	MCS520-2.5	P-2.5
TGTSR/L*****22...	CP910	MCS520-2.5	P-2.5

Reference pages: Inserts → F114 - F116, Standard cutting conditions → F116

TGTTR/L

External grooving with tangential pocket, for 3 corner insert







Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque
TGTTR/L2020K16	0.33	2.5	2.5	20	20	125	20	20	27	3
TGTTR/L2525M16	0.33	2.5	2.5	25	25	150	20	25	32	3
TGTTR/L2020K22-1	1	1.45	2	20	20	125	20	20	27	3
TGTTR/L2020K22-2	1.5	2.3	3.5	20	20	125	20	20	27	3
TGTTR/L2020K22-3	2.5	4.5	5	20	20	125	20	20	27	3
TGTTR/L2525M22-1	1	2.3	2	25	25	150	20	25	32	3
TGTTR/L2525M22-2	1.5	2.3	3.5	25	25	150	20	25	32	3
TGTTR/L2525M22-3	2.5	4.5	5	25	25	150	20	25	32	3

Use right-hand toolholders (TGTTR) with left-hand inserts (GBL); and left-hand toolholders (TGTTL) with right-hand inserts (GBR).
Torque: Recommended clamping torque: N·m
See below insert table.

Designation	Insert
TGTTR/L2020K16	GBL/R32...
TGTTR/L2525M16	GBL/R32...
TGTTR/L2020K22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2020K22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2020K22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R
TGTTR/L2525M22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2525M22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2525M22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R

SPARE PARTS

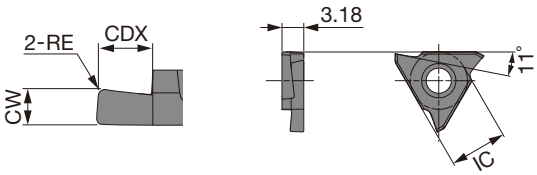




Designation	Clamp	Clamping screw	Wrench
TGTTR/L*****16	CP900	MCS520-2.5	P-2.5
TGTTR/L*****22...	CP910	MCS520-2.5	P-2.5

Reference pages: Inserts → F114 - F116, Standard cutting conditions → F116

GBR/L32



Right hand (R) shown.
Unit: mm

		Coated		Cermet		Uncoated
P	Steel	★		★		
M	Stainless	★				
K	Cast iron	★		☆		
N	Non-ferrous					★
S	Superalloys	☆				☆
H	Hard materials					

★ : First choice
☆ : Second choice

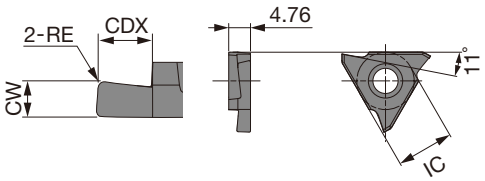
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710	NS9530	KS05F	CDX (in)	IC (mm)
GBR32033	R	0.33	0.013	0.0012	●	●	●	0.031	9.53
GBL32033	L	0.33	0.013	0.0012	●			0.031	9.53
GBR32050	R	0.5	0.020	0.002	●	●	●	0.047	9.53
GBL32050	L	0.5	0.020	0.002	●			0.047	9.53
GBR32075	R	0.75	0.030	0.002	●	●	●	0.079	9.53
GBL32075	L	0.75	0.030	0.002	●	●		0.079	9.53
GBR32095	R	0.95	0.037	0.002	●	●	●	0.079	9.53
GBL32095	L	0.95	0.037	0.002	●	●		0.079	9.53
GBR32100	R	1	0.039	0.002	●	●	●	0.079	9.53
GBL32100	L	1	0.039	0.002	●	●		0.079	9.53
GBR32125	R	1.25	0.049	0.008	●	●	●	0.079	9.53
GBL32125	L	1.25	0.049	0.008	●	●		0.079	9.53
GBR32145	R	1.45	0.057	0.008	●	●	●	0.079	9.53
GBL32145	L	1.45	0.057	0.008	●			0.079	9.53
GBR32150	R	1.5	0.059	0.008	●	●	●	0.079	9.53
GBL32150	L	1.5	0.059	0.008	●			0.079	9.53
GBR32200	R	2	0.079	0.008	●	●	●	0.098	9.53
GBL32200	L	2	0.079	0.008	●			0.098	9.53
GBR32250	R	2.5	0.098	0.008	●	●	●	0.098	9.53
GBL32250	L	2.5	0.098	0.008	●			0.098	9.53

● : Line up

External
Internal
Face
Parting
Others

Reference pages: Toolholders → F112, F113, Standard cutting conditions → F116

GBR/L43



Right hand (R) shown.
Unit: mm

		Coated		Cermet		Uncoated
P	Steel	★		★		
M	Stainless	★				
K	Cast iron	★		☆		
N	Non-ferrous					★
S	Superalloys	☆				☆
H	Hard materials					

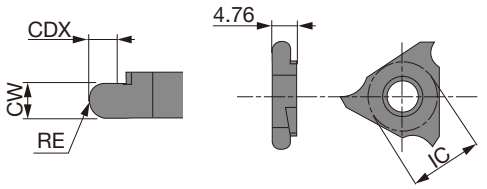
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710	NS9530	KS05F	CDX (in)	IC (mm)
GBR43125	R	1.25	0.049	0.008	●	●	●	0.079	12.7
GBL43125	L	1.25	0.049	0.008	●			0.079	12.7
GBR43145	R	1.45	0.057	0.008	●	●	●	0.079	12.7
GBL43145	L	1.45	0.057	0.008	●			0.079	12.7
GBR43150	R	1.50	0.059	0.008	●	●	●	0.138	12.7
GBL43150	L	1.50	0.059	0.008	●	●		0.138	12.7
GBR43175	R	1.75	0.069	0.008	●	●	●	0.138	12.7
GBL43175	L	1.75	0.069	0.008	●	●		0.138	12.7
GBR43185	R	1.85	0.073	0.008	●	●	●	0.138	12.7
GBL43185	L	1.85	0.073	0.008	●	●		0.138	12.7
GBR43200	R	2	0.079	0.008	●	●	●	0.138	12.7
GBL43200	L	2	0.079	0.008	●	●		0.138	12.7
GBR43230	R	2.3	0.091	0.008	●	●	●	0.138	12.7
GBL43230	L	2.3	0.091	0.008	●	●		0.138	12.7
GBR43250	R	2.5	0.098	0.012	●	●	●	0.197	12.7
GBL43250	L	2.5	0.098	0.012	●			0.197	12.7
GBR43265	R	2.65	0.104	0.012	●	●	●	0.197	12.7
GBL43265	L	2.65	0.104	0.012	●			0.197	12.7
GBR43280	R	2.8	0.110	0.012	●	●	●	0.197	12.7
GBL43280	L	2.8	0.110	0.012	●			0.197	12.7
GBR43300	R	3	0.118	0.012	●	●	●	0.197	12.7
GBL43300	L	3	0.118	0.012	●			0.197	12.7
GBR43330	R	3.3	0.130	0.012	●	●	●	0.197	12.7
GBL43330	L	3.3	0.130	0.012	●			0.197	12.7
GBR43350	R	3.5	0.138	0.012	●	●	●	0.197	12.7
GBL43350	L	3.5	0.138	0.012	●			0.197	12.7
GBR43400	R	4	0.157	0.016	●	●	●	0.197	12.7
GBL43400	L	4	0.157	0.016	●			0.197	12.7
GBR43430	R	4.3	0.169	0.016	●	●	●	0.197	12.7
GBL43430	L	4.3	0.169	0.016	●			0.197	12.7
GBR43450	R	4.5	0.177	0.016	●	●	●	0.197	12.7
GBL43450	L	4.5	0.177	0.016	●			0.197	12.7

● : Line up

Reference pages: Toolholders → F112, F113, Standard cutting conditions → F116

GBR/L43-R(full radius)



Right hand (R) shown.
Unit: mm

P	Steel	★				★													
M	Stainless	★																	
K	Cast iron	★				☆													
N	Non-ferrous									★									
S	Superalloys	☆								☆									
H	Hard materials																		

★ : First choice
☆ : Second choice

External
Internal
Face
Parting
Others

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated			Cermet			Uncoated					CDX (in)	IC (mm)
					AH710			NS9530			KS05F						
GBR43050R	R	1	0.039	0.020	●			●			●					0.079	12.7
GBL43050R	L	1	0.039	0.020	●						●					0.079	12.7
GBR43075R	R	1.5	0.059	0.030	●			●			●					0.138	12.7
GBL43075R	L	1.5	0.059	0.030	●						●					0.138	12.7
GBR43100R	R	2	0.079	0.039	●			●			●					0.138	12.7
GBL43100R	L	2	0.079	0.039	●						●					0.138	12.7
GBR43125R	R	2.5	0.098	0.049	●			●			●					0.197	12.7
GBL43125R	L	2.5	0.098	0.049	●						●					0.197	12.7
GBR43150R	R	3	0.118	0.059	●			●			●					0.197	12.7
GBL43150R	L	3	0.118	0.059	●						●					0.197	12.7
GBR43200R	R	4	0.157	0.079	●			●			●					0.197	12.7
GBL43200R	L	4	0.157	0.079	●						●					0.197	12.7

● : Line up

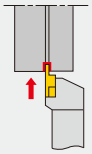
STANDARD CUTTING CONDITIONS

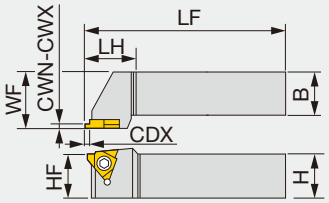
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steels, Alloy steels 1045, etc. 4140, etc.	150 - 240HB	NS9530	328 - 656	0.001 - 0.010
		150 - 240HB	AH710	197 - 492	0.002 - 0.010
M	Stainless steel 304, etc.	≤ 240HB	AH710	197 - 492	0.002 - 0.006
K	Cast irons No.250B, etc.	Tensile strength ≤ 350 N/mm^2	AH710	197 - 492	0.002 - 0.006
N	Non-ferrous metal Aluminum, etc.	-	KS05F	656 - 984	0.002 - 0.006

Reference pages: Toolholders → F112, F113

SGTR/L

External grooving toolholder, for 3 corner inserts





Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
SGTR1616-3	1.15	2.7	1.5 - 3	16	16	100	20	16	20	GLR/L3...	3.5
SGTR/L2020-3	1.15	2.7	1.5 - 3	20	20	125	20	20	25	GLR/L3...	3.5
SGTR/L2525-3	1.15	2.7	1.5 - 3	25	25	150	20	25	32	GLR/L3...	3.5
SGTR/L2020-4	1.15	4.2	1.5 - 4	20	20	125	30	20	25	GLR/L4...,GOR/L4...	5
SGTR/L2525-4	1.15	4.2	1.5 - 4	25	25	150	30	25	32	GLR/L4...,GOR/L4...	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

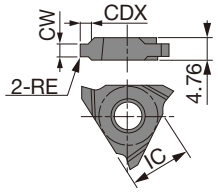




Designation	Clamping screw	Wrench
SGTR/L****-3	CSTB-4	T-15F
SGTR/L****-4	CSTB-5	T-20F

INSERTS

GOR/L (For O-ring)



Right hand (R) shown.
Unit: mm

P	Steel	★				★						
M	Stainless					★						
K	Cast iron	☆										
N	Non-ferrous											
S	Superalloys											
H	Hard materials											

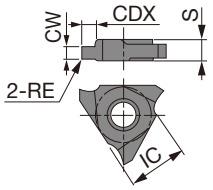
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.004}_{+0.002}$ (in)	$CW^{+0.1}_{+0.05}$ (mm)	RE (mm)	Cermet	Uncoated					CDX (mm)	IC (mm)
					NS9530	UX30						
GOR4190	R	0.098	2.5	0.4	●	●					1.5	12.7
GOR4240	R	0.126	3.2	0.4	●	●					2	12.7
GOR4310	R	0.161	4.1	0.7	●	●					2.5	12.7

● : Line up

Reference pages: Inserts → F117, F118, Standard cutting conditions → F118

GLR/L (For lock ring)



Right hand (R) shown.

		Cermet	Uncoated
P	Steel	★	★
M	Stainless		★
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.004}_{+0.002}$ (in)	CW$^{+0.1}_{+0.05}$ (mm)	RE (mm)	NS9530	UX30	CDX (mm)	IC (mm)	S (mm)
GLR3115	R	0.045	1.15	0.1	●	●	1.5	9.53	3.18
GLL3115	L	0.045	1.15	0.1	●	●	1.5	9.53	3.18
GLR3135	R	0.053	1.35	0.1	●	●	1.5	9.53	3.18
GLL3135	L	0.053	1.35	0.1	●		1.5	9.53	3.18
GLR3165	R	0.065	1.65	0.1	●	●	2	9.53	3.18
GLR3175	R	0.069	1.75	0.1	●	●	2	9.53	3.18
GLL3175	L	0.069	1.75	0.1	●	●	2	9.53	3.18
GLR3195	R	0.077	1.95	0.1	●	●	2.5	9.53	3.18
GLL3195	L	0.077	1.95	0.1	●	●	2.5	9.53	3.18
GLR3220	R	0.087	2.2	0.1	●	●	3	9.53	3.18
GLL3220	L	0.087	2.2	0.1		●	3	9.53	3.18
GLR3270	R	0.106	2.7	0.1	●	●	3	9.53	3.18
GLL3270	L	0.106	2.7	0.1		●	3	9.53	3.18
GLR4115	R	0.045	1.15	0.1	●	●	1.5	12.7	4.76
GLR4135	R	0.053	1.35	0.1	●	●	1.5	12.7	4.76
GLR4165	R	0.065	1.65	0.1	●	●	2	12.7	4.76
GLR4175	R	0.069	1.75	0.1	●	●	2	12.7	4.76
GLR4190	R	0.075	1.9	0.1	●		2.5	12.7	4.76
GLR4195	R	0.077	1.95	0.1	●	●	2.5	12.7	4.76
GLR4220	R	0.087	2.2	0.1	●	●	3.5	12.7	4.76
GLL4220	L	0.087	2.2	0.1		●	3.5	12.7	4.76
GLR4270	R	0.106	2.7	0.1	●	●	3.5	12.7	4.76
GLR4320	R	0.126	3.2	0.1	●	●	4	12.7	4.76
GLL4320	L	0.126	3.2	0.1		●	4	12.7	4.76
GLR4420	R	0.165	4.2	0.1	●	●	4	12.7	4.76
GLL4420	L	0.165	4.2	0.1		●	4	12.7	4.76

● : Line up

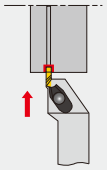
STANDARD CUTTING CONDITIONS

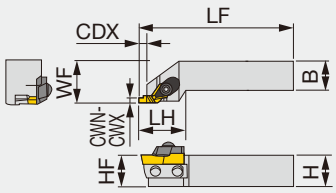
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010

Reference pages: Toolholders → F117

GX-R/LE

External grooving toolholder, for 2 corner inserts





Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-1212REU	0.039	0.177	0.059 - 0.236	0.75	0.75	5.00	1.38	0.75	1.00	XGR63...	3.69
GX-1616REU	0.039	0.177	0.059 - 0.236	1.00	1.00	5.90	1.38	1.00	1.25	XGR63...	3.69

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2020R/LE	1	4.5	1.5 - 6	20	20	125	40	20	25	XGR/L63...	5
GX-2525R/LE	1	4.5	1.5 - 6	25	25	150	38	25	32	XGR/L63...	5

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...); and left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

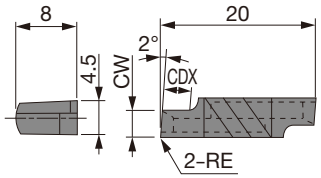
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-1212REU, GX-2020RE	CP81A	RT-1	SL-6R	BHM4-8	P-4
GX-2020LE	CP81A	RT-1	SL-6L	BHM4-8	P-4
GX-1616REU, GX-2525RE	CP81A	RT-1	SL-1R	BHM4-8	P-4
GX-2525LE	CP81A	RT-1	SL-1L	BHM4-8	P-4

Note: Max. groove width and max. groove depth will depend on the insert type.

INSERTS

XGR/L



Right hand (R) shown.
Unit: mm

		Cermet	Uncoated										
P	Steel	★			☆	★							
M	Stainless					★							
K	Cast iron	☆			★								
N	Non-ferrous				★								
S	Superalloys				☆								
H	Hard materials												

★ : First choice
☆ : Second choice

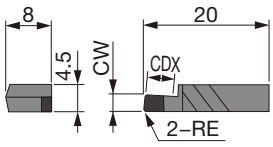
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (in)
XGR6310-02	R	1	0.039	0.008	●	●	●	0.059
XGL6310-02	L	1	0.039	0.008	●	●	●	0.059
XGR6315-02	R	1.5	0.059	0.008	●	●	●	0.091
XGL6315-02	L	1.5	0.059	0.008	●	●	●	0.091
XGR6320-02	R	2	0.079	0.008	●	●	●	0.118
XGL6320-02	L	2	0.079	0.008	●	●	●	0.118
XGR6325-02	R	2.5	0.098	0.008	●	●	●	0.150
XGL6325-02	L	2.5	0.098	0.008	●	●	●	0.150
XGR6330-02	R	3	0.118	0.008	●	●	●	0.177
XGL6330-02	L	3	0.118	0.008	●	●	●	0.177
XGR6335-02	R	3.5	0.138	0.008	●	●	●	0.209
XGL6335-02	L	3.5	0.138	0.008	●	●	●	0.209
XGR6340-02	R	4	0.157	0.008	●	●	●	0.236
XGL6340-02	L	4	0.157	0.008	●	●	●	0.236
XGR6345-02	R	4.5	0.177	0.008	●	●	●	0.236
XGL6345-02	L	4.5	0.177	0.008	●	●	●	0.236

● : Line up

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

Reference pages: Inserts → F119, F120, Standard cutting conditions → F120

XGR/L-QBN



Right hand (R) shown.
Unit: mm

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	CBN	CDX (in)
					BX360	
XGL6310S-QBN	L	1	0.039	0.008	●	0.059
XGR6315S-QBN	R	1.5	0.059	0.008	●	0.091
XGL6315S-QBN	L	1.5	0.059	0.008	●	0.091
XGR6320S-QBN	R	2	0.079	0.008	●	0.118
XGL6320S-QBN	L	2	0.079	0.008	●	0.118
XGR6325S-QBN	R	2.5	0.098	0.008	●	0.150
XGL6325S-QBN	L	2.5	0.098	0.008	●	0.150
XGR6330S-QBN	R	3	0.118	0.008	●	0.177
XGL6330S-QBN	L	3	0.118	0.008	●	0.177
XGR6335S-QBN	R	3.5	0.138	0.008	●	0.209
XGL6335S-QBN	L	3.5	0.138	0.008	●	0.209
XGR6340S-QBN	R	4	0.157	0.008	●	0.236
XGL6340S-QBN	L	4	0.157	0.008	●	0.236
XGR6345S-QBN	R	4.5	0.177	0.008	●	0.236
XGL6345S-QBN	L	4.5	0.177	0.008	●	0.236

● : Line up

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

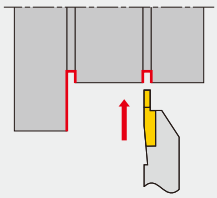
STANDARD CUTTING CONDITIONS

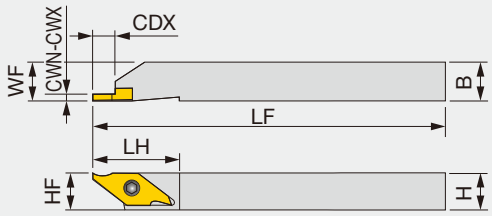
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons , Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
H	Hardened steels	BX360	164 - 591	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006

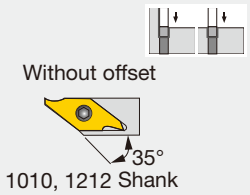
Reference pages: Toolholders → F119

JSVGR/L

External grooving toolholder, for Swiss lathes







Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSVGR/L062.5	0.013	0.079	0.028 - 0.217	0.375	0.375	5	0.875	0.375	0.375	JVGR/L...	1.70
JSVGR/L082.5	0.013	0.079	0.028 - 0.217	0.500	0.500	5	0.875	0.500	0.500	JVGR/L...	1.70
JSVGR/L102.5	0.013	0.079	0.028 - 0.217	0.625	0.625	5	0.875	0.625	0.625	JVGR/L...	1.70

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	0.7 - 5.5	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	0.7 - 5.5	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	0.7 - 5.5	16	16	125	23	16	16	JVGR/L...	2.3

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

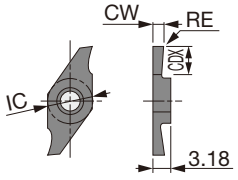




Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVGR/L...	CSTB-3S	T-9F	(T-9L)

INSERT

JVG (with hand, sharp edge)



Right hand (R) shown.
Unit: mm

		Coated			Cermet	Uncoated					
P	Steel	★	★		★	☆					
M	Stainless	★	★								
K	Cast iron				☆	☆					
N	Non-ferrous					★					
S	Superalloys					★					
H	Hard materials										

★ : First choice
☆ : Second choice

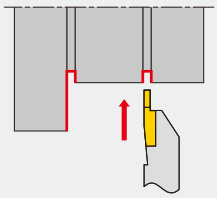
Designation	HAND	CW$^{+0.05}_{0}$ (mm)	CW$^{+0.002}_{0}$ (in)	RE (in)	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	CDX (in)	IC (mm)
JVGR033F	R	0.33	0.013	0	●	●		●	0.028	7.94
JVGL033F	L	0.33	0.013	0	●				0.028	7.94
JVGR050F	R	0.5	0.020	0	●	●		●	0.043	7.94
JVGL050F	L	0.5	0.020	0	●				0.043	7.94
JVGR075F	R	0.75	0.030	0	●	●		●	0.075	7.94
JVGL075F	L	0.75	0.030	0	●				0.075	7.94
JVGR095F	R	0.95	0.037	0	●	●		●	0.075	7.94
JVGL095F	L	0.95	0.037	0	●				0.075	7.94
JVGR100F	R	1	0.039	0	●	●	●	●	0.217	7.94
JVGL100F	L	1	0.039	0	●		●	●	0.217	7.94
JVGR125F	R	1.25	0.049	0	●	●		●	0.197	7.94
JVGL125F	L	1.25	0.049	0	●				0.197	7.94
JVGR150F	R	1.5	0.059	0	●	●	●	●	0.217	7.94
JVGL150F	L	1.5	0.059	0	●		●	●	0.217	7.94
JVGR200F	R	2	0.079	0	●	●	●	●	0.217	7.94
JVGL200F	L	2	0.079	0	●				0.217	7.94

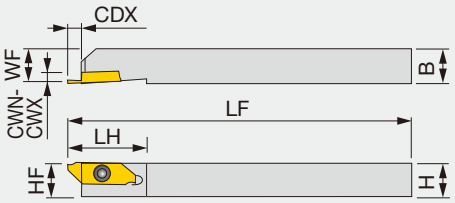
● : Line up

Reference pages: Standard cutting conditions → F128

JSXGR/L

Screw-on toolholder for front turning, reverse turning, and external grooving, for Swiss lathes







Without offset



1010, 1212 Shank

Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSXGR/L1010K8-C	0.7	2	4.5 - 6	10	10	125	29	10	9.9	JXG...	1.3
JSXGR/L1212K8-C	0.7	2	4.5 - 6	12	12	125	29	12	11.9	JXG...	1.3
JSXGR/L1616K8	0.7	2	4.5 - 6	16	16	125	29	16	15.9	JXG...	1.3
JSXGR/L2020K8	0.7	2	4.5 - 6	20	20	125	29	20	19.9	JXG...	1.3
JSXGR/L2525K8	0.7	2	4.5 - 6	25	25	125	29	25	24.9	JXG...	1.3

Can be wrenched also from the back with a double-head screw.
This toolholder can be used for JXF front-turning insert, JXR reverse-turning insert, and JXG parting and grooving insert.
Torque: Recommended clamping torque: N·m

SPARE PARTS

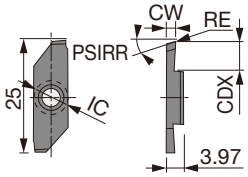




Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSXGR/L...	CSTB-4SD	T-8F	(T-8L)

INSERT

JXG (with hand, sharp edge)



Right hand (R) shown.
Unit: mm

		Coated	Uncoated
P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

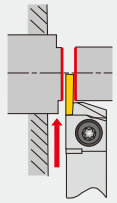
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated J740	Uncoated TH10	CDX (mm)	IC (mm)	PSIRR
JXGR8070FA	R	0.028	0.7	0	●	●	4.5	8	15°
JXGL8070FA	L	0.028	0.7	0	●	●	4.5	8	15°
JXGR8070FA-005	R	0.028	0.7	0.05	●		4.5	8	15°
JXGR8100FA	R	0.039	1	0	●	●	6	8	15°
JXGL8100FA	L	0.039	1	0	●	●	6	8	15°
JXGR8100FA-005	R	0.039	1	0.05	●		6	8	15°
JXGR8100FA45	R	0.039	1	0	●	●	4.5	8	15°
JXGR8100FA45-005	R	0.039	1	0.05	●		4.5	8	15°
JXGR8150FA	R	0.059	1.5	0	●	●	6	8	15°
JXGL8150FA	L	0.059	1.5	0	●	●	6	8	15°
JXGR8150FA-005	R	0.059	1.5	0.05	●		6	8	15°
JXGR8150FA50	R	0.059	1.5	0	●	●	5	8	15°
JXGR8150FA50-005	R	0.059	1.5	0.05	●		5	8	15°
JXGR8180FA	R	0.071	1.8	0	●	●	6	8	15°
JXGR8180FA-005	R	0.071	1.8	0.05	●		6	8	15°
JXGR8200FA	R	0.079	2	0	●	●	6	8	15°
JXGL8200FA	L	0.079	2	0	●	●	6	8	15°
JXGR8200FA-005	R	0.079	2	0.05	●		6	8	15°
JXGR8200FN	R	0.079	2	0	●	●	6	8	0°
JXGL8200FN	L	0.079	2	0	●	●	6	8	0°
JXGR8200FN-005	R	0.079	2	0.05	●		6	8	0°

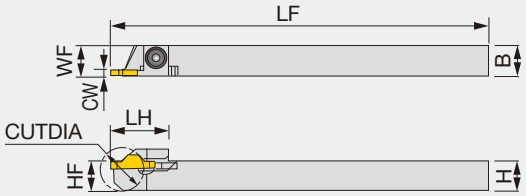
● : Line up

Reference pages: Standard cutting conditions → F128

JCCWSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Inch	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCCWSR/L062	0.079	0.787	0.375	0.375	5	0.748	0.375	0.1875	JCC*200...	2.58
JCCWSR/L082	0.079	0.787	0.500	0.500	5	0.748	0.500	0.250	JCC*200...	2.58
JCCWSR/L102	0.079	0.787	0.625	0.625	5	0.748	0.625	0.3125	JCC*200...	2.58

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque*
JCCWSR/L1010K2	2	20	10	10	125	19	10	10	JCC*200...	3.5
JCCWSR/L1212K2	2	20	12	12	125	19	12	12	JCC*200...	3.5
JCCWSR/L1616K2	2	20	16	16	125	19	16	16	JCC*200...	3.5
JCCWSR/L2020K2	2	20	20	20	125	19	20	20	JCC*200...	3.5
JCCWSR/L2525K2	2	20	25	25	125	19	25	25	JCC*200...	3.5

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

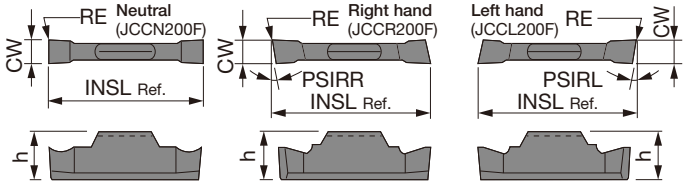




Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JCCWSR/L...	CSTB-4S	T-15F	(T-15L)

INSERT

JCC (Sharp edge)



P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

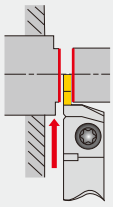
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated	Uncoated	INSL (mm)	h (mm)	PSIRL	PSIRR
					J740	TH10				
JCCN200F	N	2	0.079	0	●	●	15	4.8	0°	0°
JCCN200F-005	N	2	0.079	0.002	●		15	4.8	0°	0°
JCCR200F	R	2	0.079	0	●	●	15	4.8	0°	15°
JCCL200F	L	2	0.079	0	●	●	15	4.8	15°	0°
JCCR200F-005	R	2	0.079	0.002	●		15	4.8	0°	15°
JCCL200F-005	L	2	0.079	0.002	●		15	4.8	15°	0°

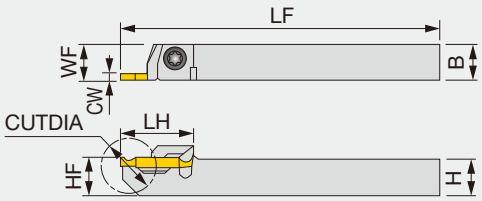
● : Line up

Reference pages: Standard cutting conditions → F128

JCGWSR/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCGWSR/L1010K2	2	20	10	10	125	20	10	10	JCGN200F...	3.5
JCGWSR/L1212K2	2	20	12	12	125	20	12	12	JCGN200F...	3.5
JCGWSR/L1616K2	2	20	16	16	125	20	16	16	JCGN200F...	3.5

Torque: Recommended clamping torque: N·m

SPARE PARTS

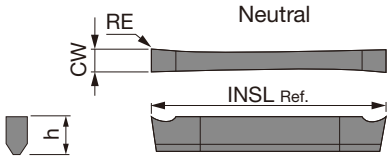


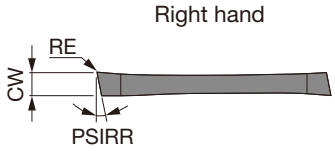


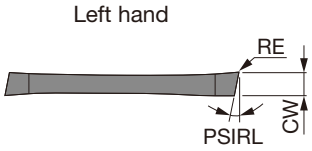
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JCGWSR/L...	CSTB-4S	T-15F	(T-15L)

INSERT

JCGN (Sharp edge)







		Coated	Uncoated
P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

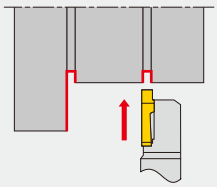
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated J740	Uncoated TH10	INSL (mm)	h (mm)	PSIRL	PSIRR
JCGN200F	N	0.079	2	0.05	●	●	20	3	0°	0°
JCGN200FR	R	0.079	2	0.05	●	●	20	3	0°	8°
JCGN200FL	L	0.079	2	0.05	●	●	20	3	8°	0°

● : Line up

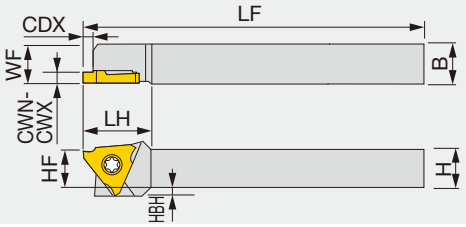
Reference pages: Standard cutting conditions → F128

JSTGR/L

External grooving toolholder, for Swiss lathes



Can be wrenched also from the back with a double-head screw



Right hand (R) shown.

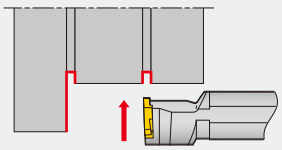
Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
JSTGR/L063	0.013	0.118	0.028 - 0.102	0.375	0.375	5	0.75	0.375	0.375	0.100	JTGR/L3...	0.89
JSTGR/L083	0.013	0.118	0.028 - 0.102	0.500	0.500	5	0.75	0.500	0.500	-	JTGR/L3...	0.89
JSTGR/L103	0.013	0.118	0.028 - 0.102	0.625	0.625	5	0.75	0.625	0.625	-	JTGR/L3...	0.89

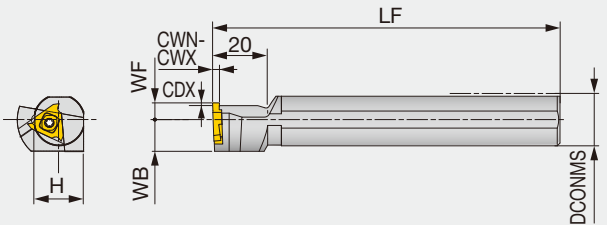
Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	0.7 - 2.6	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	0.7 - 2.6	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	0.7 - 2.6	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	0.7 - 2.6	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	0.7 - 2.6	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)

JS-TGL3

External grooving toolholder, for Swiss lathes





Left hand (L) shown.
Unit: mm

Metric	CWN	CWX	CDX	DCONMS	H	B	LF	WF	WB	Insert	Torque
JS19K-TGL3	0.33	3	0.7 - 2.6	19.05	18	18	125	6	11.5	JTGR3...	3
JS20K-TGL3	0.33	3	0.7 - 2.6	20	19	19	125	6	11.5	JTGR3...	3
JS22K-TGL3	0.33	3	0.7 - 2.6	22	21	21	125	6	11.5	JTGR3...	3
JS25K-TGL3	0.33	3	0.7 - 2.6	25.4	24	24	125	10	12.7	JTGR3...	3

Note: Use left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: N·m

SPARE PARTS

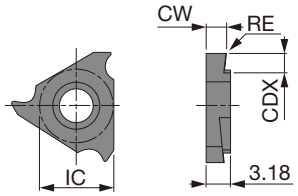




Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSTGR/L...	CSTB-4SD	T-8F	(T-8L)
JS***-TGL3	CSTB-4S	T-15F	-

Reference pages: Inserts → F126, F127, Standard cutting conditions → F128

JTG (Sharp edge)



Right hand (R) shown.
Unit: mm

P	Steel	★	★			★			☆										
M	Stainless	★	★																
K	Cast iron					☆			★										
N	Non-ferrous								★										
S	Superalloys								★										
H	Hard materials																		

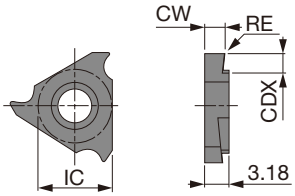
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	Coated				Cermet				Uncoated				CDX (in)	IC (mm)
					SH725	J740			NS9530				TH10					
JTGR3033F	R	0.33	0.013	0.0012	●	●							●				0.028	9.53
JTGL3033F	L	0.33	0.013	0.0012		●							●				0.028	9.53
JTGR3033F-005	R	0.33	0.013	0.002	●												0.028	9.53
JTGR3043F	R	0.43	0.017	0.0012		●											0.043	9.53
JTGR3050F	R	0.5	0.020	0.0012	●	●			●				●				0.043	9.53
JTGL3050F	L	0.5	0.020	0.0012	●	●							●				0.043	9.53
JTGR3050F-005	R	0.5	0.020	0.002	●												0.043	9.53
JTGL3050F-005	L	0.5	0.020	0.002	●												0.043	9.53
JTGR3065F	R	0.65	0.026	0.0012	●	●											0.075	9.53
JTGR3065F-010	R	0.65	0.026	0.004	●												0.075	9.53
JTGR3075F	R	0.75	0.030	0.0012	●	●			●				●				0.075	9.53
JTGL3075F	L	0.75	0.030	0.0012	●	●			●				●				0.075	9.53
JTGR3075F-010	R	0.75	0.030	0.004	●												0.075	9.53
JTGL3075F-010	L	0.75	0.030	0.004	●												0.075	9.53
JTGR3080F	R	0.8	0.031	0.0012	●	●											0.075	9.53
JTGR3080F-010	R	0.8	0.031	0.004	●												0.075	9.53
JTGR3085F	R	0.85	0.033	0.0012	●	●											0.075	9.53
JTGR3095F	R	0.95	0.037	0.0012	●	●			●				●				0.075	9.53
JTGL3095F	L	0.95	0.037	0.0012	●	●							●				0.075	9.53
JTGR3095F-010	R	0.95	0.037	0.004	●												0.075	9.53
JTGL3095F-010	L	0.95	0.037	0.004	●												0.075	9.53
JTGR3100F	R	1	0.039	0.002	●	●			●				●				0.083	9.53
JTGL3100F	L	1	0.039	0.002	●	●							●				0.083	9.53
JTGR3100F-010	R	1	0.039	0.004	●												0.083	9.53
JTGL3100F-010	L	1	0.039	0.004	●												0.083	9.53
JTGR3110F	R	1.1	0.043	0.002	●	●											0.083	9.53
JTGR3120F	R	1.2	0.047	0.002	●	●											0.083	9.53
JTGR3120F-010	R	1.2	0.047	0.004	●												0.083	9.53
JTGR3125F	R	1.25	0.049	0.002	●	●			●				●				0.083	9.53
JTGL3125F	L	1.25	0.049	0.002	●	●							●				0.083	9.53
JTGR3125F-010	R	1.25	0.049	0.004	●												0.083	9.53
JTGL3125F-010	L	1.25	0.049	0.004	●												0.083	9.53
JTGR3130F	R	1.3	0.051	0.002	●	●											0.083	9.53
JTGR3140F	R	1.4	0.055	0.002	●	●											0.083	9.53
JTGR3140F-010	R	1.4	0.055	0.004	●												0.083	9.53
JTGR3145F	R	1.45	0.057	0.002	●	●			●				●				0.083	9.53
JTGL3145F	L	1.45	0.057	0.002		●							●				0.083	9.53
JTGR3145F-010	R	1.45	0.057	0.004	●												0.083	9.53
JTGR3150F	R	1.5	0.059	0.002	●	●			●				●				0.083	9.53
JTGL3150F	L	1.5	0.059	0.002	●	●							●				0.083	9.53
JTGR3150F-010	R	1.5	0.059	0.004	●												0.083	9.53
JTGL3150F-010	L	1.5	0.059	0.004	●												0.083	9.53

● : Line up

Reference pages: Toolholders → F125, Standard cutting conditions → F128

JTG (Sharp edge)



Right hand (R) shown.
Unit: mm

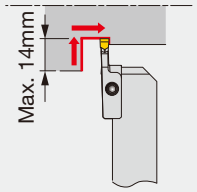
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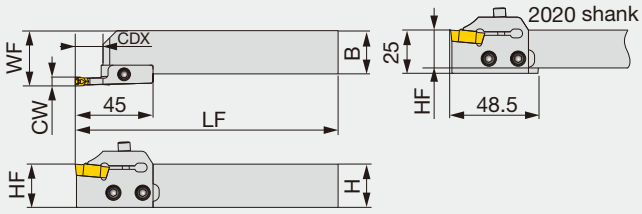
STANDARD CUTTING CONDITIONS (J-Series grooving tool)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	General steels, Free-cutting steels, etc.	J740	33 - 328	0.0004 - 0.004
		SH725	164 - 492	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
M	Stainless steels, etc.	J740	33 - 328	0.0004 - 0.004
		SH725	164 - 492	0.0004 - 0.004
N	Aluminum alloys, copper alloys, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-cut materials, titanium alloys, etc.	TH10	33 - 98	0.0004 - 0.004

CGWSR/L-FLR/L#GP

External grooving and turning toolholder





Right hand (R) shown.
Unit: mm

Metric	CW	CDX	H	B	LF	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L2020-FLR/L3GP	3	10	20	20	152	20	27	FLEX30R/L	CGWSR/L2020	FLR/L3GP	5
CGWSR/L2525-FLR/L3GP	3	10	25	25	152	25	32	FLEX30R/L	CGWSR/L2525	FLR/L3GP	5
CGWSR/L2020-FLR/L4GP	4	12	20	20	152	20	27	FLEX40R/L	CGWSR/L2020	FLR/L4GP	5
CGWSR/L2525-FLR/L4GP	4	12	25	25	152	25	32	FLEX40R/L	CGWSR/L2525	FLR/L4GP	5
CGWSR/L2020-FLR/L5GP	5	14	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5GP	5
CGWSR/L2525-FLR/L5GP	5	14	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5GP	5

Toolholders are in stock with the designations of: a set of shank and adapter; a shank; a adapter. Combining the designations of a adapter and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a adapter.
Use right-hand toolholders (CGWSR...) with right-hand adapter (FLR...); and left-hand toolholders (CGWSL...) with left-hand adapter (FLL...).
Torque: Recommended clamping torque: N·m

SPARE PARTS

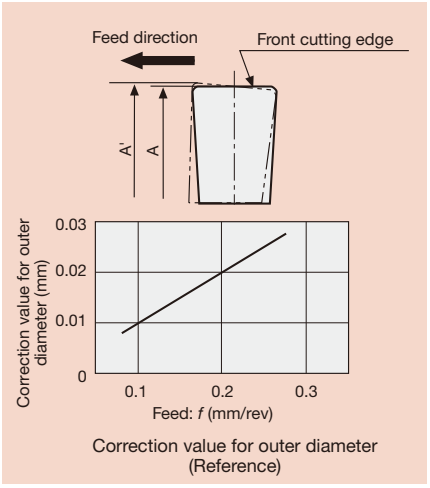




Designation	Clamping screw	Adapter screw	Wrench
CGWSR/L****-FLR/L*GP	CHHM5-18	CSHB-6	P-4

Caution

Toolholders with FLEX insert have mechanism in which the end cutting edge angle is formed by accepting a cutting force. In external grooving, there is a possibility that if the cutting conditions (feed and depth of cut) are set too high, the programmed diameter will not be achieved. To prevent this problem, it is necessary to perform a compensation in the program by an amount that is equal to the amount A'-A that is shown in the drawing on the right. The values of compensation corresponding to the feeds are also shown in the graph.

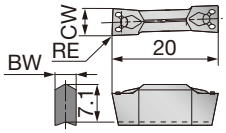


Correction value for outer diameter (Reference)

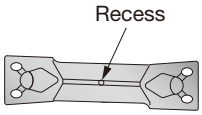
Reference pages: Inserts, Standard cutting conditions → F130

INSERT

FLEX(R/L)



Right hand (R) shown.
Unit: mm



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated				Cermet				Uncoated				
		T9225				NS9530				UX30				
P	Steel	★				★				★				
M	Stainless	★								★				
K	Cast iron	☆				☆								
N	Non-ferrous													
S	Superalloys													
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Coated T9225	Cermet NS9530	Uncoated UX30	BW (mm)
FLEX30R	R	0.118	3	0.4		●		2.2
FLEX30L	L	0.118	3	0.4		●		2.2
FLEX40R	R	0.157	4	0.4		●		3.1
FLEX40L	L	0.157	4	0.4		●		3.1
FLEX50R	R	0.197	5	0.4	●	●	●	4
FLEX50L	L	0.197	5	0.4	●	●	●	4

● : Line up

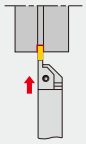
STANDARD CUTTING CONDITIONS

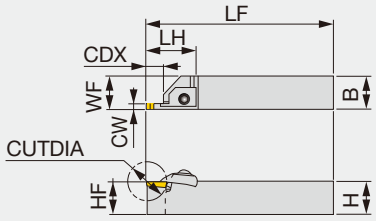
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

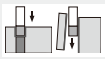
Reference pages: Toolholders → F129

CTWR/L

External grooving and parting toolholder, for 2 corner inserts







Right hand (R) shown.

Metric	CW	CUTDIA	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CTWR/L2020-3	3	32	14	20	20	150	41	20	20.25	CTD3	5
CTWR/L2525-3	3	32	14	25	25	150	41	25	25.25	CTD3	5
CTWR/L2020-4	4	32	14	20	20	150	41	20	20.25	CTD4	5
CTWR/L2525-4	4	32	14	25	25	150	41	25	25.25	CTD4	5
CTWR/L2525-5	5	42	20	25	25	150	46	25	25.25	CTD5	5

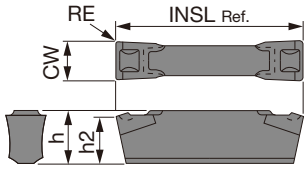
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp	Pin	Clamping screw	Washer	Wrench
CTWR2020-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2020-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-5	CTC-5R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-5	CTC-5L	BP-360	CTS-M6	CDW6	P-4

INSERT

CTD



		Coated
		AH725
P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.004 (in)	CW±0.1 (mm)	RE (mm)	AH725	INSL (mm)	h (mm)	h2 (mm)
CTD3	0.118	3	0.2	●	20	4.3	4
CTD4	0.157	4	0.2	●	20	5.3	5
CTD5	0.197	5	0.2	●	25	6.3	6

● : Line up

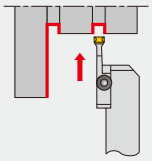
STANDARD CUTTING CONDITIONS

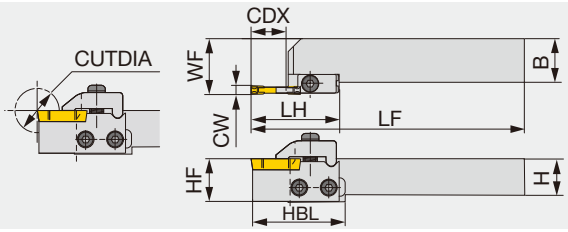
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Parting off
P	Carbon steel	AH725	262 - 591	0.003 - 0.012	0.003 - 0.006
M	Stainless steel	AH725	164 - 394	0.003 - 0.010	0.003 - 0.004

MY-T SERIES

CGWSR/L-CGD

External grooving and parting toolholder







Right hand (R) shown.

Metric	CW	CUTDIA	CDX	H	B	LF	LH	HBL	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L2020-CGDR/L2	2	35	16	20	20	152	45	48.5	20	26.45	CGD200	CGWSR/L2020	CGDR/L2	5
CGWSR/L2525-CGDR/L2	2	35	16	25	25	152	45	-	25	31.45	CGD200	CGWSR/L2525	CGDR/L2	5
CGWSR/L2020-CGDR/L3	3	46	21.6	20	20	157.6	50.6	54.1	20	26.45	CGD300	CGWSR/L2020	CGDR/L3	5
CGWSR/L2525-CGDR/L3	3	46	21.6	25	25	157.6	50.6	-	25	31.45	CGD300	CGWSR/L2525	CGDR/L3	5
CGWSR/L2020-CGDR/L4	4	46	21.6	20	20	157.6	50.6	54.1	20	26.65	CGD400	CGWSR/L2020	CGDR/L4	5
CGWSR/L2525-CGDR/L4	4	46	21.6	25	25	157.6	50.6	-	25	31.65	CGD400	CGWSR/L2525	CGDR/L4	5
CGWSR/L2020-CGDR/L5	5	46	21.6	20	20	157.6	50.6	54.1	20	26.95	CGD500	CGWSR/L2020	CGDR/L5	5
CGWSR/L2525-CGDR/L5	5	46	21.6	25	25	157.6	50.6	-	25	31.95	CGD500	CGWSR/L2525	CGDR/L5	5
CGWSR/L2020-CGDR/L6	6	46	21.6	20	20	157.6	50.6	54.1	20	27.1	CGD600	CGWSR/L2020	CGDR/L6	5
CGWSR/L2525-CGDR/L6	6	46	21.6	25	25	157.6	50.6	-	25	32.1	CGD600	CGWSR/L2525	CGDR/L6	5
CGWSR2525-8	7 / 8	50	21.6	25	25	150	-	-	25	26.35	CGD700, CGD800	-	-	8.5
CGWSR3232-8	7 / 8	50	21.6	32	32	170	-	-	32	33.35	CGD700, CGD800	-	-	8.5

When using a right or left hand adapter set, the right hand adapter set is used with right hand shank and the left hand adapter set is used with left hand shank.
Torque: Recommended clamping torque: N·m

SPARE PARTS



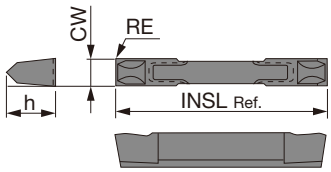





Designation	Adapter	Clamp	Clamping screw	Adapter screw	Spring pin	Spring	Wrench
CGWSR****-CGDR2	TCR2	CCR2	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL2	TCL2	CCL2	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR3	TCR3	CCR3	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL3	TCL3	CCL3	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR4	TCR4	CCR4	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL4	TCL4	CCL4	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR5	TCR5	CCR5	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL5	TCL5	CCL5	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR6	TCR6	CCR6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDL6	TCL6	CCL6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-8	-	CCR/L-8	CHHM6-20	-	5X14AW	BP-9	P-5

INSERT

CGD



P	Steel	☆			★			★					
M	Stainless	★						★					
K	Cast iron				☆								
N	Non-ferrous												
S	Superalloys												
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated			Cermet			Uncoated					INSL (mm)	h (mm)
				GH330			NS9530			UX30						
CGD200	0.079	2	0.2	●			●			●					20	3.25
CGD300	0.118	3	0.2	●			●			●					28.6	6.3
CGD400	0.157	4	0.2	●			●			●					28.6	6.3
CGD500	0.197	5	0.2	●			●			●					28.6	6.3
CGD600	0.236	6	0.2	●			●			●					28.6	8.5
CGD700	0.276	7	0.2	●						●					28.6	8.5
CGD800	0.315	8	0.2	●						●					28.6	8.5

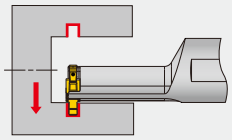
● : Line up

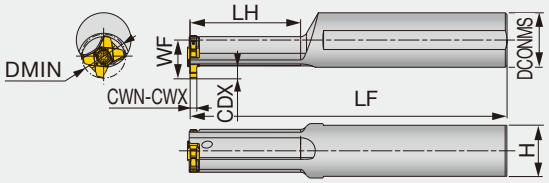
STANDARD CUTTING CONDITIONS

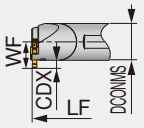
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Parting off
P	Carbon steel	GH330	230 - 591	0.003 - 0.012	0.003 - 0.006
		NS9530	262 - 656	0.003 - 0.012	0.003 - 0.006
		UX30	197 - 492	0.003 - 0.012	0.003 - 0.006

A/E-STCIR/L

Internal grooving toolholder







Right hand (R) shown.

Inch	Material	CWN	CWX	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque
A08-STCIR/L10-D07U	Steel	0.020	0.118	0.438	0.500	0.984	4.000	0.339	0.475	TCIG10...	0.74
A08-STCIR/L10-D08U	Steel	0.020	0.118	0.500	0.500	1.220	4.000	0.339	0.475	TCIG10...	0.74
E08-STCIR/L10-D10U	Carbide	0.020	0.118	0.625	0.500	-	5.000	0.339	0.475	TCIG10...	0.74
A10-STCIR/L12-D09U	Steel	0.039	0.118	0.563	0.625	1.299	4.500	0.441	0.600	TCIG12...	0.96
A10-STCIR/L12-D11U	Steel	0.039	0.118	0.688	0.625	1.614	4.500	0.441	0.600	TCIG12...	0.96
E10-STCIR/L12-D13U	Carbide	0.039	0.118	0.813	0.625	-	6.000	0.441	0.600	TCIG12...	0.96

Metric	Material	CWN	CWX	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque*
A12H-STCIR/L10-D105	Steel	0.5	3	10.5	12	25	100	8.3	11	TCIG10...	1
A12H-STCIR/L10-D120	Steel	0.5	3	12	12	31	100	8.3	11	TCIG10...	1
E12K-STCIR/L10-D150	Carbide	0.5	3	15	12	-	125	8.3	11	TCIG10...	1
A16J-STCIR/L12-D130	Steel	1	3	13	16	33	110	11.3	15	TCIG12...	1.3
A16J-STCIR/L12-D160	Steel	1	3	16	16	41	110	11.3	15	TCIG12...	1.3
E16M-STCIR/L12-D200	Carbide	1	3	20	16	-	150	11.3	15	TCIG12...	1.3

Torque: Recommended clamping torque: lbs·ft (*N·m)

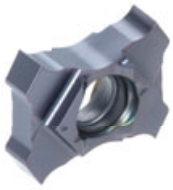
SPARE PARTS

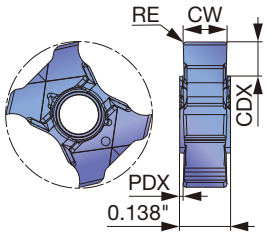


Designation	Clamping screw
A/E-STCIR10-...	CSTB-2.2L053DR
A/E-STCIL10-...	CSTB-2.2L053DL
A/E-STCIR12-...	CSTB-2.5L054DR
A/E-STCIL12-...	CSTB-2.5L054DL

INSERT

TCIG





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

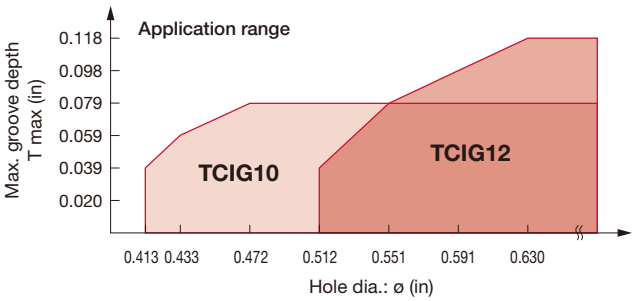
★ : First choice

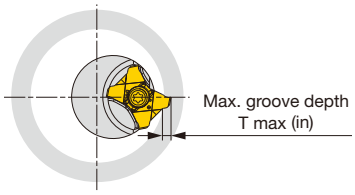
Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PDX (in)
TCIG10-050-005	0.5	0.020	0.002	●	0.039	0.059
TCIG10-122-008	1.22	0.048	0.003	●	0.079	0.045
TCIG10-142-008	1.42	0.056	0.003	●	0.079	0.041
TCIG10-150-010	1.5	0.059	0.004	●	0.079	0.039
TCIG10-172-008	1.72	0.068	0.003	●	0.079	0.035
TCIG10-200-010	2	0.079	0.004	●	0.079	0.030
TCIG10-250-020	2.5	0.098	0.008	●	0.079	0.020
TCIG10-300-020	3	0.118	0.008	●	0.079	0.010
TCIG12-100-010	1	0.039	0.004	●	0.098	0.049
TCIG12-150-010	1.5	0.059	0.004	●	0.118	0.039
TCIG12-197-008	1.97	0.078	0.003	●	0.118	0.030
TCIG12-200-020	2	0.079	0.008	●	0.118	0.030
TCIG12-224-008	2.24	0.088	0.003	●	0.118	0.025
TCIG12-250-020	2.5	0.098	0.008	●	0.118	0.020
TCIG12-277-015	2.77	0.109	0.006	●	0.118	0.015
TCIG12-300-020	3	0.118	0.008	●	0.118	0.010

● : Line up

Shallower groove depths (T max) for smaller bores

Maximum groove depths (T max) for TCIG10 inserts are smaller than the CDX value shown above when the grooving bore diameter is < 0.472" (12 mm); and for TCIG12, when the bore diameter is < 0.630" (16 mm).
See the chart below for T max values in relation to the given bore diameter.



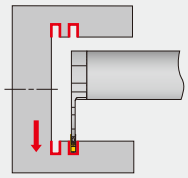


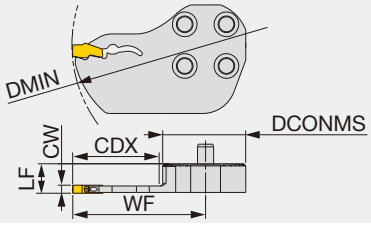
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, 4140, etc.	< 300 HB	First choice	98 - 262	0.0004 - 0.002
M	Stainless steel 304, 316, etc.	< 200 HB	First choice	98 - 164	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	33 - 164	0.0004 - 0.002

S-QSIR/L-H

Internal grooving head





Left hand (L) shown.

Inch	CW	CDX	DMIN	DCONMS*	Seat size	LF	WF	Shank
S25-QSIR/L2T26D550-H	0.079	1.024	2.165	0.984	2	0.335	1.579	D1.00
S25-QSIR/L3T26D550-H	0.118	1.024	2.165	0.984	3	0.354	1.579	D1.00
S32-QSIR/L3T32D700-H	0.118	1.260	2.756	1.260	3	0.433	1.953	D1.25
S32-QSIR/L4T32D700-H	0.157	1.260	2.756	1.260	4	0.453	1.953	D1.25

DCONMS*: Mounting part diameter on the shank

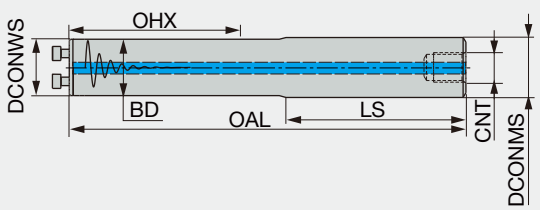
SPARE PARTS



Designation	Wrench
S**-QSIR/L...	QL-39

Straight Shank

Anti-vibration bars with through coolant for interchangeable turning heads, for S-QSIR/L modular heads



Inch	Material	DCONWS*	DCONMS	BD	OAL	LS	OHX	CNT
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8

DCONWS*: Mounting part diameter on the head

SPARE PARTS





Designation	Clamping screw	Wrench
D1.00...	SR M4X12DIN912	HW 3.0
D1.25...	SR M5X12 DIN912	HW 4.0

Reference pages: Inserts → F138, F139, Standard cutting conditions → F139

C#-SH-CHP / C#-SH-E-CHP

Tool adapter with PSC connection (made of steel or carbide), for S-QSIR/L modular heads

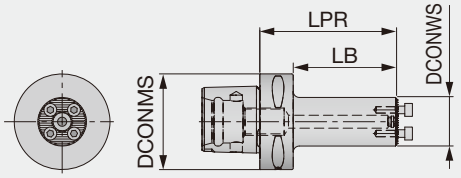


Fig. 1

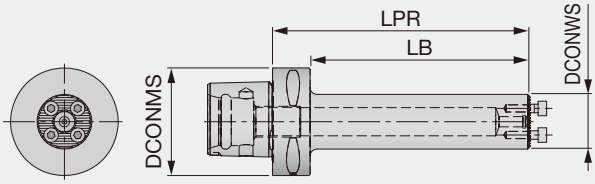


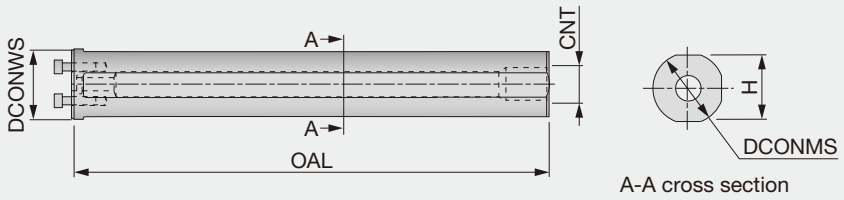
Fig. 2

Metric	Material	DCONWS*	DCONMS	LPR	LB	Fig
C4-SH-D25-2.5D-CHP	Steel	25 (0.984")	40	55	35	1
C4-SH-D32-2.5D-CHP	Steel	32 (1.260")	40	75	55	1
C6-SH-D25-5D-E-CHP	Carbide	25 (0.984")	63	115	93	2
C6-SH-D32-5D-E-CHP	Carbide	32 (1.260")	63	150	128	2

DCONWS*: Mounting part diameter on the head

D#4D-SH

Steel shank for internal turning, with through coolant, for S-QSIR/L modular heads

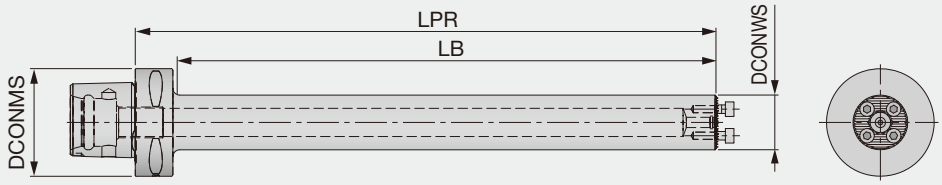


Inch	Material	DCONWS*	DCONMS	OAL	CNT	H
D1.00-L7.2-4D-SH	Steel	1.000	1.000	7.200	UNF-2B 1/2"-20	0.921
D1.25-L8.74-4D-SH	Steel	1.250	1.250	8.740	UNF-2B 1/2"-20	1.142

DCONWS*: Mounting part diameter on the head

C6-9D-C

Vibration-dampening toolholder with PSC connection, 9xD, for S-QSIR/L modular heads



Metric	Material	DCONWS*	DCONMS	LPR	LB	WT (kg)
C6-D25-L230-9D-C	Steel	25 (0.984")	63	230.5	200.1	1.65
C6-D32-L288-9D-C	Steel	32 (1.260")	63	288.5	259.5	2.73

DCONWS*: Mounting part diameter on the head

SPARE PARTS

Designation	Clamping screw	Wrench
C4/C6**D25... D1.00...	SR M4X12DIN912	HW 3.0
C4/C6**D32... D1.25...	SR M5X12 DIN912	HW 4.0

Reference pages: Inserts → F138, F139, Standard cutting conditions → F139

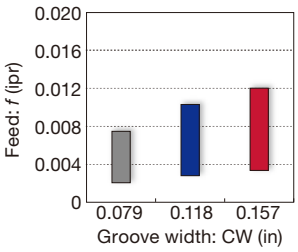
CHIPBREAKER GUIDE

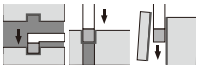
QGM



First choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
CW = 0.079" - 0.157"



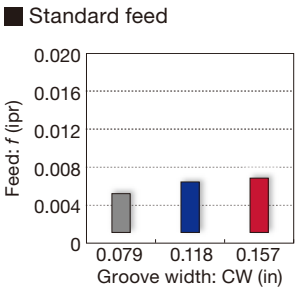


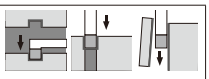
QGS



Lower cutting force and superior sharpness

Uniquely designed edge and chipbreaker
CW = 0.079" - 0.157"



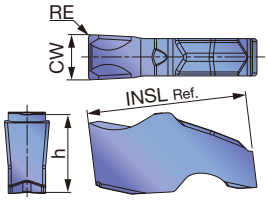


INSERTS

QGM

External/internal deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGM2-020	2	2	0.079	0.008	●	0.433	0.209
QGM3-020	3	3	0.118	0.008	●	0.433	0.209
QGM4-030	4	4	0.157	0.012	●	0.512	0.287

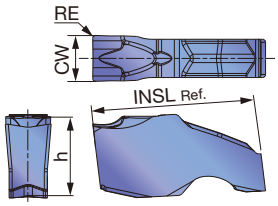
●: Line up

Reference pages: Toolholders → F136, F137

QGS

External/internal deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGS2-020	2	2	0.079	0.008	●	0.433	0.209
QGS3-020	3	3	0.118	0.008	●	0.433	0.209
QGS4-030	4	4	0.157	0.012	●	0.512	0.287

●: Line up

STANDARD CUTTING CONDITIONS

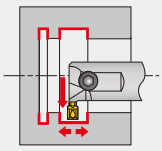
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast iron 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 197

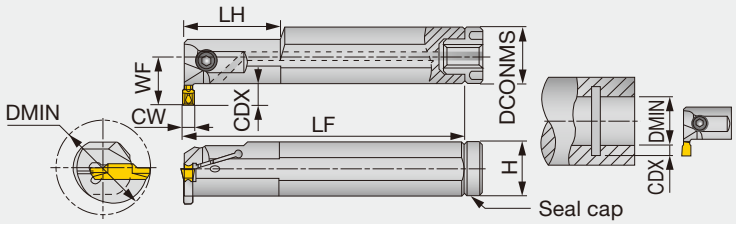
Please see page F138 for feed: *f* (ipr).

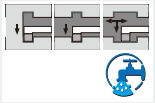
Reference pages: Toolholders → F136, F137

CTIR/L

Internal grooving and turning toolholder







Right hand (R) shown.

Inch	CW	DMIN	Seat size	CDX	DCONMS	H	LF (1)	LH	WF	Insert	Torque
CTIR/L12-3T06-D16	0.118	1.000	3	0.236	0.750	0.551	6.500	1.575	0.609	DTI..., DTX...	3.69
CTIR/L16-3T05-D16	0.118	1.000	3	0.201	1.000	0.709	8.000	1.575	0.689	DTI..., DTX...	3.69
CTIR/L16-3T08-D20	0.118	1.250	3	0.315	1.000	0.709	8.000	1.575	0.846	DTI..., DTX...	3.69
CTIR/L20-3T10-D25	0.118	1.563	3	0.394	1.250	0.906	10.000	2.362	1.063	DTI..., DTX...	3.69
CTIR/L12-4T06-D16	0.157	1.000	4	0.236	0.750	0.906	6.500	1.575	0.609	DTI..., DTX...	3.69
CTIR/L16-4T08-D20	0.157	1.250	4	0.315	1.000	1.181	8.000	1.575	0.846	DTI..., DTX...	3.69
CTIR/L20-4T04-D20	0.157	1.250	4	0.157	1.250	0.709	10.000	2.362	0.819	DTI..., DTX...	3.69
CTIR/L20-4T10-D25	0.157	1.563	4	0.394	1.250	0.906	10.000	2.362	1.063	DTI..., DTX...	3.69
CTIR/L16-5T05-D20	0.197	1.250	5	0.197	1.000	1.181	8.000	2.362	0.681	DTI..., DTX...	6.27
CTIR/L20-5T10-D25	0.197	1.563	5	0.394	1.250	1.181	10.000	2.362	1.063	DTI..., DTX...	6.27
CTIR/L20-6T04-D20	0.236	1.250	6	0.157	1.250	0.906	10.000	2.362	0.820	DTI..., DTX...	6.27
CTIR/L20-6T10-D25	0.236	1.563	6	0.394	1.250	1.181	10.000	2.362	1.063	DTI..., DTX...	6.27
CTIR/L20-8T05-D23	0.315	1.438	8	0.197	1.250	1.181	10.000	2.362	0.839	DTI..., DTX...	6.27
CTIR/L24-8T05-D26	0.315	1.625	8	0.228	1.500	1.181	12.000	2.559	0.982	DTI..., DTX...	6.27

(1) LF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: lbs·ft

INCH SPARE PARTS





Designation	Clamping screw	Wrench	Seal cap	Thread type for connection
CTIR/L12-3T06-D16	CM5x0.8x12-A	P-4	CA-20	M6
CTIR/L16-3T05-D16	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L16-3T08-D20	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L20-3T10-D25	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L12-4T06-D16	CM5x0.8x12-A	P-4	CA-20	M6
CTIR/L16-4T08-D20	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L20-4T04-D20	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L20-4T10-D25	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L16-5T05-D20	CM6x1x16-A	P-5	CA-25	R1/8"
CTIR/L20-5T10-D25	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-6T04-D20	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-6T10-D25	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-8T05-D23	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L24-8T05-D26	CM6x1x25-A	P-5	CA-40	R1/8"

When using the inserts that are not in the above

Insert	Groove width CW (in)	Min. diameter DMIN (in)
DGM / DGS / SGN / DGL / DTM	0.079	1.969
DGM / DGS / SGN / DGL / DTM	0.118	1.969
DGM / DGS / SGN / DTM / DGL	0.157	1.969
DGM / DGS / DTM / DGL	0.197	2.362
DGM / DGS / DTM / DGL	0.236	2.362
DGM / DGS / DTM	0.315	2.756
DTE / DGG	0.118	1.575
DTE / DGG	0.157	1.575
DTE / DGG	0.197	1.969
DTE / DGG	0.236	1.969
DTE / DGG	0.315	2.441
DTR	0.079	1.772
DTR	0.118	1.496
DTR	0.157	1.496
DTR	0.197	1.693
DTR	0.236	1.811
DTR	0.315	2.205

External
Internal
Face
Parting
Others

Reference pages: Inserts → F142 - F159, Standard cutting conditions → F160

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	LF (1)	LH	WF	Insert	Torque
CTIR/L16-2T08-D250	2	25	2	8	16	14	125	-	16.5	DGIM..., DGIS..., DTX...	5
CTIR/L20-2T06-D250	2	25	2	6	20	18	160	40	15.8	DGIM..., DGIS..., DTX...	5
CTIR/L20-3T06-D250	3	25	3	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-3T05-D250	3	25	3	5.1	25	23	200	40	17.5	DTI..., DTX...	5
CTIR/L25-3T08-D320	3	32	3	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-3T10-D400	3	40	3	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L20-4T06-D250	4	25	4	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-4T08-D320	4	32	4	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-4T04-D310	4	31	4	4	32	30	250	60	20.8	DTI..., DTX...	5
CTIR/L32-4T10-D400	4	40	4	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L25-5T05-D310	5	31	5	5	25	23	200	60	17.3	DTI..., DTX...	8.5
CTIR/L32-5T10-D400	5	40	5	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-6T04-D310	6	31	6	4	32	30	250	60	20.8	DTI..., DTX...	8.5
CTIR/L32-6T10-D400	6	40	6	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-8T05-D370	8	37	8	5	32	30	250	60	21.3	DTI..., DTX...	8.5
CTIR/L40-8T05-D420	8	42	8	5.8	40	38	300	65	25.8	DTI..., DTX...	8.5

(1) LF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: N·m

METRIC SPARE PARTS



Designation	Clamping screw	Wrench	Seal cap	Thread type for connection
CTIR/L16-2T08-D250	CM5X0.8X10-A	P-4	CA-16	M6
CTIR/L20-2T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L20-3T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-3T05-D250	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L25-3T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-3T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L20-4T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-4T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-4T04-D310	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L32-4T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L25-5T05-D310	CM6X1X16-A	P-5	CA-25	R1/8"
CTIR/L32-5T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T04-D310	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-8T05-D370	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L40-8T05-D420	CM6X1X25-A	P-5	CA-40	R1/8"

When using the inserts that are not in the above

Insert	Groove width CW (mm)	Min. diameter DMIN (mm)
DGM / DGS / SGN / DGL / DTM	2	50
DGM / DGS / SGN / DGL / DTM	3	50
DGM / DGS / SGN / DTM / DGL	4	50
DGM / DGS / DTM / DGL	5	60
DGM / DGS / DTM / DGL	6	60
DGM / DGS / DTM	8	70
DTE / DGG	3	40
DTE / DGG	4	40
DTE / DGG	5	50
DTE / DGG	6	50
DTE / DGG	8	62
DTR	2	45
DTR	3	38
DTR	4	38
DTR	5	43
DTR	6	46
DTR	8	56

Reference pages: Inserts → F142 - F159, Standard cutting conditions → F160

Internal grooving and turning

DTX type (2 corners)

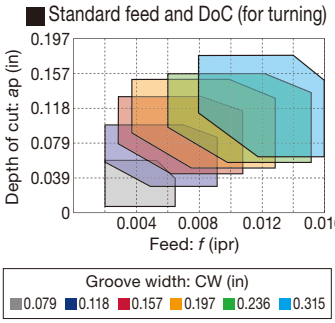
First choice

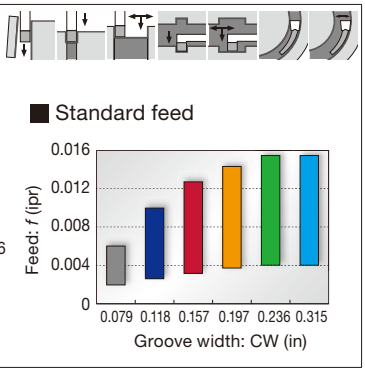


F147

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.079" - 0.315"





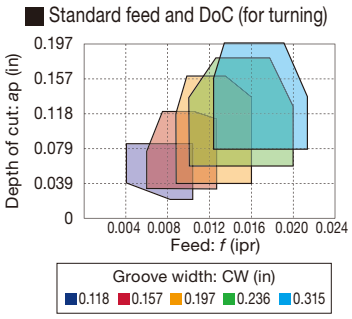
DTI type (2 corners)

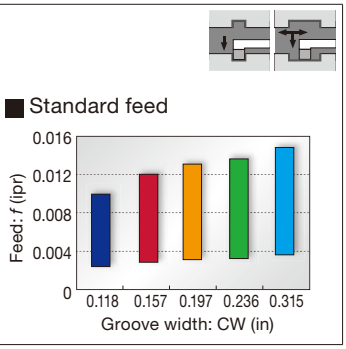


F148, F149

For general purpose I.D. grooving

Unique chipbreaker makes chips shorter
Molded and ground inserts available
CW = 0.118" - 0.315"





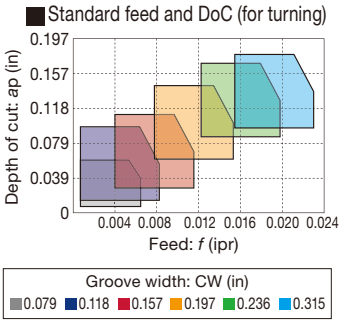
DTM type (2 corners)

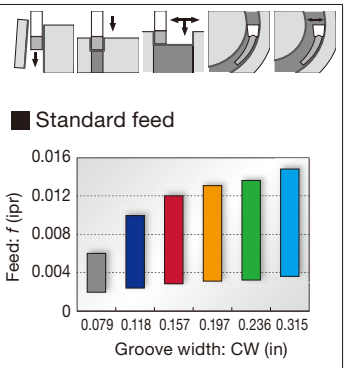


F149

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.079" - 0.315"





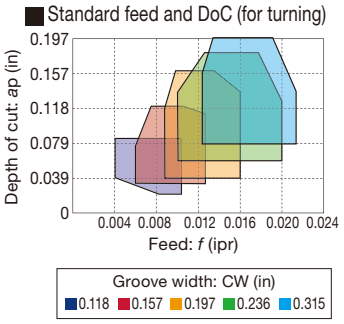
DTE type (2 corners)

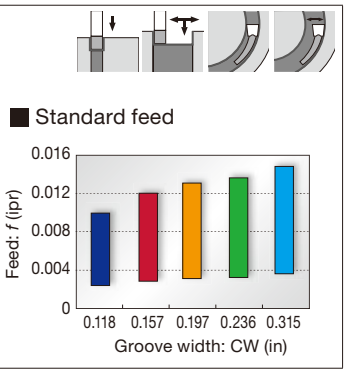


F154, F155

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.104" - 0.315"





Please see page F*** for the product details.

Small diameter internal grooving

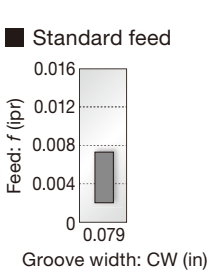
DGIM type (2 corners)



F147

2 mm insert width only (For general purpose)

Unique chipbreaker for excellent chip control
Excellent fracture resistance due to optimum land on the cutting edge
For general applications on steels & stainless steels
CW = 0.079"





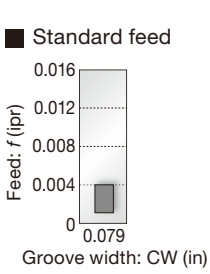
DGIS type (2 corners)



F148

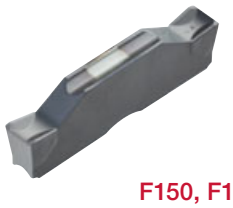
2 mm insert width only (Lower cutting force)

Lower cutting force
Excellent fracture resistance due to optimum land on the cutting edge
Applicable for low carbon steels & stainless steels
CW = 0.079"





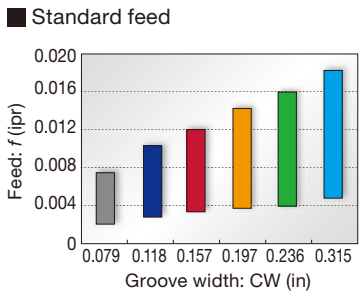
DGM type (2 corners) SGM type (1 corner)

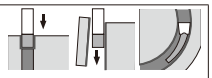


F150, F151

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"





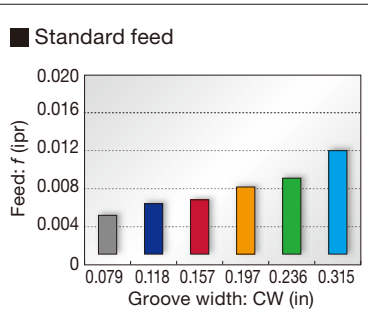
DGS type (2 corners) SGS type (1 corner)

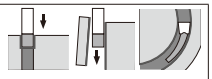


F152, F153

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.079" - 0.315"





Please see page F*** for the product details.

Small diameter internal grooving

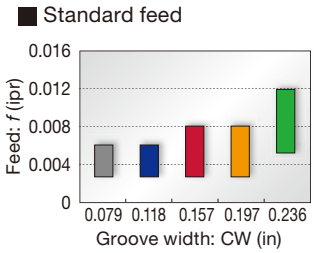
DGL type (2 corners)

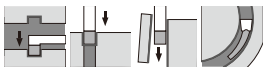


F154

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel which often presents challenges in chip control
CW = 0.079" - 0.236"





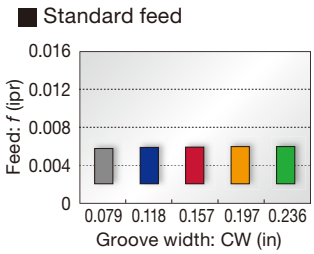
DGG type (2 corners)

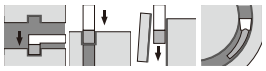


F155

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"





Profiling and undercutting

DTR type (2 corners)
STR type (1 corner)

Molded
DTR, STR



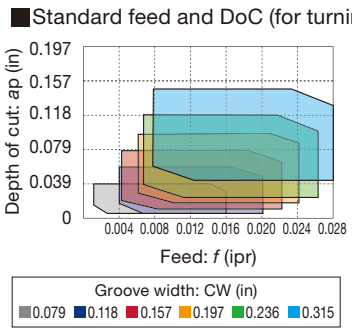
Ground
DTR

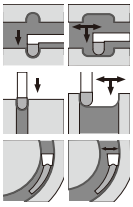


F156, F157

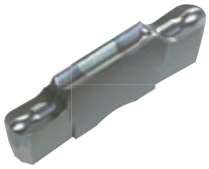
Full radius type

Excellent chip control
Molded and ground inserts available
CW = 0.079" - 0.315"





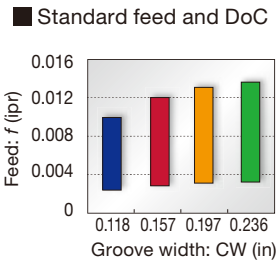
DTIU type (2 corners)

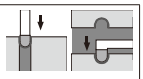


F157

Full radius type

Excellent chip control for undercutting
CW = 0.118" - 0.236"





Please see page F*** for the product details.

Aluminum wheel machining

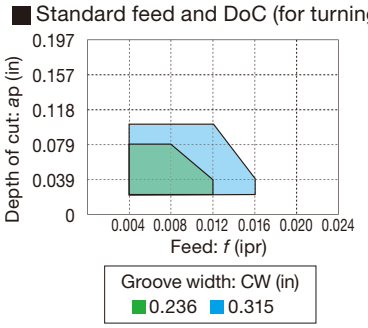
DTA type (2 corners)

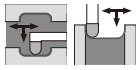


F158

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"





For high feed external/internal/face turning of hardened steel parts

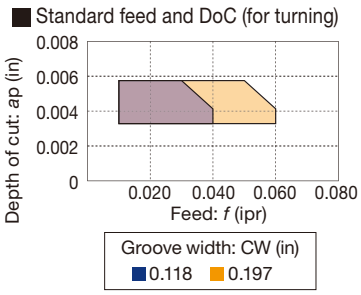
STH type (1 corner)



F158

External and face turning of hardened steel parts

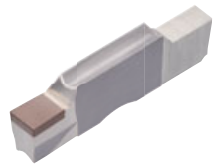
High efficiency machining using light D.O.C. and increased feeds
CW = 0.118", 0.197"





External/internal grooving of hardened steel

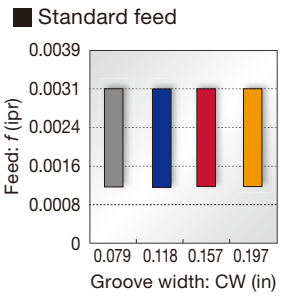
SGN-CBN type (1 corner)

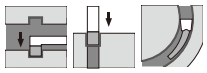


F159

For hardened steel cutting

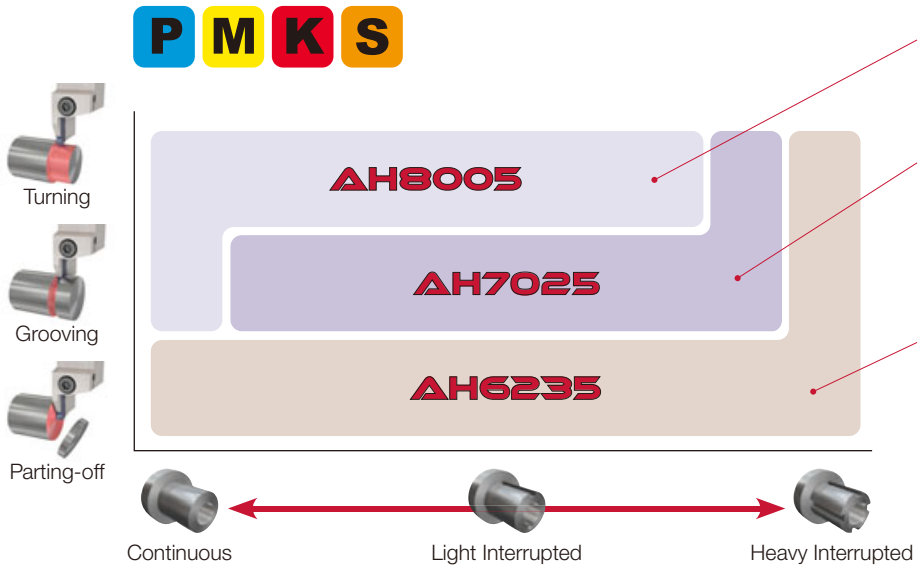
Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.197"
(Tol. ±0.001")





Please see page F*** for the product details.

GRADE SELECTION



AH8005
- Continuous cutting, First choice
- External and Internal, Turning

AH7025
- Light interrupted cutting, First choice
- A mix of continuous and interrupted cuts

AH6235
- Heavy interrupted cutting, First choice
- Facing, Parting

GRADES

AH8005 P M K S
- First choice for external, internal, and side-turning, continuous cuts

AH7025 P M K S
- First choice for light interrupted cuts or a mix of continuous and interrupted cuts
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH6235 P M K
- First choice for heavy interrupted cuts, as well as parting and facing applications

AH725 P M S
- General purpose PVD grade for high fracture resistance

T515 K
- First recommended grade for cast iron
- Excellent wear resistance in high speed machining

T9225 P
- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P
- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K
- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S
- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S
- Recommended for non-ferrous materials and titanium

TH10 N
- Recommended for non-ferrous materials

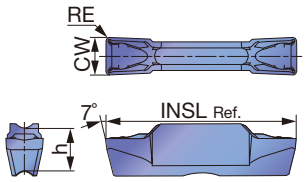
BXA10 H
- Coated CBN grade designed for turning hardened steel parts

BX360 H
- Developed for grooving applications of hardened steel parts

INSERTS

DTX

External/internal/face grooving and turning



P	Steel	★	★	☆	★	☆	★		★						
M	Stainless		★	☆	★	★	★								
K	Cast iron		★		★	☆	★		☆			☆			
N	Non-ferrous											☆			
S	Superalloys		★	☆	★							★			
H	Hard materials														

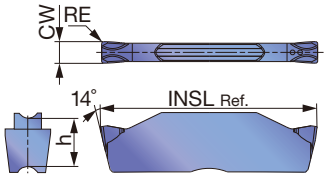
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				Uncoated				INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	GH130	AH6235		NS9530				KS05F					
DTX2-020	2	2	0.079	0.008		●		●		●						●				0.787	0.197
DTX3-030	3	3	0.118	0.012	●	●	●	●	●	●		●				●				0.787	0.197
DTX4-040	4	4	0.157	0.016	●	●	●	●	●	●		●				●				0.787	0.197
DTX5-040	5	5	0.197	0.016	●	●	●	●	●	●		●				●				0.984	0.217
DTX6-080	6	6	0.236	0.031		●	●	●	●	●						●				0.984	0.217
DTX8-080	8	8	0.315	0.031		●		●		●						●				1.181	0.264

● : Line up

DGIM

Small diameter internal grooving



P	Steel	★	★	☆	☆				★						
M	Stainless		★	☆	★										
K	Cast iron		★		☆				☆						
N	Non-ferrous														
S	Superalloys		★	☆											
H	Hard materials														

★ : First choice
☆ : Second choice

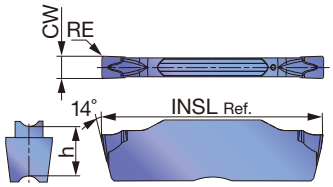
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet								INSL (in)	h (in)
					T9225	AH7025	AH725	GH130				NS9530									
DGIM2-020	2	2	0.079	0.008	●	●	●	●				●								0.787	0.197

●: Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DGIS

Small diameter internal grooving



P	Steel	★	★	☆	☆				★					
M	Stainless		★	☆	★									
K	Cast iron		★		☆				☆					
N	Non-ferrous													
S	Superalloys		★	☆										
H	Hard materials													

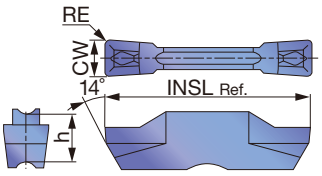
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet					INSL (in)	h (in)
					T9225	AH7025	AH725	GH130				NS9530						
DGIS2-020	2	2	0.079	0.008	●	●	●	●				●					0.787	0.197

●: Line up

DTI

Internal grooving and turning (for high precision)



P	Steel	★	★	☆	☆				★					
M	Stainless		★	☆	★									
K	Cast iron		★		☆				☆					
N	Non-ferrous													
S	Superalloys		★	☆										
H	Hard materials													

★ : First choice
☆ : Second choice

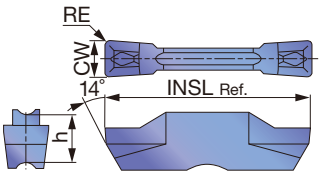
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated							Cermet					INSL (in)	h (in)
					T9225	AH7025	AH725	GH130				NS9530						
DTI300-040	3	3	0.118	0.016	●	●	●	●				●					0.787	0.197
DTI400-040	4	4	0.157	0.016	●	●	●	●				●					0.787	0.197
DTI400-080	4	4	0.157	0.031	●	●	●	●				●					0.787	0.197
DTI500-040	5	5	0.197	0.016	●	●	●	●				●					0.984	0.217
DTI500-080	5	5	0.197	0.031	●	●	●	●				●					0.984	0.217
DTI600-080	6	6	0.236	0.031	●	●	●	●									0.984	0.217
DTI600-120	6	6	0.236	0.047	●	●	●	●									0.984	0.217
DTI800-080	8	8	0.315	0.031	●	●	●	●									1.181	0.264
DTI800-120	8	8	0.315	0.047	●	●	●	●									1.181	0.264

●: Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DTI

Internal grooving and turning



P	Steel	★	★	☆	☆				★			
M	Stainless		★	☆	★							
K	Cast iron		★		☆				☆			
N	Non-ferrous											
S	Superalloys		★	☆								
H	Hard materials											

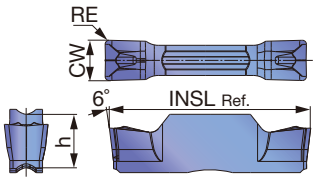
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	AH7025	AH725	GH130				NS9530					
DTI3-040	3	3	0.118	0.016	●	●	●	●				●				0.787	0.197
DTI4-040	4	4	0.157	0.016	●	●	●	●				●				0.787	0.197

●: Line up

DTM

External/internal/face grooving and turning



P	Steel	★	★	★		
M	Stainless	★	★	★		
K	Cast iron	★	★	★		
N	Non-ferrous					
S	Superalloys	★	★			
H	Hard materials					

★ : First choice
☆ : Second choice

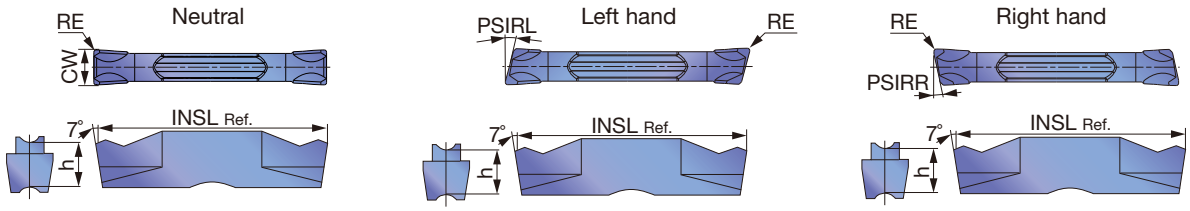
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated											INSL (in)	h (in)
					AH7025	AH8005	AH6235										
DTM2-020	2	2	0.079	0.008	●	●	●									0.787	0.197
DTM3-030	3	3	0.118	0.012	●	●	●									0.787	0.197
DTM4-040	4	4	0.157	0.016	●	●	●									0.787	0.197
DTM4-080	4	4	0.157	0.031	●	●	●									0.787	0.197
DTM5-080	5	5	0.197	0.031	●	●	●									0.984	0.217
DTM6-080	6	6	0.236	0.031	●	●	●									0.984	0.217
DTM8-080	8	8	0.315	0.031	●	●	●									1.181	0.264

● : Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DGM

External/internal grooving and parting



P	Steel	★	★	☆	★		☆	★		★				
M	Stainless		★	☆	★		★	★						
K	Cast iron		★		★	☆	☆	★		☆			☆	
N	Non-ferrous												☆	
S	Superalloys		★	☆	★	★							★	
H	Hard materials													

★ : First choice
☆ : Second choice

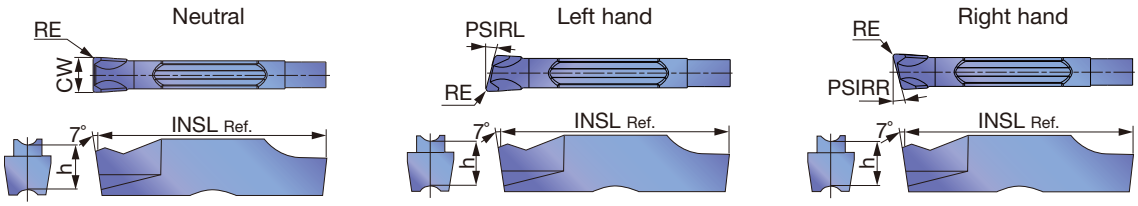
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated T9225	Coated AH7025	Coated AH725	Coated AH8005	Coated AH905	Coated GH130	Coated AH6235	Cermet NS9530	Uncoated KS05F	INSL (in)	h (in)	PSIRL	PSIRR
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●	●	●	●	0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008		●	●			●				0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008		●	●			●				0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008		●	●			●				0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008		●	●			●				0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008		●	●			●				0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008		●	●			●				0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008			●			●				0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008			●			●				0.762	0.197	15°	0°
DGM2.39-020	2	N	2.39	0.094	0.008		●		●			●			0.787	0.197	0°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008		●	●			●				0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008		●	●			●				0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.008			●			●				0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.008			●			●				0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008		●	●			●				0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008		●	●			●				0.787	0.197	15°	0°
DGM3.18-020	3	N	3.18	0.125	0.008		●		●			●			0.787	0.197	0°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012		●	●			●				0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012		●	●			●				0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012		●	●			●				0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012		●	●			●				0.787	0.197	15°	0°
DGM4.76-040	5	N	4.76	0.187	0.016		●		●			●			0.984	0.217	0°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●	●	0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012		●	●			●				0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	●		●	0.984	0.217	0°	0°
DGM6.35-040	6	N	6.35	0.250	0.016		●		●			●			0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	●	●	●		●	●		●	1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

SGM

External/internal deep grooving and parting



P	Steel	★	☆	★	☆	★						
M	Stainless	★	☆	★	★	★						
K	Cast iron	★		★	☆	★		☆				
N	Non-ferrous							☆				
S	Superalloys	★	☆	★				★				
H	Hard materials											

★ : First choice
☆ : Second choice

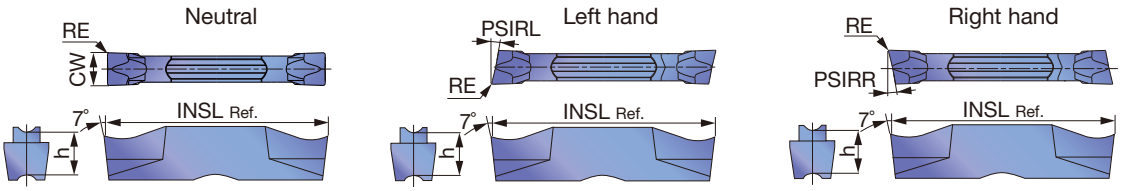
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGM2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●		●							0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●		●							0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM8-040	8	N	8	0.315	0.016	●		●		●	●					1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DGS

External/internal grooving and parting



		T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530	KS05F
P	Steel	★	★	☆	★	☆	★	★	
M	Stainless		★	☆	★	★	★		
K	Cast iron		★		★	☆	★	☆	☆
N	Non-ferrous								☆
S	Superalloys		★	☆	★				★
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet			Uncoated			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530			KS05F						
DGS2-005	2	N	2	0.079	0.002			●										0.787	0.197	0°	0°
DGS2-010	2	N	2	0.079	0.004			●										0.787	0.197	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008			●		●								0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008			●		●								0.768	0.197	15°	0°
DGS2.39-020	2	N	2.39	0.094	0.008		●		●		●							0.787	0.197	0°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008			●		●								0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008			●		●								0.766	0.197	15°	0°
DGS3.18-020	3	N	3.18	0.125	0.008		●		●		●							0.787	0.197	0°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012		●	●		●								0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012		●	●		●								0.787	0.197	4°	0°
DGS4.76-040	5	N	4.76	0.187	0.016		●		●		●							0.984	0.217	0°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●			●			0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●				●			0.984	0.217	0°	0°
DGS6.35-040	6	N	6.35	0.250	0.016		●		●		●							0.984	0.217	0°	0°
DGS8-040	8	N	8	0.315	0.016		●		●		●				●			1.181	0.264	0°	0°

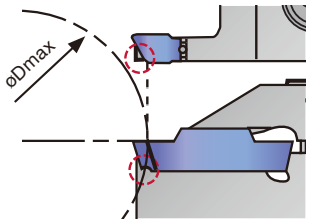
● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameters than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.141
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

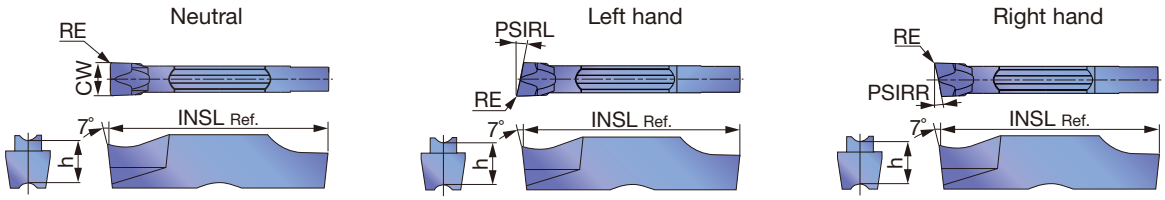
Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.141
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.338



Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

SGS

External/internal deep grooving and parting



		Coated					Uncoated												
P	Steel	★	☆	★	☆	★													
M	Stainless	★	☆	★	★	★													
K	Cast iron	★		★	☆	★	☆												
N	Non-ferrous						☆												
S	Superalloys	★	☆	★			★												
H	Hard materials																		

★ : First choice
☆ : Second choice

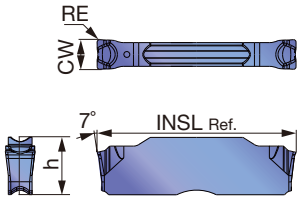
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated AH8005	Coated GH130	Coated AH6235	Uncoated KS05F	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●		●			0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●		●			0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●		●			0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●		●			0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●		●			0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●		●			0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●		●			0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●		●			0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●		●			0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●		●			0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●		●			0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●		●			0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	0.984	0.217	0°	0°
SGS8-040	8	N	8	0.315	0.016	●		●		●		1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DGL

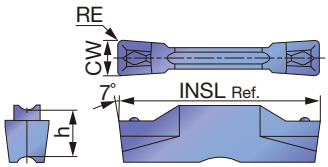
External/internal grooving and parting



| | | |

DTE

External/internal/face grooving and turning



P	Steel	★		★	☆	★	☆	★		★		
M	Stainless			★	☆	★	★	★				
K	Cast iron		★	★		★	☆	★				
N	Non-ferrous											
S	Superalloys			★	☆	★						
H	Hard materials											

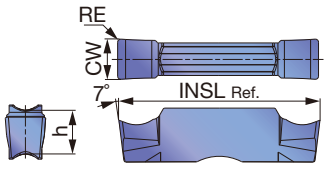
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet					INSL (in)	h (in)
					T9225	T515	AH7025	AH725	AH8005	GH130	AH6235	NS9530						
DTE3-020	3	3	0.118	0.008			●		●		●						0.787	0.197
DTE3-040	3	3	0.118	0.016	●	●	●	●	●	●	●	●					0.787	0.197
DTE4-040	4	4	0.157	0.016	●	●	●	●	●	●	●	●					0.787	0.197
DTE4-080	4	4	0.157	0.031			●		●		●						0.787	0.197
DTE5-040	5	5	0.197	0.016		●	●		●		●						0.984	0.217
DTE5-080	5	5	0.197	0.031			●		●		●						0.984	0.217
DTE6-080	6	6	0.236	0.031		●	●		●		●						0.984	0.217

● : Line up

DGG

External/internal grooving (for high precision)



P	Steel	★			★							
M	Stainless	★										
K	Cast iron	★			☆			☆				
N	Non-ferrous							★				
S	Superalloys	★						☆				
H	Hard materials											

★ : First choice
☆ : Second choice

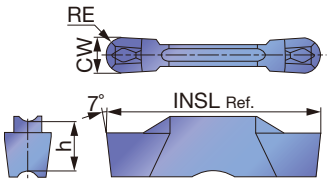
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated			Cermet			Uncoated					INSL (in)	h (in)
					AH7025			NS9530			KS05F						
DGG200-020	2	2	0.079	0.008	●			●			●					0.787	0.197
DGG300-020	3	3	0.118	0.008	●			●			●					0.787	0.197
DGG400-040	4	4	0.157	0.016	●			●			●					0.787	0.197
DGG500-040	5	5	0.197	0.016	●			●			●					0.984	0.217
DGG600-040	6	6	0.236	0.016	●			●			●					0.984	0.217

●: Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DTR

Profiling and undercutting (for high precision)



		T9225	AH7025	AH725	GH130	NS9530
P	Steel	★	★	☆	☆	★
M	Stainless		★	☆	★	
K	Cast iron		★		☆	☆
N	Non-ferrous					
S	Superalloys		★	☆		
H	Hard materials					

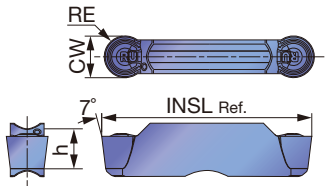
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated				Cermet	INSL (in)	h (in)
					T9225	AH7025	AH725	GH130	NS9530		
DTR300-150	3	3	0.118	0.059	●	●	●	●	●	0.787	0.197
DTR400-200	4	4	0.157	0.079	●	●	●	●	●	0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	●	●	●	●	0.984	0.217
DTR500-250	5	5	0.197	0.098	●	●	●	●	●	0.984	0.217
DTR600-300	6	6	0.236	0.118	●	●	●	●		0.984	0.217

●: Line up

DTR

Profiling and undercutting



		T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530	KS05F
P	Steel	★	★	☆	★		☆	★	★	
M	Stainless		★	☆	★		★	★		
K	Cast iron		★		★	☆	☆	★	☆	☆
N	Non-ferrous									☆
S	Superalloys		★	☆	★	★				★
H	Hard materials									

★ : First choice
☆ : Second choice

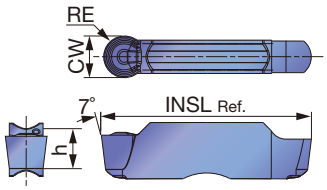
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet	Uncoated	INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530	KS05F		
DTR2-100	2	2	0.079	0.039		●		●			●		●	0.787	0.197
DTR3-150	3	3	0.118	0.059	●	●	●	●	●	●	●	●	●	0.787	0.197
DTR4-200	4	4	0.157	0.079	●	●	●	●	●	●	●	●	●	0.787	0.197
DTR5-250	5	5	0.197	0.098	●	●	●	●	●	●	●	●	●	0.984	0.217
DTR6-300	6	6	0.236	0.118	●	●	●	●		●	●		●	0.984	0.217
DTR8-400	8	8	0.315	0.157	●	●	●	●		●	●		●	1.181	0.264

● : Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

STR

Profiling and undercutting



P	Steel	★	★										
M	Stainless	★	★										
K	Cast iron	★	★							☆			
N	Non-ferrous									☆			
S	Superalloys	★	★							★			
H	Hard materials												

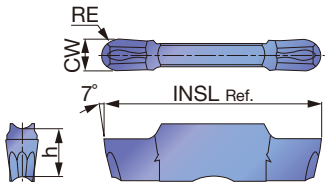
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Uncoated				INSL (in)	h (in)
					AH7025	AH8005					KS05F					
STR2-100	2	2	0.079	0.039	●	●					●				0.787	0.197
STR3-150	3	3	0.118	0.059	●	●					●				0.787	0.197
STR4-200	4	4	0.157	0.079	●	●					●				0.787	0.197
STR5-250	5	5	0.197	0.098	●	●					●				0.984	0.217
STR6-300	6	6	0.236	0.118	●	●					●				0.984	0.217
STR8-400	8	8	0.315	0.157	●	●					●				1.181	0.264

●: Line up

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆									
M	Stainless	★	☆	★									
K	Cast iron	★		☆									
N	Non-ferrous												
S	Superalloys	★	☆										
H	Hard materials												

★ : First choice
☆ : Second choice

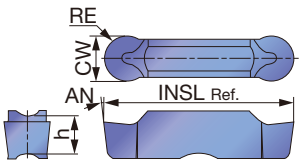
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated										INSL (in)	h (in)
					AH7025	AH725	GH130									
DTIU300-150	3	3	0.118	0.059	●	●	●								0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●								0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●								0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●								0.984	0.217

●: Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

DTA

Aluminum wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

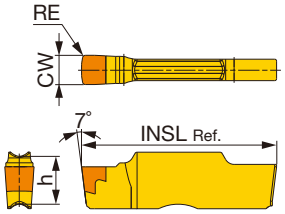
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

●: Line up

STH

External/internal/face turning



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice

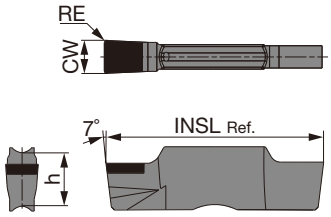
Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BXA10	INSL (in)	h (in)
STH300-SR	3	3	0.118	0.012	●	0.787	0.197
STH500-SR	5	5	0.197	0.012	●	0.984	0.217

●: Line up

Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

SGN

External/internal grooving



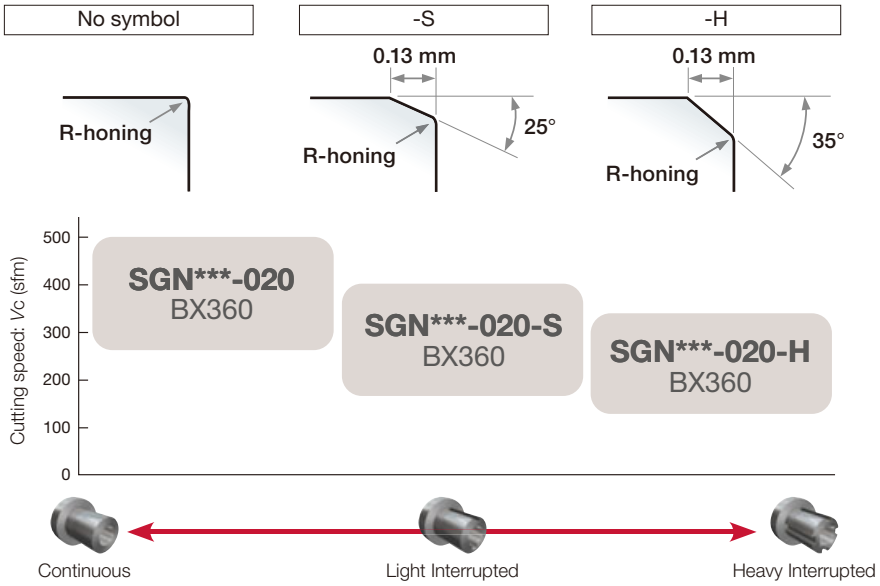
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN	INSL (in)	h (in)	Condition		
					BX360			Continuous	Light interrupted	Heavy interrupted
SGN200-020	2	2	0.079	0.008	●	0.787	0.197	○		
SGN200-020-S	2	2	0.079	0.008	●	0.787	0.197		○	
SGN200-020-H	2	2	0.079	0.008	●	0.787	0.197			○
SGN300-020	3	3	0.118	0.008	●	0.787	0.197	○		
SGN300-020-S	3	3	0.118	0.008	●	0.787	0.197		○	
SGN300-020-H	3	3	0.118	0.008	●	0.787	0.197			○
SGN400-020	4	4	0.157	0.008	●	0.787	0.197	○		
SGN400-020-S	4	4	0.157	0.008	●	0.787	0.197		○	
SGN400-020-H	4	4	0.157	0.008	●	0.787	0.197			○
SGN500-020-S	5	5	0.197	0.008	●	0.984	0.217		○	
SGN500-020-H	5	5	0.197	0.008	●	0.984	0.217			○

●: Line up

Edge preparations



Reference pages: Toolholders → F140, F141, Standard cutting conditions → F160

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Wear resistance	T9225, AH8005	262 - 984
		< 300 HB	Impact resistance	AH6235, GH130	164 - 394
		< 300 HB	Surface quality	NS9530	262 - 722
M	Stainless steel 303, 304, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Wear resistance	AH8005	164 - 394
		< 200 HB	Impact resistance	AH6235, GH130	164 - 394
K	Gray cast iron No.250B, etc.	-	First choice	T515	492 - 2297
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 591
	Ductile cast iron 65-45-12, etc.	-	First choice	T515	492 - 984
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH8005	66 - 197
		< HRC 40	Impact resistance	AH7025, AH725, AH6235	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	KS05F	66 - 328
		< HRC 40	Impact resistance	AH7025, AH725	66 - 262

Please see page F142 - F145 for feed: *f* (ipr).

STH

ISO	Grade	CW	Application	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
H	BXA10	0.118"	External turning	328 - 755	0.003 - 0.005	0.016 - 0.039
			Face turning	328 - 755	0.003 - 0.005	0.016 - 0.031
		0.197"	External turning	328 - 755	0.003 - 0.005	0.020 - 0.059
			Face turning	328 - 755	0.003 - 0.005	0.020 - 0.031

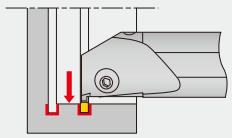
SGN

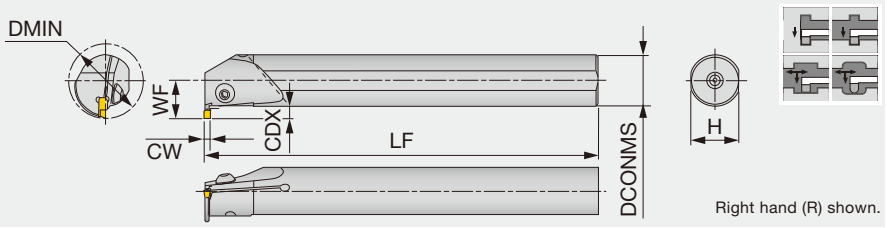
ISO	Grade	Edge preparation	Workpiece condition	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
H	BX360	No symbol	Continuous	262 - 492	0.0012 - 0.0031
		-S	Light interrupted	164 - 394	0.0012 - 0.0031
		-H	Heavy interrupted	131 - 328	0.0012 - 0.0024

MY-T SERIES

CGTR/L

Internal grooving and turning toolholder





Inch	CW	DMIN	CDX	DCONMS	H	LF	WF	Insert	Torque
A12Q-CGTR30U	0.118	1.000	0.138	0.750	0.709	7.090	0.571	G*30, GE30-AL	2.21
A16R-CGTR/L30U	0.118	1.260	0.197	1.000	0.961	7.870	0.728	G*30, GE30-AL	2.21
A16R-CGTR40U	0.157	1.260	0.197	1.000	0.961	7.870	0.728	G*40, GE40-AL	2.21

Metric	CW	DMIN	CDX	DCONMS	H	LF	WF	Insert	Torque*
S20Q-CGTR/L30	3	25	3.5	20	18	180	14.5	G*30, GE30-AL	3
S25R-CGTR/L30	3	32	5	25	23	200	18.5	G*30, GE30-AL	3
S25R-CGTR/L40	4	32	5	25	23	200	18.5	G*40, GE40-AL	3
S32S-CGTR/L40	4	40	6	32	30	250	23	G*40, GE40-AL	3
S25R-CGTR/L50	5	32	5	25	23	200	18.5	G*50	3
S32S-CGTR/L50	5	40	6	32	30	250	23	G*50	3

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS



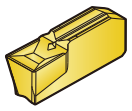


Designation	Clamping screw	Wrench
A/S**-CGTR/L...	BHM5-14	P-3

Reference pages: Inserts → F162 - F165, Standard cutting conditions → F166

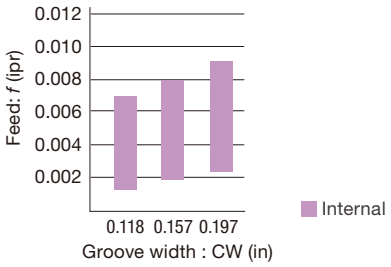
Internal grooving

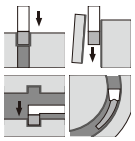
GN



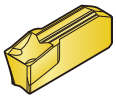
F165

1st choice for internal grooving
Low cutting force and good chip control for internal grooving
CW = 0.118" - 0.197"



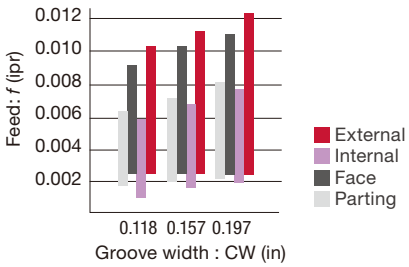


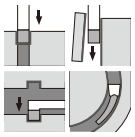
GE



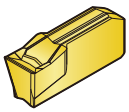
F163

1st choice for external grooving and parting
Excellent chip control
CW = 0.118" - 0.197"



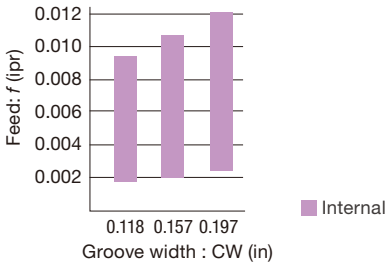


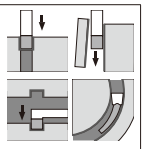
GF



F164

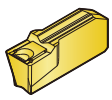
1st choice for face grooving
Low cutting force and good chip control for face grooving
CW = 0.118" - 0.197"





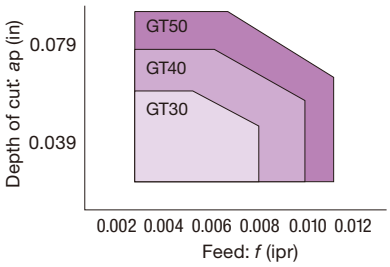
Grooving and turning

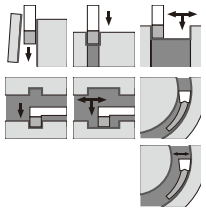
GT



F163

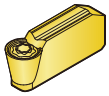
1st choice for turning
Low cutting force and good chip control for traversing
CW = 0.118" - 0.197"





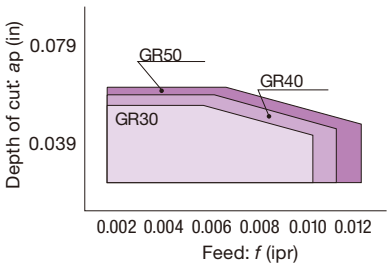
Profiling

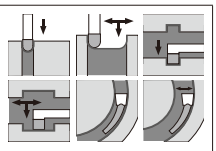
GR



F164

Full radius type
Low cutting force and good chip control for profiling
CW = 0.118" - 0.197"

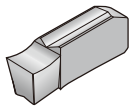




Please see page F*** for the product details.

For aluminum and non-ferrous metal

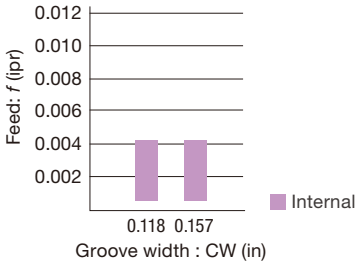
GE-AL

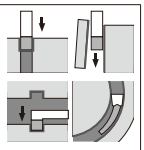


F165

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.118" - 0.157"



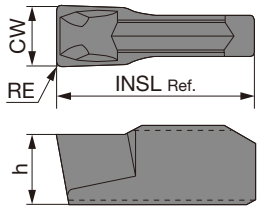


Please see page F*** for the product details.

INSERTS

GE

For external grooving and parting



P	Steel	★	★	★				★					
M	Stainless		★	★									
K	Cast iron		★	☆				☆					
N	Non-ferrous												
S	Superalloys		☆										
H	Hard materials												

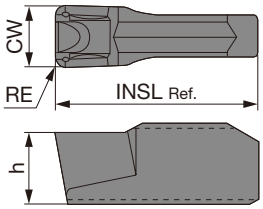
★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GE30	3	0.118	0.008	●	●	●	●	0.394	0.138
GE40	4	0.157	0.008	●	●	●	●	0.394	0.157
GE50	5	0.197	0.008	●	●	●	●	0.472	0.177

● : Line up

GT

For external grooving and turning



P	Steel	★	★	★				★					
M	Stainless		★	★									
K	Cast iron		★	☆				☆					
N	Non-ferrous												
S	Superalloys		☆										
H	Hard materials												

★ : First choice
☆ : Second choice

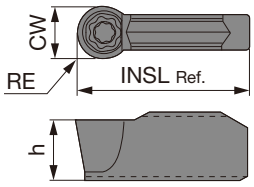
Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GT30	3	0.118	0.016		●	●	●	0.394	0.138
GT40	4	0.157	0.016		●	●	●	0.394	0.157
GT50	5	0.197	0.016	●	●	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F161, Standard cutting conditions → F166

GR

For profiling (full radius)



P	Steel	★	★	★				★		
M	Stainless		★	★						
K	Cast iron		★	☆				☆		
N	Non-ferrous									
S	Superalloys		☆							
H	Hard materials									

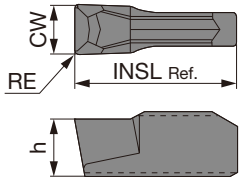
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated						Cermet				INSL (in)	h (in)
				T9225	AH120	GH730				NS9530					
GR30	3	0.118	0.059		●	●				●				0.394	0.138
GR40	4	0.157	0.079	●	●	●				●				0.394	0.157
GR50	5	0.197	0.098	●	●	●				●				0.472	0.177

● : Line up

GF

For face grooving



P	Steel	★			★					
M	Stainless	★								
K	Cast iron	☆			☆					
N	Non-ferrous									
S	Superalloys									
H	Hard materials									

★ : First choice
☆ : Second choice

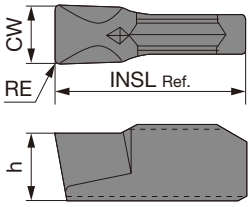
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet							INSL (in)	h (in)
				GH730			NS9530								
GF30	3	0.118	0.008	●			●							0.394	0.138
GF40	4	0.157	0.008	●			●							0.394	0.157
GF50	5	0.197	0.008	●			●							0.472	0.177

● : Line up

Reference pages: Toolholders → F161, Standard cutting conditions → F166

GN

For internal grooving



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

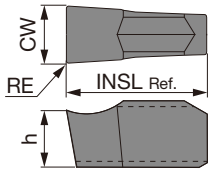
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-AL

For aluminum and non-ferrous metal



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

● : Line up

Reference pages: Toolholders → F161, Standard cutting conditions → F166

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 394
M	Stainless steel	GH730, AH120	164 - 394
K	Gray iron, Ductile cast iron	GH730, AH120	164 - 591
N	Aluminum alloy, Non-ferrous metal	KS05F	656 - 984

Internal

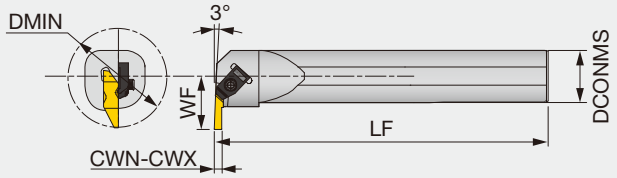
Operation	Feed: *f* (ipr) Groove width: CW		
	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Internal grooving (GE**)	0.0016 - 0.006	0.002 - 0.006	0.002 - 0.006
Internal grooving (GN**)	0.0016 - 0.006	0.002 - 0.007	0.002 - 0.008
Internal traversing (GT**)	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Internal traversing (GR**)	*ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.063 *f* = 0.002 - 0.012
Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, see page F129.
When vibration occurs in turning, please use the lower limit value in the above table

TUNGT-CLAMP

A-FLER/LT

Internal grooving and threading toolholder



Right hand (R) shown.

Inch	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque
A20-FLER/LT3	0.094	0.189	1.807	1.250	6.000	1.082	FLGT-3R/L...	2.21
A24-FLER/LT3	0.094	0.189	2.057	1.500	6.000	1.207	FLGT-3R/L...	2.21

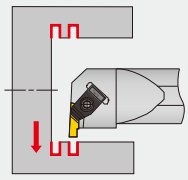
Note: The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

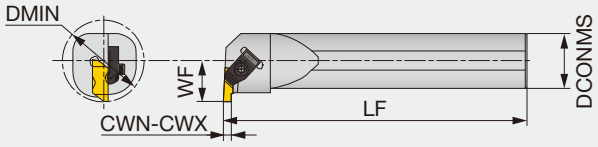
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A20-FLERT3, A24-FLERT3	TF-72	S-412	5/32HEX
A20-FLELT3, A24-FLELT3	TF-73	S-412	5/32HEX

A_M-FLER/L

Internal grooving and threading toolholder





Right hand (R) shown.

Inch	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque
A08-FLER/L2	0.031	0.125	0.730	0.500	8.000	0.437	FL*-2**L/R...	2.21
A10-FLER2	0.031	0.125	1.000	0.625	10.000	0.500	FL*-2**L...	2.21
A12-FLER/L2	0.031	0.128	1.125	0.750	10.000	0.562	FL*-2**L/R...	2.21
A16-FLER/L2	0.031	0.128	1.375	1.000	12.000	0.688	FL*-2**L/R...	2.21
A16-FLER/L3	0.031	0.250	1.375	1.000	12.000	0.688	FL*-3**L/R...	2.21

Metric	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque*
A25M-FLER/L3	1	3	34.9	25	300	17.7	FL*-3**L/R...	3
A32M-FLER/L3	1	3	44.45	32	350	22.1	FL*-3**L/R...	3
A40M-FLER3	1	3	50.8	40	350	24.5	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A08-FLER2	TF-146	S-310	7/64HEX
A08-FLEL2	TF-147	S-310	7/64HEX
A10-FLER2, A12-FLER2, A16-FLER2	TF-75	S-310	7/64HEX
A12-FLEL2, A16-FLEL2	TF-74	S-310	7/64HEX
A16-FLER3	TF-73	S-412	5/32HEX
A16-FLEL3	TF-72	S-412	5/32HEX

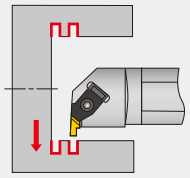
METRIC SPARE PARTS

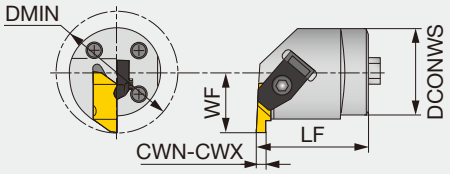
Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

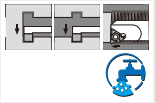
Reference pages: Inserts → F169 - F176, Standard cutting conditions → F176

HS-FLER/L

Internal grooving and threading head, for S-570 shank







Right hand (R) shown.

Metric	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: N·m

SPARE PARTS

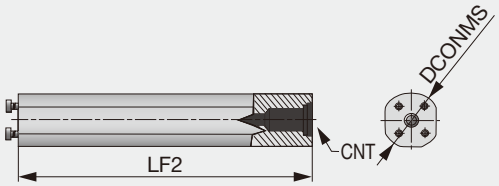




Designation	Clamp	Clamping screw	Wrench
HS**-FLER3W	TF-73	S-412	5/32HEX

S-570

Steel shank for head exchangeable tools



Metric	DCONMS	LF2	CNT
S-570-40M-40	40	273	1/2-14NPT
S-570-50M-50	50	366	1/2-14NPT

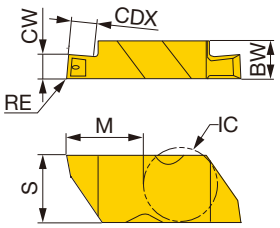
SPARE PARTS




Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4HEX

Reference pages: Inserts → F169 - F176, Standard cutting conditions → F176

FLG-CB (With chipbreaker, metric width)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

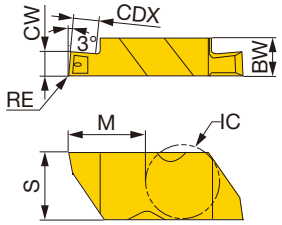
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-3M100R-CB	R	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M100L-CB	L	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M150R-CB	R	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M150L-CB	L	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200R-CB	R	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200L-CB	L	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M250R-CB	R	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M250L-CB	L	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300R-CB	R	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300L-CB	L	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLG-CB (With chipbreaker)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

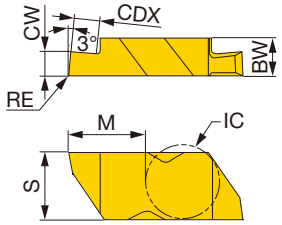
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2047R-CB	R	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L-CB	L	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R-CB	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L-CB	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R-CB	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L-CB	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R-CB	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L-CB	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R-CB	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L-CB	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R-CB	R	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L-CB	L	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLG



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	☆		
H	Hard materials			

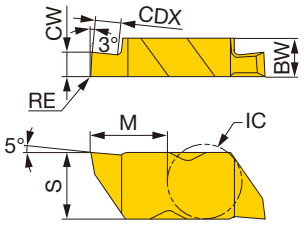
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041R	R	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041L	L	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047R	R	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L	L	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058R	R	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058L	L	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R	R	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L	L	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105R	R	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105L	L	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110R	R	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110L	L	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122R	R	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122L	L	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142R	R	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142L	L	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178R	R	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178L	L	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185R	R	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185L	L	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3250R	R	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050
FLG-3250L	L	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLGP (Positive rake)



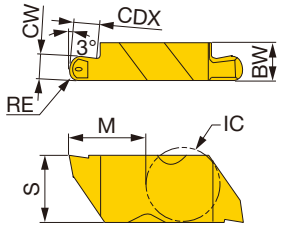
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGP-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

FLR-CB (Full nose radius, with chipbreaker)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

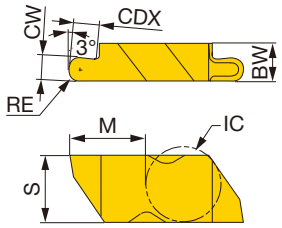
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-3031R-CB	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L-CB	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R-CB	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L-CB	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R-CB	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L-CB	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLR (Full nose radius)



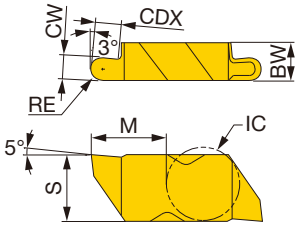
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-2031R	R	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2031L	L	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2047R	R	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2047L	L	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2062R	R	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-2062L	L	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLR-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

FLRP (Full nose radius and positive rake)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

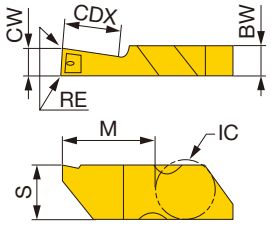
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRP-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLRP-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLGD-CB (Single edge deep, with chipbreaker)



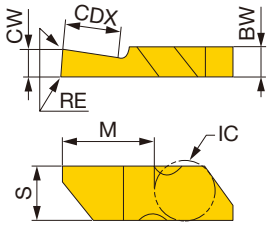
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

FLGD (Single edge deep)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

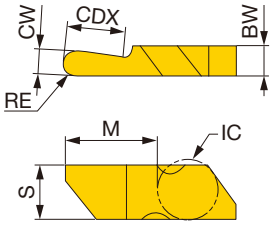
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3094R	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLRD (Full nose radius, single edge deep)



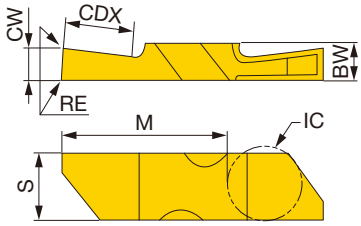
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRD-3062R	R	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3062L	L	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094R	R	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094L	L	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016

● : Line up

FLGT (Double end deep)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

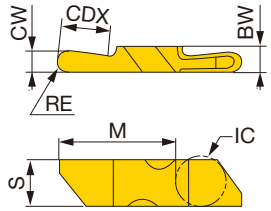
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGT-3094R	R	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3094L	L	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3125R	R	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3125L	L	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189R	R	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189L	L	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

Reference pages: Toolholders → F167, F168, Standard cutting conditions → F176

FLRT (Double end deep FNR)



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	☆			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRT-3062R	R	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3062L	L	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094R	R	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094L	L	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

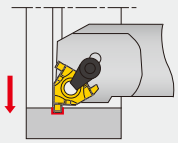
STANDARD CUTTING CONDITIONS

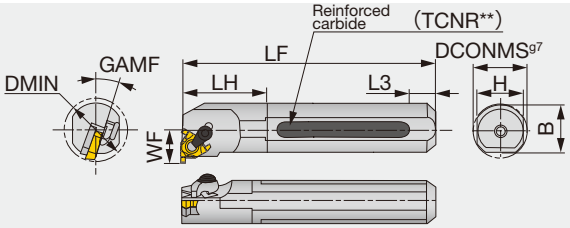
ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	High carbon steel 1045, etc.	AH110	Grooving	328 - 656	0.005 - 0.014
	Alloy steel 4137, etc.	AH110	Grooving	164 - 262	0.005 - 0.012
M	Stainless steel 304, etc.	AH110	Grooving	164 - 492	0.004 - 0.008
K	Gray cast iron No.250B, etc.	AH110	Grooving	164 - 591	0.004 - 0.010
	Ductile cast iron 60-40-18, etc.	AH110	Grooving	164 - 394	0.004 - 0.010

Reference pages: Toolholders → F167, F168

CNR/L

Internal threading and grooving toolholder (The -DT holders can be used either with the insert screw or top-clamp)





Right hand (R) shown.

Inch	Material	CWN	CWX	DMIN	DCONMS	H	B	LF	LH	WF	L3	GAMF	Insert	Torque
S12-CNR3DT	Steel	0.039	0.089	0.950	0.750	0.725	0.738	7.000	1.200	0.552	-	15°	GTGN-16...	2.58
S16-CNR3DT	Steel	0.039	0.089	1.150	1.000	0.906	0.953	8.000	1.500	0.652	-	15°	GTGN-16...	2.58
S20-CNR3DT	Steel	0.039	0.089	1.450	1.250	1.188	1.219	10.000	1.900	0.788	-	15°	GTGN-16...	2.58

Metric	Material	CWN	CWX	DMIN	DCONMS	H	B	LF	LH	WF	L3	GAMF	Insert	Torque*
TCNR0020R16DT	Reinforced	1	2.25	24	20	18	-	200	30	14	49	15°	GTGN-16...	3.5
TCNR0025S16DT	Reinforced	1	2.25	29	25	23	-	250	38	16.5	64	15°	GTGN-16...	3.5
CNR/L0020P16	Steel	1	2.25	24	20	18	19	170	30	14	-	15°	GTGN-16...	3.5
CNR/L0025R16	Steel	1	2.25	29	25	23	24	200	38	16.5	-	15°	GTGN-16...	3.5
CNR/L0032S16	Steel	1	2.25	37	32	30	31	250	48	20.1	-	15°	GTGN-16...	3.5

Note: A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the toolholder.
Use right-hand toolholders (T/CNR...) with right-hand inserts (**IR...); and left-hand toolholders (T/CNL...) with left-hand inserts (**IL...).
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Torque: Recommended clamping torque: lbs·ft (*N·m)

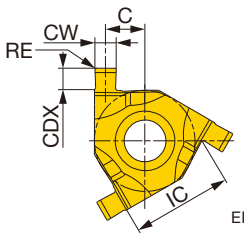
SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim (Optional)	Wrench1	Wrench2
S**-CNR3DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
CNR00***16	CSP16	-	-	G16EL/IR-S	-	T-15F
CNL00***16	CSP16	-	-	G16ER/IL-S	-	T-15F

Reference pages: Inserts, Standard cutting conditions → F178

INSERT

GTGN16



ER/IL shown.

P	Steel	★			
M	Stainless	★			
K	Cast iron				
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND (Internal)	CW±0.03 (mm)	CW±0.001 (in)	RE (in)	Coated			Insert size	CDX (in)	IC (in)	C (in)	Shim	
					SH730							Dual-clamp toolholder: screw-on and clamp-on	Clamp-on toolholder
GTGN-16ER/IL100	L	1	0.039	0.004	●			16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	R	1	0.039	0.004	●			16	0.049	0.375	0.166	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL120	L	1.2	0.047	0.004	●			16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	R	1.2	0.047	0.004	●			16	0.051	0.375	0.162	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL140	L	1.4	0.055	0.004	●			16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	R	1.4	0.055	0.004	●			16	0.059	0.375	0.158	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL170	L	1.7	0.067	0.004	●			16	0.067	0.375	0.144	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR170	R	1.7	0.067	0.004	●			16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	L	1.95	0.077	0.004	●			16	0.067	0.375	0.148	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR195	R	1.95	0.077	0.004	●			16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	L	2.25	0.089	0.004	●			16	0.071	0.375	0.142	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR225	R	2.25	0.089	0.004	●			16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S

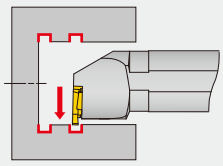
Note: GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

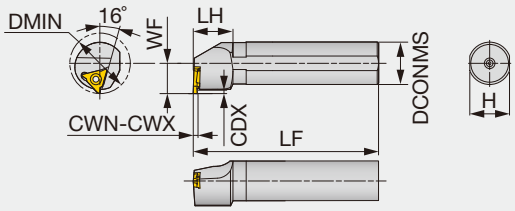
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, 4140, etc.	SH730	164 - 492	0.002 - 0.004
M	Stainless steel 304, 316, etc.	SH730	98 - 492	0.002 - 0.004
S	Heat-resistant alloys, Titanium alloys, etc. Ti-6Al-4V, etc.	SH730	98 - 328	0.002 - 0.004

Reference pages: Toolholders → F177





Right hand (R) shown.

Inch	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque
S16R-SGTR/L3	0.013	0.098	1.38	0.100	1.00	0.910	7.78	1.18	0.690	GBL/R32...	2.58

Metric	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
S25R-SGTR/L16	0.33	2.5	35	2	25	23	200	30	17.5	GBL/R32...	3.5
S32S-SGTR/L22	1.25	4.5	40	2.5	32	30	250	30	23	GBL/R43...	5

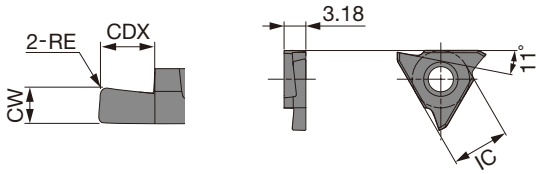
Use right-hand toolholders (SGTR) with left-hand inserts (GBL); and left-hand toolholders (SGTL) with right-hand inserts (GBR).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
S16R-SGTR/L3, S25R-SGTR/L16	CSTB-4S	T-15F
S32S-SGTR/L22	CSTB-5S	T-20F

INSERTS

GBR/L32



Right hand (R) shown.
Unit: mm

P	Steel	★					★				★								
M	Stainless	★																	
K	Cast iron	★					☆												
N	Non-ferrous										★								
S	Superalloys	☆									☆								
H	Hard materials																		

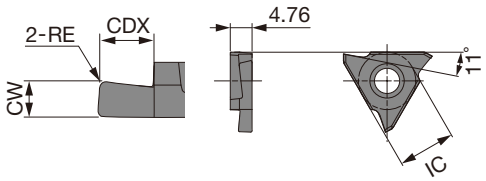
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH710	Cermet NS9530	Uncoated KS05F	CDX (in)	IC (mm)
GBR32033	R	0.33	0.013	0.0012	●	●	●	0.031	9.53
GBL32033	L	0.33	0.013	0.0012	●			0.031	9.53
GBR32050	R	0.5	0.020	0.002	●	●	●	0.047	9.53
GBL32050	L	0.5	0.020	0.002	●			0.047	9.53
GBR32075	R	0.75	0.030	0.002	●	●	●	0.079	9.53
GBL32075	L	0.75	0.030	0.002	●	●		0.079	9.53
GBR32095	R	0.95	0.037	0.002	●	●	●	0.079	9.53
GBL32095	L	0.95	0.037	0.002	●	●		0.079	9.53
GBR32100	R	1	0.039	0.002	●	●	●	0.079	9.53
GBL32100	L	1	0.039	0.002	●	●		0.079	9.53
GBR32125	R	1.25	0.049	0.008	●	●	●	0.079	9.53
GBL32125	L	1.25	0.049	0.008	●	●		0.079	9.53
GBR32145	R	1.45	0.057	0.008	●	●	●	0.079	9.53
GBL32145	L	1.45	0.057	0.008	●			0.079	9.53
GBR32150	R	1.5	0.059	0.008	●	●	●	0.079	9.53
GBL32150	L	1.5	0.059	0.008	●			0.079	9.53
GBR32200	R	2	0.079	0.008	●	●	●	0.098	9.53
GBL32200	L	2	0.079	0.008	●			0.098	9.53
GBR32250	R	2.5	0.098	0.008	●	●	●	0.098	9.53
GBL32250	L	2.5	0.098	0.008	●			0.098	9.53

● : Line up

Reference pages: Inserts → F179 - F181, Standard cutting conditions → F181

GBR/L43



Right hand (R) shown.
Unit: mm

P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	
N	Non-ferrous			★
S	Superalloys	☆		☆
H	Hard materials			

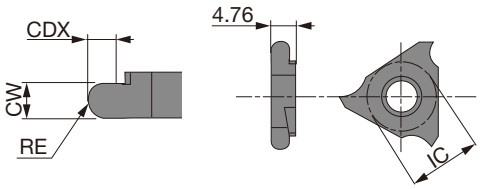
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH710	Cermet NS9530	Uncoated KS05F	CDX (in)	IC (mm)
GBR43125	R	1.25	0.049	0.008	●	●	●	0.079	12.7
GBL43125	L	1.25	0.049	0.008	●			0.079	12.7
GBR43145	R	1.45	0.057	0.008	●	●	●	0.079	12.7
GBL43145	L	1.45	0.057	0.008	●			0.079	12.7
GBR43150	R	1.50	0.059	0.008	●	●	●	0.138	12.7
GBL43150	L	1.50	0.059	0.008	●	●		0.138	12.7
GBR43175	R	1.75	0.069	0.008	●	●	●	0.138	12.7
GBL43175	L	1.75	0.069	0.008	●	●		0.138	12.7
GBR43185	R	1.85	0.073	0.008	●	●	●	0.138	12.7
GBL43185	L	1.85	0.073	0.008	●	●		0.138	12.7
GBR43200	R	2	0.079	0.008	●	●	●	0.138	12.7
GBL43200	L	2	0.079	0.008	●	●		0.138	12.7
GBR43230	R	2.3	0.091	0.008	●	●	●	0.138	12.7
GBL43230	L	2.3	0.091	0.008	●	●		0.138	12.7
GBR43250	R	2.5	0.098	0.012	●	●	●	0.197	12.7
GBL43250	L	2.5	0.098	0.012	●			0.197	12.7
GBR43265	R	2.65	0.104	0.012	●	●	●	0.197	12.7
GBL43265	L	2.65	0.104	0.012	●			0.197	12.7
GBR43280	R	2.8	0.110	0.012	●	●	●	0.197	12.7
GBL43280	L	2.8	0.110	0.012	●			0.197	12.7
GBR43300	R	3	0.118	0.012	●	●	●	0.197	12.7
GBL43300	L	3	0.118	0.012	●			0.197	12.7
GBR43330	R	3.3	0.130	0.012	●	●	●	0.197	12.7
GBL43330	L	3.3	0.130	0.012	●			0.197	12.7
GBR43350	R	3.5	0.138	0.012	●	●	●	0.197	12.7
GBL43350	L	3.5	0.138	0.012	●			0.197	12.7
GBR43400	R	4	0.157	0.016	●	●	●	0.197	12.7
GBL43400	L	4	0.157	0.016	●			0.197	12.7
GBR43430	R	4.3	0.169	0.016	●	●	●	0.197	12.7
GBL43430	L	4.3	0.169	0.016	●			0.197	12.7
GBR43450	R	4.5	0.177	0.016	●	●	●	0.197	12.7
GBL43450	L	4.5	0.177	0.016	●			0.197	12.7

● : Line up

Reference pages: Toolholders → F179

GBR/L43-R (full radius)



Right hand (R) shown.
Unit: mm

P	Steel	★				★													
M	Stainless	★																	
K	Cast iron	★				☆													
N	Non-ferrous									★									
S	Superalloys	☆								☆									
H	Hard materials																		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated			Cermet			Uncoated					CDX (in)	IC (mm)
					AH710			NS9530			KS05F						
GBR43050R	R	1	0.039	0.020	●			●			●					0.079	12.7
GBL43050R	L	1	0.039	0.020	●						●					0.079	12.7
GBR43075R	R	1.5	0.059	0.030	●			●			●					0.138	12.7
GBL43075R	L	1.5	0.059	0.030	●						●					0.138	12.7
GBR43100R	R	2	0.079	0.039	●			●			●					0.138	12.7
GBL43100R	L	2	0.079	0.039	●						●					0.138	12.7
GBR43125R	R	2.5	0.098	0.049	●			●			●					0.197	12.7
GBL43125R	L	2.5	0.098	0.049	●						●					0.197	12.7
GBR43150R	R	3	0.118	0.059	●			●			●					0.197	12.7
GBL43150R	L	3	0.118	0.059	●						●					0.197	12.7
GBR43200R	R	4	0.157	0.079	●			●			●					0.197	12.7
GBL43200R	L	4	0.157	0.079	●						●					0.197	12.7

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steels, Alloy steels 1045, etc. 4140, etc.	150 - 240HB	NS9530	328 - 656	0.001 - 0.010
		150 - 240HB	AH710	197 - 492	0.002 - 0.010
M	Stainless steel 304, etc.	≤ 240HB	AH710	197 - 492	0.002 - 0.006
K	Cast irons No.250B, etc.	Tensile strength ≤ 350 N/mm^2	AH710	197 - 492	0.002 - 0.006
N	Non-ferrous metal Aluminum, etc.	-	KS05F	656 - 984	0.002 - 0.006

Reference pages: Toolholders → F179

Toolholders for internal grooving, with through coolant

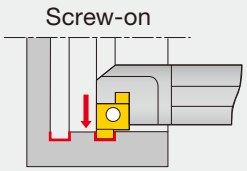
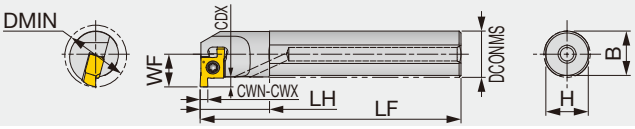


Fig. 1



Fig. 2



Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque	Fig.
A08H-SNGR06-D080	Steel	1	2	8	1.5	8	7	-	100	18	4.73	6GMR..., 6GR...	0.7	1
A08H-SNGR07-D100	Steel	1	2	10	1.5	8	7	-	100	23	5.8	7GMR..., 7GR...	1.0	1
A10K-SNGR07-D120	Steel	1	2	12	1.5	10	9	-	125	29	6.8	7GMR..., 7GR...	1.0	1
A10K-SNGR08-D140	Steel	1.5	3.5	14	2	10	9	-	125	15	7.6	8GMR..., 8GR...	1.0	2
A12M-SNGR08-D160	Steel	1.5	3.5	16	2	12	11	11.5	150	18	8.6	8GMR..., 8GR...	1.0	2
A16Q-SNGR09-D200	Steel	1.5	3.5	20	3	16	15	15.5	180	20	11.6	9GMR..., 9GR...	1.3	2
A20R-SNGR09-D240	Steel	1.5	3.5	24	3	20	18	19	200	25	13.6	9GMR..., 9GR...	1.3	2
E08X-SNGR07-D100	Carbide	1	2	10	1.5	8	7.5	-	120.5	35	5.8	7GMR..., 7GR...	1.0	1
E10X-SNGR07-D120	Carbide	1	2	12	1.5	10	9	-	143.5	45	6.8	7GMR..., 7GR...	1.0	1
E10X-SNGR08-D140	Carbide	1.5	3.5	14	2	10	9	-	146	-	7.6	8GMR..., 8GR...	1.0	2
E12X-SNGR08-D160	Carbide	1.5	3.5	16	2	12	11	-	174.8	-	8.6	8GMR..., 8GR...	1.0	2
E16X-SNGR09-D200	Carbide	1.5	3.5	20	3	16	15	-	194.6	-	11.6	9GMR..., 9GR...	1.5	2

Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR).
Torque: Recommended clamping torque: N·m

SPARE PARTS





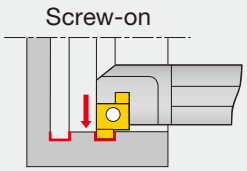
Designation	Clamping screw	Wrench
A**-SNGR06-D...	CSTB-2L040	T-6F
A**-SNGR07-D...	CSTB-2.2S	T-7F
A**-SNGR08-D...	CSTB-2.2	T-7F
A**-SNGR09-D...	CSTB-2.5L080	T-8F
E**-SNGR07-D...	CSTB-2.2S	T-7F
E**-SNGR08-D...	CSTB-2.2	T-7F
E**-SNGR09-D...	CSTB-2.5L080	T-8F

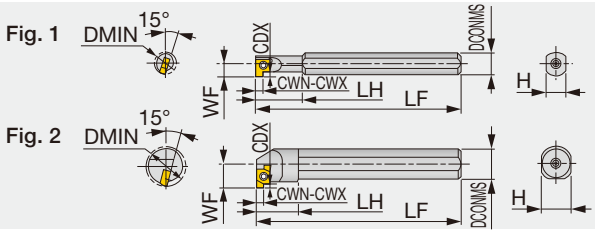
External
Internal
Face
Parting
Others

Reference pages: Inserts → F184, F185, Standard cutting conditions → F186

SNGR/L

Toolholders for internal grooving





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque	Fig.
SNGR/L08H06	Steel	1	2	8	1.5	8	7	100	18	4.7	6GMR..., 6GR/L...	0.7	1
SNGR/L08H07	Steel	1	2	10	1.5	8	7	100	23	5.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10K07	Steel	1	2	12	1.5	10	9	125	29	6.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10K08	Steel	1.5	3.5	14	2	10	9	125	15	7.6	8GMR..., 8GR/L...	1.0	2
SNGR/L12M08	Steel	1.5	3.5	16	2	12	11	150	18	8.6	8GMR..., 8GR/L...	1.0	2
SNGR/L16Q09	Steel	1.5	3.5	20	3	16	15	180	20	11.6	9GMR..., 9GR/L...	1.3	2
SNGR/L20R09	Steel	1.5	3.5	24	3	20	18	200	25	13.6	9GMR..., 9GR/L...	1.3	2
SNGR/L08K06SC	Carbide	1	2	8	1.5	8	7	125	28	4.7	6GMR..., 6GR/L...	0.7	1
SNGR/L08K07SC	Carbide	1	2	10	1.5	8	7	125	35	5.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10M07SC	Carbide	1	2	12	1.5	10	9	150	45	6.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10M08SC	Carbide	1.5	3.5	14	2	10	9	150	45	7.6	8GMR..., 8GR/L...	1.0	2
SNGR/L12Q08SC	Carbide	1.5	3.5	16	2	12	11	180	-	8.6	8GMR..., 8GR/L...	1.0	2
SNGR/L16R09SC	Carbide	1.5	3.5	20	3	16	15	200	-	11.6	9GMR..., 9GR/L...	1.5	2

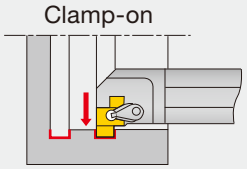
Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR), and use the left-hand insert (☐GL) with the left-hand holder (☐NGL).
Torque: Recommended clamping torque: N·m

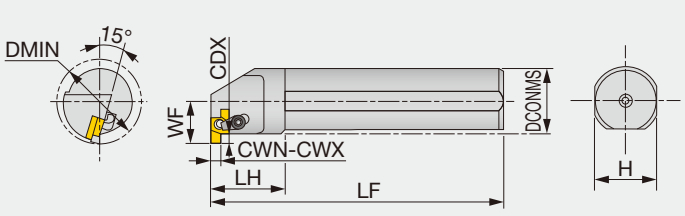
SPARE PARTS

Designation	Clamping screw	Wrench
SNGR/L***06	CSTB-2L040	T-6F
SNGR/L***07	CSTB-2.2S	T-7F
SNGR/L***08	CSTB-2.2	T-7F
SNGR/L***09	CSTB-2.5L080	T-8F
SNGR/L***06SC	CSTB-2L040	T-6F
SNGR/L***07SC	CSTB-2.2S	T-7F
SNGR/L***08SC	CSTB-2.2	T-7F
SNGR/L***09SC	CSTB-2.5L080	T-8F

CNGR/L

Toolholders for internal grooving





Right hand (R) shown.

Metric	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque
CNGR/L25S15	2	5	32	5	25	23	250	30	18.1	15GR/L...	7
CNGR/L32T15	2	5	40	5	32	30	300	35	22.1	15GR/L...	7
CNGR/L40U15	2	5	48	5	40	38	350	45	26.1	15GR/L...	7

Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR), and use the left-hand insert (☐GL) with the left-hand holder (☐NGL).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp set	Screw	Shim	Wrench
CNGR...	CSP22	DTS5-3.5	SGSR151	T-20F
CNGL...	CSP22	DTS5-3.5	SGSL151	T-20F

Optional parts for CNG holders

Use the following parts for screw clamp options.

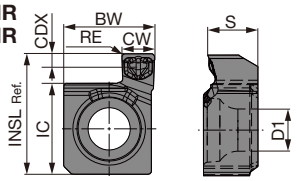


Designation	Clamping screw	Wrench
CNGR/L...	CSTB-3.5L	T-15F

Reference pages: Inserts → F184, F185, Standard cutting conditions → F186

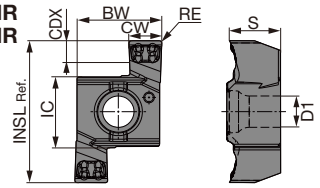
**GMR/L

6GMR
7GMR



Single edge

8GMR
9GMR



Double edge

Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated AH7025	CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
6GMR100-015	R	0.039	1	0.15	●	1.5	0.219	0.092	0.187	0.254	0.091
7GMR200-020	R	0.079	2	0.2	●	1.5	0.219	0.121	0.219	0.290	0.102
8GMR150-020	R	0.059	1.5	0.2	●	2	0.242	0.152	0.219	0.400	0.102
9GMR200-020	R	0.079	2	0.2	●	3	0.305	0.183	0.250	0.510	0.113
9GMR300-020	R	0.118	3	0.2	●	3	0.305	0.183	0.250	0.510	0.113

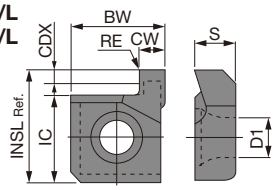
● : Line up

External
Internal
Face
Parting
Others

Reference pages: Toolholders → F182, F183, Standard cutting conditions → F186

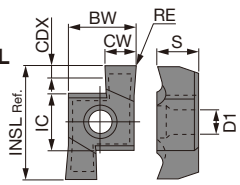
**GR/L

6GR/L
7GR/L



Single edge

8GR/L
9GR/L
15GR/L



Double edge

Right hand (R) shown.

		Cermet	Uncoated	
P	Steel	★		★
M	Stainless			★
K	Cast iron	☆	★	
N	Non-ferrous		★	
S	Superalloys		☆	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
6GR100	R	0.039	1	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.098
6GL100	L	0.039	1	0.2			●	1.5	0.220	0.092	0.187	0.254	0.098
6GR150	R	0.059	1.5	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.098
6GL150	L	0.059	1.5	0.2		●	●	1.5	0.220	0.092	0.187	0.254	0.098
6GR200	R	0.079	2	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.098
6GL200	L	0.079	2	0.2		●	●	1.5	0.220	0.092	0.187	0.254	0.098
7GR100	R	0.039	1	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GR150	R	0.059	1.5	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GR200	R	0.079	2	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GL200	L	0.079	2	0.2		●	●	1.5	0.220	0.121	0.219	0.290	0.102
8GR150	R	0.059	1.5	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GR200	R	0.079	2	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL200	L	0.079	2	0.2		●		2	0.244	0.152	0.219	0.400	0.102
8GR250	R	0.098	2.5	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL250	L	0.098	2.5	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
8GR300	R	0.118	3	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL300	L	0.118	3	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
8GR350	R	0.138	3.5	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
9GR150	R	0.059	1.5	0.2	●	●	●	2	0.303	0.183	0.250	0.510	0.114
9GL150	L	0.059	1.5	0.2	●		●	2	0.303	0.183	0.250	0.510	0.114
9GR200	R	0.079	2	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GL200	L	0.079	2	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GR250	R	0.098	2.5	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GL250	L	0.098	2.5	0.2	●		●	3	0.303	0.183	0.250	0.510	0.114
9GR300	R	0.118	3	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GL300	L	0.118	3	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GR350	R	0.138	3.5	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.114
9GL350	L	0.138	3.5	0.2	●		●	3	0.303	0.183	0.250	0.510	0.114
15GR200	R	0.079	2	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR250	R	0.098	2.5	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR300	R	0.118	3	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GL300	L	0.118	3	0.2			●	3	0.425	0.201	0.362	0.819	0.189
15GR350	R	0.138	3.5	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR400	R	0.157	4	0.2	●	●	●	4	0.425	0.201	0.362	0.819	0.189
15GR450	R	0.177	4.5	0.2		●	●	4	0.425	0.201	0.362	0.819	0.189
15GL450	L	0.177	4.5	0.2		●		4	0.425	0.201	0.362	0.819	0.189
15GR500	R	0.197	5	0.2		●	●	5	0.425	0.201	0.362	0.819	0.189

Note: Use right-hand holder (□NGR ～) with right-hand insert (□GR ～); and left-hand holder (□NGL ～) with left-hand insert (□GL ～).

● : Line up

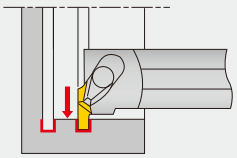
Reference pages: Toolholders → F182, F183, Standard cutting conditions → F186

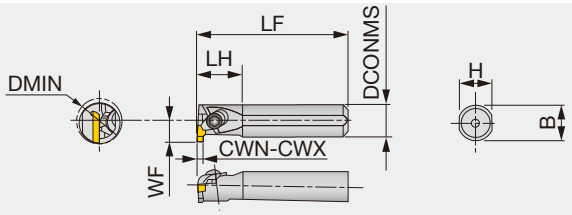
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed rate: *f* (ipr) **GMR...	Feed rate: *f* (ipr) **GR/L...
P	Carbon steel 1045, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
	Alloy steel 4137, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
M	Stainless steel 304, etc.	AH7025	164 - 394	0.0012 - 0.0047	-
		UX30	131 - 328	-	0.0012 - 0.0039
K	Gray cast irons No.250B, etc.	AH7025	164 - 722	0.0012 - 0.0047	-
		TH10	197 - 656	-	0.002 - 0.0059
	Ductile cast irons 60-40-18, etc.	AH7025	164 - 591	0.0012 - 0.0047	-
		TH10	131 - 525	-	0.002 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.0012 - 0.0047	-
		TH10	66 - 164	-	0.002 - 0.0031
	Superalloys Inconel718, etc.	AH7025	66 - 197	0.0012 - 0.0047	-
		TH10	33 - 98	-	0.0012 - 0.0031

CGXR/L

Internal grooving





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque
CGXR/L0016	Steel	1	3	20	3	16	15	15.5	150	24	11.3	GIR/L52...	2.2
CGXR/L0020	Steel	1	3	24	3	20	18	19	180	30	13.3	GIR/L52...	2.2
CGXR/L0025	Steel	1	5	32	5.3	25	23	24	200	38	18	GIR/L63...	5
CGXR/L0032	Steel	1	5	40	5.3	32	30	31	250	48	23	GIR/L63...	5
CGXR/L0040	Steel	1	5	48	5.3	40	37	38.5	300	60	27	GIR/L63...	5
CGXR/L16SC	Carbide	1	3	20	3	16	15	-	200	24	11.3	GIR/L52...	2.2

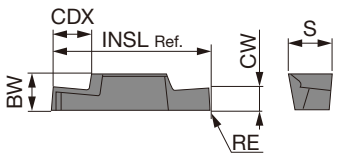
Note: Use right-hand holder (CGXR) with right-hand insert (GIR); and left-hand holder (L) with left-hand insert (GIL).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp set	Wrench1	Wrench2
CGXR/L0016/20	CSW-0	-	P-2.5T
CGXR/L0025/32/40	CSW-2	P-4	-
CGXR/L16SC	CSW-0	-	P-2.5T

INSERT

GIR/L



Right hand (R) shown.

P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

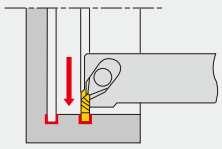
Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Cermet NS9530	Uncoated TH10	CDX (mm)	INSL (mm)	BW (mm)	S (mm)
GIR5210-02	R	0.039	1	0.2	●	●	1.5	15	3.5	4.4
GIL5210-02	L	0.039	1	0.2	●	●	1.5	15	3.5	4.4
GIR5215-02	R	0.059	1.5	0.2	●	●	2.3	15	3.5	4.4
GIL5215-02	L	0.059	1.5	0.2	●	●	2.3	15	3.5	4.4
GIR5220-02	R	0.079	2	0.2	●	●	3	15	3.5	4.4
GIL5220-02	L	0.079	2	0.2	●	●	3	15	3.5	4.4
GIR5225-02	R	0.098	2.5	0.2	●	●	3	15	3.5	4.4
GIL5225-02	L	0.098	2.5	0.2		●	3	15	3.5	4.4
GIR5230-02	R	0.118	3	0.2	●	●	3	15	3.5	4.4
GIL5230-02	L	0.118	3	0.2		●	3	15	3.5	4.4
GIR6310-02	R	0.039	1	0.2	●	●	1.5	24	5.5	6.4
GIL6310-02	L	0.039	1	0.2		●	1.5	24	5.5	6.4
GIR6315-02	R	0.059	1.5	0.2	●	●	2.3	24	5.5	6.4
GIL6315-02	L	0.059	1.5	0.2	●	●	2.3	24	5.5	6.4
GIR6320-02	R	0.079	2	0.2	●	●	3	24	5.5	6.4
GIL6320-02	L	0.079	2	0.2	●	●	3	24	5.5	6.4
GIR6325-02	R	0.098	2.5	0.2	●	●	3.8	24	5.5	6.4
GIL6325-02	L	0.098	2.5	0.2	●	●	3.8	24	5.5	6.4
GIR6330-02	R	0.118	3	0.2	●	●	4.5	24	5.5	6.4
GIL6330-02	L	0.118	3	0.2	●	●	4.5	24	5.5	6.4
GIR6335-02	R	0.138	3.5	0.2	●	●	5.3	24	5.5	6.4
GIL6335-02	L	0.138	3.5	0.2	●	●	5.3	24	5.5	6.4
GIR6340-02	R	0.157	4	0.2	●	●	5.3	24	5.5	6.4
GIL6340-02	L	0.157	4	0.2	●	●	5.3	24	5.5	6.4
GIR6345-02	R	0.177	4.5	0.2	●	●	5.3	24	5.5	6.4
GIL6345-02	L	0.177	4.5	0.2		●	5.3	24	5.5	6.4
GIR6350-02	R	0.197	5	0.2	●	●	5.3	24	5.5	6.4
GIL6350-02	L	0.197	5	0.2		●	5.3	24	5.5	6.4

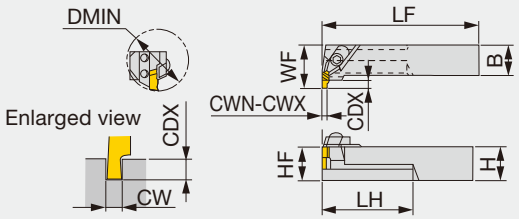
Use right-hand toolholders (CGXR〜) with right-hand inserts (GIR); and left-hand toolholders (GX-****LI) with left-hand inserts (XGR).

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 492	0.002 - 0.004	0.003 - 0.006	0.003 - 0.008
K	Cast iron, Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.006	0.003 - 0.008





Right hand (R) shown.

Inch	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-1212RIU	0.039	0.177	2.165	0.059 - 0.236	0.750	0.75	6.30	2.36	0.75	1.37	XGL63...	3.69
GX-1616RIU	0.039	0.177	2.165	0.059 - 0.236	1.00	1.00	7.87	1.96	1.00	1.37	XGL63...	3.69

Metric	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2525R/LI	1	4.5	55	1.5 - 6	25	25	200	70	25	35	XGL/R63...	5

Use right-hand toolholders (GX-****RI) with left-hand inserts (XGL...); and left-hand toolholders (GX-****LI) with right-hand inserts (XGR...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

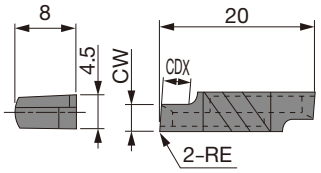
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-1212RIU	CP81B	RT-1	SL-7R	BHM4-8	P-4
GX-2525RI	CP81B	RT-1	SL-2R	BHM3-8	P-4
GX-1616RIU, GX-2525LI	CP81B	RT-1	SL-2L	BHM3-8	P-4

Note: Max. groove width and max. groove depth will depend on the insert type.

INSERT

XGR/L



Right hand (R) shown.
Unit: mm

		Cermet		Uncoated		
		NS9530		TH10	UX30	
P	Steel	★		☆	★	
M	Stainless				★	
K	Cast iron	☆		★		
N	Non-ferrous			★		
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (in)
XGR6310-02	R	1	0.039	0.008	●	●	●	0.059
XGL6310-02	L	1	0.039	0.008	●	●	●	0.059
XGR6315-02	R	1.5	0.059	0.008	●	●	●	0.091
XGL6315-02	L	1.5	0.059	0.008	●	●	●	0.091
XGR6320-02	R	2	0.079	0.008	●	●	●	0.118
XGL6320-02	L	2	0.079	0.008	●	●	●	0.118
XGR6325-02	R	2.5	0.098	0.008	●	●	●	0.150
XGL6325-02	L	2.5	0.098	0.008	●	●	●	0.150
XGR6330-02	R	3	0.118	0.008	●	●	●	0.177
XGL6330-02	L	3	0.118	0.008	●	●	●	0.177
XGR6335-02	R	3.5	0.138	0.008	●	●	●	0.209
XGL6335-02	L	3.5	0.138	0.008	●	●	●	0.209
XGR6340-02	R	4	0.157	0.008	●	●	●	0.236
XGL6340-02	L	4	0.157	0.008	●	●	●	0.236
XGR6345-02	R	4.5	0.177	0.008	●	●	●	0.236
XGL6345-02	L	4.5	0.177	0.008	●	●	●	0.236

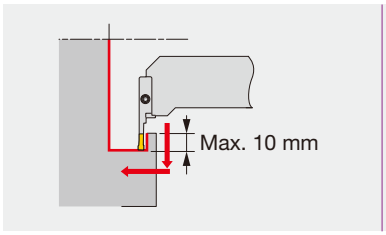
Use right-hand toolholders (GX-****RI) with left-hand inserts (XGL...)
left-hand toolholders (GX-****LI) with right-hand inserts (XGR...).

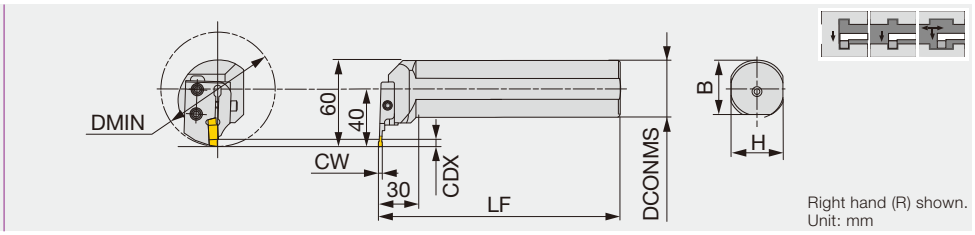
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons , Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
H	Hardened steel	BX360	164 - 591	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006

MY-T SERIES
CGWTR/L0040-FLL/R3NP
Internal grooving and turning toolholder





Right hand (R) shown.
Unit: mm

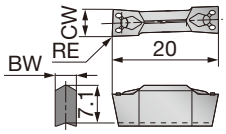
Metric	CW	DMIN	CDX	DCONMS	LF	H	B	Insert	Shank	Adapter	Torque
CGWTR/L0040-FLL/R3NP	3	80	10	40	180	37.5	37	FLEX30L/R	CGWTR/L0040	FLL/R3NP	5

Please place an order with the designation of a set or a shank+a adapter
Note: Use right-hand shanks (CGWTR) with left-hand adapters (FLL3NP); and left-hand shanks (CGWTL) with right-hand adapters (FLR3NP).
Torque: Recommended clamping torque: N·m

SPARE PARTS

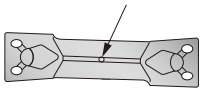
Designation	Clamping screw	Adapter screw	Wrench
CGWTR/L0040-FLL/R3NP	CHHM5-18	CSHB-6	P-4

INSERT
FLEX(R/L)



Right hand (R) shown.
Unit: mm

Recess



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated			Cermet			Uncoated			
P	Steel	★			★			★			
M	Stainless							★			
K	Cast iron				☆						
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Coated T9225	Cermet NS9530	Uncoated UX30	BW (mm)
FLEX30R	R	0.118	3	0.4		●		2.2
FLEX30L	L	0.118	3	0.4		●		2.2
FLEX40R	R	0.157	4	0.4		●		3.1
FLEX40L	L	0.157	4	0.4		●		3.1
FLEX50R	R	0.197	5	0.4	●	●	●	4
FLEX50L	L	0.197	5	0.4	●	●	●	4

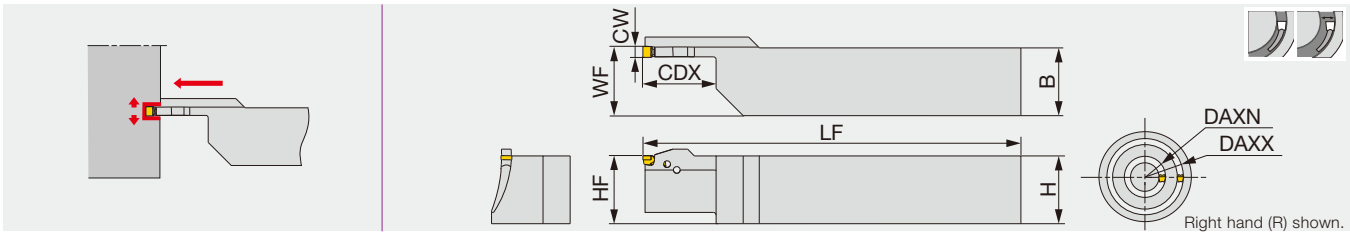
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed Vc (sfm)	Feed: f (ipr) Grooving	Feed: f (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

ETFR/L

Face grooving and turning toolholder



Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR/L12-4T15-030035	0.157	1.181	1.378	0.591	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T15-030035	0.157	1.181	1.378	0.591	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T22-035045	0.157	1.378	1.772	0.866	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T22-035045	0.157	1.378	1.772	0.866	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-045055	0.157	1.772	2.165	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-045055	0.157	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-055075	0.157	2.165	2.953	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-055075	0.157	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-075120	0.157	2.953	4.724	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-075120	0.157	2.953	4.724	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-4T25-120200	0.157	4.724	7.874	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-4T25-200500	0.157	7.874	19.685	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-5T25-035045	0.197	1.378	1.772	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T25-045055	0.197	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T25-055075	0.197	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-075120	0.197	2.953	4.724	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-120200	0.197	4.724	7.874	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-200500	0.197	7.874	19.685	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-6T25-040055	0.236	1.575	2.165	0.984	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T25-055075	0.236	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-075120	0.236	2.953	4.724	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-120200	0.236	4.724	7.874	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-200500	0.236	7.874	19.685	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR/L2020-4T15-030035	4	30	35	15	20	20	125	20	20.5	E**4...
ETFR/L2525-4T15-030035	4	30	35	15	25	25	150	25	25.5	E**4...
ETFR/L2020-4T22-035045	4	35	45	22	20	20.	125	20	20.5	E**4...
ETFR/L2525-4T22-035045	4	35	45	22	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-045055	4	45	55	25	20	20	125	20	20.5	E**4...
ETFR/L2525-4T25-045055	4	45	55	25	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-055075	4	55	75	25	20	20	125	20	20.5	E**4...
ETFR/L2525-4T25-055075	4	55	75	25	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-075120	4	75	120	25	20	20.	125	20	20.5	E**4...
ETFR/L2525-4T25-075120	4	75	120	25	25	25	150	25	25.5	E**4...
ETFR/L2525-4T25-120200	4	120	200	25	25	25	150	25	25.5	E**4...
ETFR/L2525-4T25-200500	4	200	500	25	25	25	150	25	25.5	E**4...
ETFR/L2525-5T25-035045	5	35	45	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T25-045055	5	45	55	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T25-055075	5	55	75	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-075120	5	75	120	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-120200	5	120	200	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-200500	5	200	500	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-6T25-040055	6	40	55	25	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T25-055075	6	55	75	25	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-075120	6	75	120	32	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-120200	6	120	200	32	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-200500	6	200	500	32	25	25	150	25	25.5	ETX6...

Wrench (ECW...) is not included. Please order it separately.

SPARE PARTS

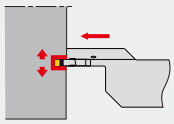
Designation	Wrench (Optional)
ETFR/L...	ECW-456EF

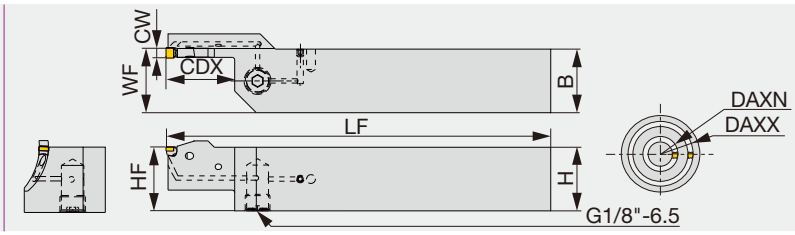
Reference pages: Inserts → F194, F195, Standard cutting conditions → F195

ETFR-CHP

Tube connection

Face grooving and turning toolholder, with high pressure coolant capability





Right hand (R) shown.

Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR16-4T15-030035-CHP	0.157	1.181	1.378	0.591	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T22-035045-CHP	0.157	1.378	1.772	0.866	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-045055-CHP	0.157	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-055075-CHP	0.157	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-075120-CHP	0.157	2.953	4.724	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-120200-CHP	0.157	4.724	7.874	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-200500-CHP	0.157	7.874	19.685	0.984	1.000	1.000	6.000	1.000	1.020	E**4...

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR2525-4T15-030035-CHP	4	30	35	15	25	25	150	25	25.5	E**4...
ETFR2525-4T22-035045-CHP	4	35	45	22	25	25	150	25	25.5	E**4...
ETFR2525-4T25-045055-CHP	4	45	55	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-055075-CHP	4	55	75	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-075120-CHP	4	75	120	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-120200-CHP	4	120	200	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-200500-CHP	4	200	500	25	25	25	150	25	25.5	E**4...

Wrench (ECW...) is not included. Please order it separately.

SPARE PARTS

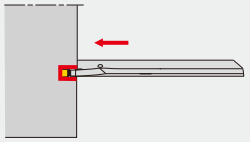


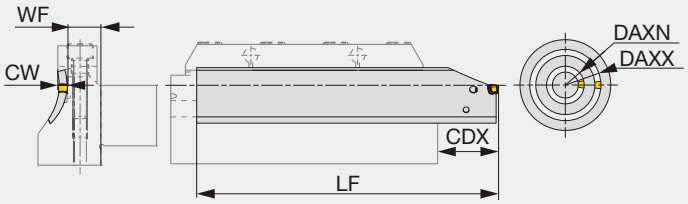
Designation	Wrench (Optional)
ETFR/L...	ECW-456EF

Reference pages: Inserts → F194, F195, Standard cutting conditions → F195
Parts for coolant hose → F290

EFPR/L

Face grooving blade





Right hand (R) shown.

Metric	CW	DAXN	DAXX	WF	LF	Min. CDX	Max. CDX	Insert
EFPR/L-4-030035	4	30	35	13.6	125	18	50	E**4...
EFPR-4-035045	4	35	45	13.6	125	18	50	E**4...
EFPR-4-045055	4	45	55	13.6	125	18	50	E**4...
EFPR-4-055075	4	55	75	13.6	125	18	50	E**4...
EFPR-4-075120	4	75	120	13.6	140	18	65	E**4...
EFPR-4-120200	4	120	200	13.6	140	18	65	E**4...
EFPR-4-200500	4	200	500	13.6	140	18	65	E**4...
EFPR-5-035045	5	35	45	13.6	125	19	50	ETX5...
EFPR-5-045055	5	45	55	13.6	125	19	50	ETX5...
EFPR-5-055075	5	55	75	13.6	125	19	50	ETX5...
EFPR-5-075120	5	75	120	13.6	140	19	65	ETX5...
EFPR-5-120200	5	120	200	13.6	140	19	65	ETX5...
EFPR-5-200500	5	200	500	13.6	140	19	65	ETX5...
EFPR-6-045055	6	45	55	13.6	125	20	50	ETX6...
EFPR-6-055075	6	55	75	13.6	125	20	50	ETX6...
EFPR-6-075120	6	75	120	13.6	140	20	65	ETX6...
EFPR-6-120200	6	120	200	13.6	140	20	65	ETX6...
EFPR/L-6-200500	6	200	500	13.6	140	20	65	ETX6...

Wrench (ECW...) is not included. Please order it separately.

SPARE PARTS

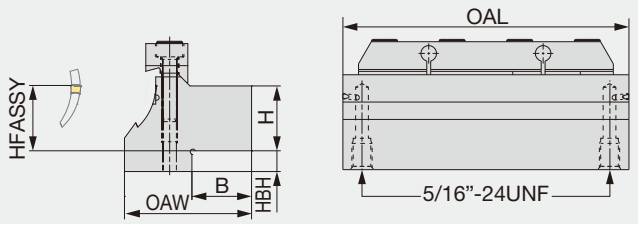


Designation	Wrench (Optional)
EFPR/L...	ECW-456I

Reference pages: Inserts → F194, F195, Standard cutting conditions → F195

CTBU-CHP for EFPR/L

Tool block for EFP blades with high pressure coolant capability



Inch	CW	DAXN	H	B	HFASSY	HBH	OAW	OAL	Blade
CTBU16-030-4U-CHP	0.157	1.181	1.000	0.905	1.000	0.299	1.929	4.331	EFPR/L-4-030035
CTBU16-035-4/5U-CHP	0.157, 0.197	1.378	1.000	0.905	1.000	0.299	1.929	4.331	EFPR/L-4/5-035045
CTBU16-045-4/5U-CHP	0.157, 0.197	1.772	1.000	0.905	1.000	0.299	1.929	4.331	EFPR/L-4/5-045055
CTBU16-055-4/5U-CHP	0.157, 0.197	2.165	1.000	0.905	1.000	0.299	1.850	4.331	EFPR/L-4/5-055075
CTBU16-075-4/5U-CHP	0.157, 0.197	2.953	1.000	0.905	1.000	0.299	1.771	4.331	EFPR/L-4/5-075120
CTBU16-120-4/5U-CHP	0.157, 0.197	4.724	1.000	0.905	1.000	0.299	1.732	4.331	EFPR/L-4/5-120200
CTBU16-200-4/5U-CHP	0.157, 0.197	7.874	1.000	0.905	1.000	0.299	1.633	4.331	EFPR/L-4/5-200500
CTBU16-045-6U-CHP	0.236	1.772	1.000	0.905	1.000	0.299	2.007	4.331	EFPR/L-6-045055
CTBU16-055-6U-CHP	0.236	2.165	1.000	0.905	1.000	0.299	1.929	4.331	EFPR/L-6-055075
CTBU16-075-6U-CHP	0.236	2.953	1.000	0.905	1.000	0.299	1.850	4.331	EFPR/L-6-075120
CTBU16-120-6U-CHP	0.236	4.724	1.000	0.905	1.000	0.299	1.811	4.331	EFPR/L-6-120200
CTBU16-200-6U-CHP	0.236	7.874	1.000	0.905	1.000	0.299	1.712	4.331	EFPR/L-6-200500

Metric	CW	DAXN	H	B	HFASSY	HBH	OAW	OAL	Blade
CTBU25-030-4-CHP	4	30	25	23	25	8	49	110	EFPR/L-4-030035
CTBU25-035-4/5-CHP	4, 5	35	25	23	25	8	49	110	EFPR-4/5-035045
CTBU25-045-4/5-CHP	4, 5	45	25	23	25	8	49	110	EFPR-4/5-045055
CTBU25-055-4/5-CHP	4, 5	55	25	23	25	8	47	110	EFPR-4/5-055075
CTBU25-075-4/5-CHP	4, 5	75	25	23	25	8	45	110	EFPR-4/5-075120
CTBU25-120-4/5-CHP	4, 5	120	25	23	25	8	44	110	EFPR-4/5-120200
CTBU25-200-4/5-CHP	4, 5	200	25	23	25	8	41.5	110	EFPR-4/5-200500
CTBU25-045-6-CHP	6	45	25	23	25	8	51	110	EFPR-6-045055
CTBU25-055-6-CHP	6	55	25	23	25	8	49	110	EFPR-6-055075
CTBU25-075-6-CHP	6	75	25	23	25	8	47	110	EFPR-6-075120
CTBU25-120-6-CHP	6	120	25	23	25	8	46	110	EFPR-6-120200
CTBU25-200-6-CHP	6	200	25	23	25	8	43.5	110	EFPR/L-6-200500

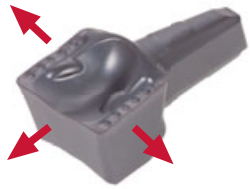
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU25-***-***-CHP	CT-110	CM6X30-S	P-5

Reference pages: Inserts → F194, F195, Standard cutting conditions → F195
Parts for coolant hose → F290

CHIPBREAKER GUIDE

ETX type

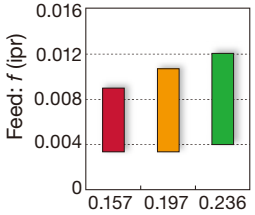


Multi-functional insert
Grooving and turning suitable for light to medium cutting
Well-balanced sharpness and strength

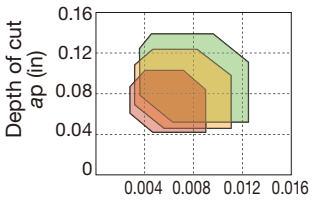
CW = 0.157" - 0.236"



■ Standard feed



■ Standard feed and depth of cut for turning



EGM type

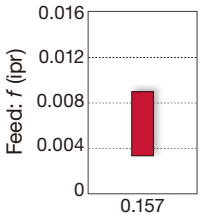


1st choice for parting
High strength
Well-designed edge

CW = 0.157"



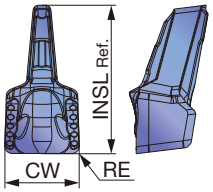
■ Standard feed



INSERTS

ETX





P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

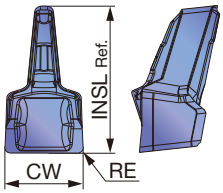
Designation	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH725	INSL (in)
ETX4-040	4	0.157	0.016	●	0.315
ETX5-040	5	0.197	0.016	●	0.394
ETX6-040	6	0.236	0.016	●	0.472

● : Line up

Reference pages: Toolholders → F190 - F193

EGM





P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

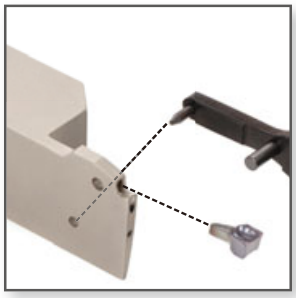
Designation	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH725	INSL (in)
EGM4-030	4	0.157	0.012	●	0.315

● : Line up

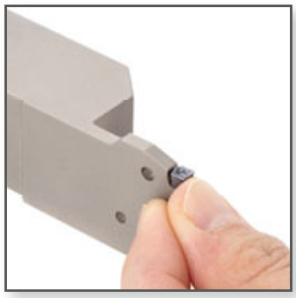
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Chipbreaker	Cutting speed *Vc* (sfm)
P	Low carbon steel 1018, 1020, 1026, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
	Carbon steel, Alloy steel 1045, 1055, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
	Prehardened steel NAK80, PX5, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH725	ETX	164 - 394
		-	AH725	EGM	164 - 394

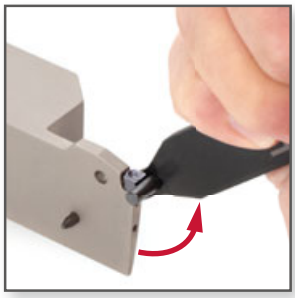
Procedure to clamp and unclanp insert



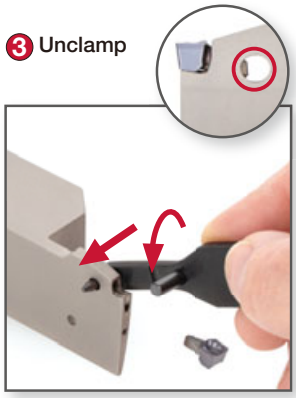
1 Put the insert in the Unclamp pocket



2 Turn the wrench Push the insert into the pocket to clamp



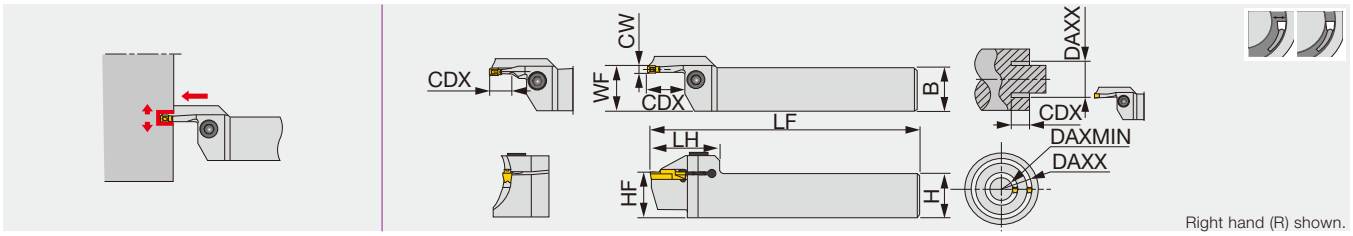
3 Unclamp



Reference pages: Toolholders → F190 - F193

CTFR/L

Face grooving and turning toolholder



Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque
CTFR/L2525-3T10-024035	3	24	35	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-029040	3	29	40	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-034050	3	34	50	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-044070	3	44	70	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-064100	3	64	100	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-4T10-022036	4	22	36	4	10	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-028042	4	28	42	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-034050	4	34	50	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-042070	4	42	70	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-062120	4	62	120	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-112200	4	112	200	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-5T25-050080	5	50	80	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-070110	5	70	110	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-100150	5	100	150	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-140200	5	140	200	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-048070	6	48	70	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-058100	6	58	100	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-088180	6	88	180	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-168400	6	168	400	6	25	25	25	150	49	25	25.6	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended.
Max. groove depth will be 15 mm with DTF insert.
Use the right-hand insert for the right-hand holder with DTF insert.
(1) WF is calculated with the groove width (CW) in the above table.
Torque: Recommended clamping torque: N·m

SPARE PARTS




Designation	Clamping screw	Wrench
CTFR/L2525-3T - 4T...	CM6X1X25-A	P-5
CTFR/L2525-5T - 6T...	CM8X1.25X25-A	P-6

INSERT

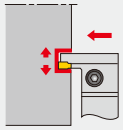
Designation	Seat size	Insert
CTFR/L2525-3T10-024035	3	DTF, DTX
CTFR/L2525-3T10-029040	3	DTF, DTX
CTFR/L2525-3T10-034050	3	DTF, DTX
CTFR/L2525-3T15-044070	3	DTF, DTX, DTR, DTE, DGG, DTM
CTFR/L2525-3T15-064100	3	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DGL, DTM
CTFR/L2525-4T10-022036	4	DTF, DTX
CTFR/L2525-4T20-028042	4	DTF, DTX, DTR
CTFR/L2525-4T20-034050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL, SGN
CTFR/L2525-4T20-042070	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-062120	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-112200	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-5T25-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL, SGN
CTFR/L2525-6T25-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL, SGN

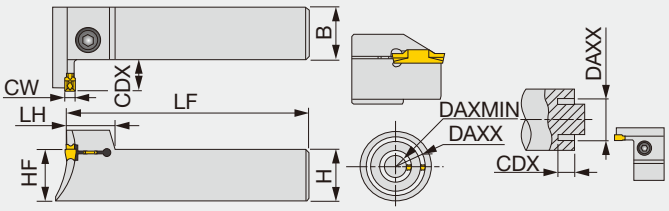
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

Reference pages: Inserts → F207 - F221, Standard cutting conditions → F222

CTFVR/L

Face grooving and turning perpendicular toolholder







Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	Torque
CTFVR/L2525-3T10-024035	3	24	35	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-029040	3	29	40	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-034050	3	34	50	3	10	25	25	150	18	25	5
CTFVR/L2525-3T15-044060	3	44	60	3	15	25	25	150	18	25	5
CTFVR/L2525-3T15-054085	3	54	85	3	15	25	25	150	18	25	5
CTFVR/L2525-4T12-022040	4	22	40	4	12	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-032050	4	32	50	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-042060	4	42	60	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-052085	4	52	85	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-5T20-050080	5	50	80	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-070110	5	70	110	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-100150	5	100	150	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-140200	5	140	200	5	20	25	25	150	22	25	12
CTFVR/L2525-6T20-048085	6	48	85	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-073150	6	73	150	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-138250	6	138	250	6	20	25	25	150	22	25	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended
Max. groove depth will be 15 mm with DTF insert.
Use the right-hand insert for the right-hand holder with DTF insert.
Torque: Recommended clamping torque: N·m

SPARE PARTS





Designation	Clamping screw	Wrench
CTFVR/L2525-3T...	CM5X0.8X25-A	P-4
CTFVR/L2525-4T...	CM6X1X25-A	P-5
CTFVR/L2525-5T..., 6T...	CM8X1.25X25-A	P-6

INSERT

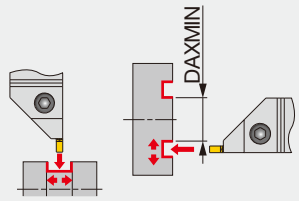
Designation	Seat size	Insert
CTFVR/L2525-3T10-024035	3	DTF, DTX
CTFVR/L2525-3T10-029040	3	DTF, DTX
CTFVR/L2525-3T10-034050	3	DTF, DTX, DTR
CTFVR/L2525-3T15-044060	3	DTF, DTX, DTR
CTFVR/L2525-3T15-054085	3	DTF, DTX, DTE, DGG, DTR, DTM
CTFVR/L2525-4T12-022040	4	DTF, DTX, DTR
CTFVR/L2525-4T15-032050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL, SGN
CTFVR/L2525-4T15-042060	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-4T15-052085	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-5T20-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL, SGN
CTFVR/L2525-6T20-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL

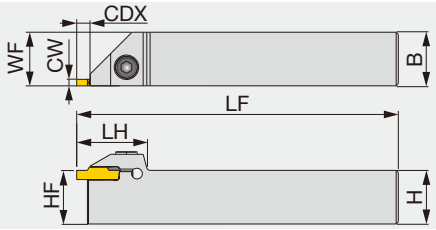
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

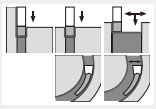
Reference pages: Inserts → F207 - F221, Standard cutting conditions → F222

CTEFR/L

External face grooving and turning toolholder







Right hand (R) shown.

Inch	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque
CTEFR/L12-4T04	0.157	2, 3, 4	0.189	0.750	0.750	5.000	1.300	0.750	0.770	6.27
CTEFR/L16-4T04	0.157	2, 3, 4	0.189	1.000	1.000	6.000	1.300	1.000	1.020	6.27
CTEFR/L12-6T04	0.236	5, 6	0.189	0.750	0.750	5.000	1.460	0.750	0.770	6.27
CTEFR/L16-6T04	0.236	5, 6	0.189	1.000	1.000	6.000	1.460	1.000	1.020	6.27

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque*
CTEFR/L2020-4T04	4	2, 3, 4	4.8	20	20	125	33	20	20.5	8.5
CTEFR/L2525-4T04	4	2, 3, 4	4.8	25	25	150	33	25	25.5	8.5
CTEFR/L2020-6T04	6	5, 6	4.8	20	20	125	37	20	20.6	8.5
CTEFR/L2525-6T04	6	5, 6	4.8	25	25	150	37	25	25.6	8.5

(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L12-4T04	CM6X1X20-A	P-5
CTEFR/L16-4T04	CM6X1X25-A	P-5
CTEFR/L12-6T04	CM6X1X20-A	P-5
CTEFR/L16-6T04	CM6X1X25-A	P-5

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L2020-4T04	CM6X1X20-A	P-5
CTEFR/L2525-4T04	CM6X1X25-A	P-5
CTEFR/L2020-6T04	CM6X1X20-A	P-5
CTEFR/L2525-6T04	CM6X1X25-A	P-5

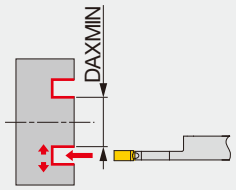
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN / DGL	0.079	11.614
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / SGN / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTX / DTM / DTR	0.079	11.614
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

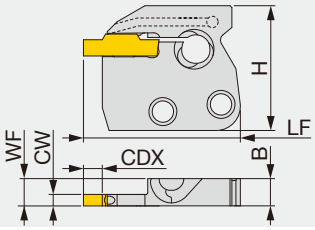
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTX / DTM / DTR	2	295
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

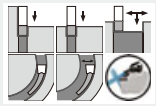
Reference pages: Inserts → F207 - F221, Standard cutting conditions → F222

CAEFR/L-CHP

Face and external grooving adapter, with high pressure coolant capability







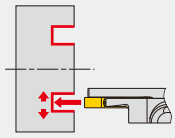
Right hand (R) shown.

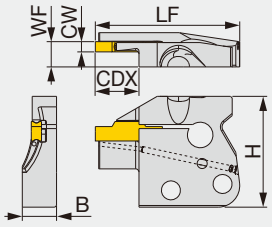
Metric	CW	Seat size	CDX	H	B	LF	WF (1)
CAEFR/L-4T04-CHP	4	2,3,4	4.8	33	7.2	41.5	7.7
CAEFR/L-6T04-CHP	6	5,6	4.8	33	7.2	46.3	7.8

(1) "WF" value is calculated with groove width "CW" shown in the table.

CAFR/L-CHP

Face grooving and turning adapter, with high pressure coolant capability









Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	WF (1)
CAFR/L-3T12-040055-CHP	3	40	55	3	12	33	10.2	43	7.5
CAFR/L-3T12-055075-CHP	3	55	75	3	12	33	10.2	43	7.5
CAFR/L-3T12-075100-CHP	3	75	100	3	12	33	10.2	43	7.5
CAFR/L-3T12-100140-CHP	3	100	140	3	12	33	10.2	43	7.5
CAFR/L-3T12-140200-CHP	3	140	200	3	12	33	10.2	43	7.5
CAFR/L-4T16-050070-CHP	4	50	70	4	16	33	10.2	43	8
CAFR/L-4T16-070100-CHP	4	70	100	4	16	33	10.2	43	8
CAFR/L-4T16-100150-CHP	4	100	150	4	16	33	10.2	43	8
CAFR/L-4T16-150250-CHP	4	150	250	4	16	33	10.2	43	8
CAFR/L-5T20-055080-CHP	5	55	80	5	20	33	10.2	47	8.5
CAFR/L-5T20-080120-CHP	5	80	120	5	20	33	10.2	47	8.5
CAFR/L-5T20-120180-CHP	5	120	180	5	20	33	10.2	47	8.5
CAFR/L-5T20-180300-CHP	5	180	300	5	20	33	10.2	47	8.5
CAFR/L-5T20-300000-CHP	5	300	∞	5	20	33	10.2	47	8.5
CAFR/L-6T25-060090-CHP	6	60	90	6	25	33	10.2	52	9
CAFR/L-6T25-090150-CHP	6	90	150	6	25	33	10.2	52	9
CAFR/L-6T25-150250-CHP	6	150	250	6	25	33	10.2	52	9
CAFR/L-6T25-250400-CHP	6	250	400	6	25	33	10.2	52	9

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
Max. groove depth will be 15 mm with DTF insert.
Use the right-hand insert for the right-hand holder with DTF insert.
(1) WF is calculated with the groove width (CW) in the above table.

Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTX / DTM / DTR	2	295
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61

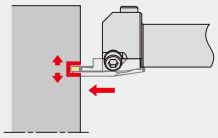
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

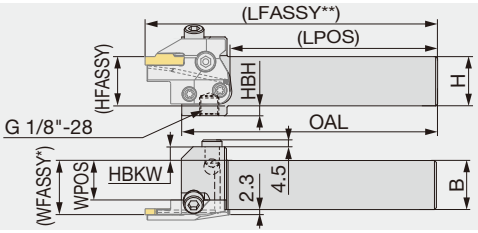
Reference pages: Inserts → F207 - F221, Shanks and toolholders → F200 - F202
Standard cutting conditions → F222, Technical Reference → L059

CHSR/L-CHP

Tube connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	CA*FL/R**-CHP	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	CA*FL/R**-CHP	3.69

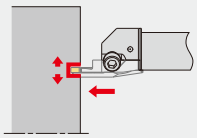
Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	CA*FL/R**-CHP	6.5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	CA*FL/R**-CHP	6.5

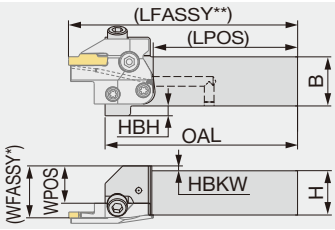
WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

CHSR/L-CHP-MC

Direct connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Metric	H	B	OAL	LPOS	WPOS	HBKW	HBH	Adapter (Option)	Torque
CHSR/L2020-CHP-MC	20	20	98	73.5	14	6	10	CA*FL/R**-CHP	6.5
CHSR/L2525-CHP-MC	25	25	98	73.5	19	-	5	CA*FL/R**-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179
CHSR/L**-CHP-MC	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	-

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

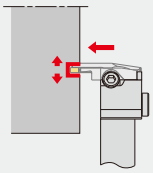
Shank	External grooving adapter		Face grooving adapter		External and face grooving adapter	
	CAER**-CHP, -MD	CAEL**-CHP, -MD	CAFR**-CHP	CAFL**-CHP	CAEFR**-CHP	CAEFL**-CHP
CHSR**-CHP (-MC)	●			●	●	
CHSL**-CHP (-MC)		●	●			●

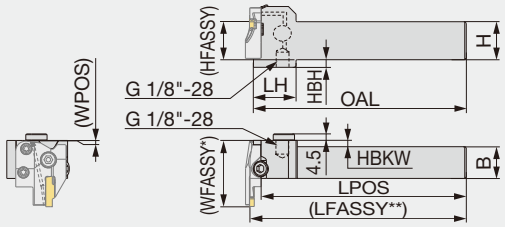
● : Corresponding

Reference pages: Inserts → F207 - F221, Adapters → F199, Standard cutting conditions → F222
Parts for coolant hose → F290, Technical Reference → L059

CHFVR/L-CHP

Shank for perpendicularly-mounted adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	CA*FR/L**-CHP	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	CA*FR/L**-CHP	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	CA*FR/L**-CHP	6.5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	CA*FR/L**-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	External grooving adapter		Face grooving adapter		External and face grooving adapter	
	CAER**-CHP, -MD	CAEL**-CHP, -MD	CAFR**-CHP	CAFL**-CHP	CAEFR**-CHP	CAEFL**-CHP
CHFVR**-CHP		●	●			●
CHFVL**-CHP	●			●	●	

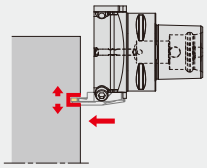
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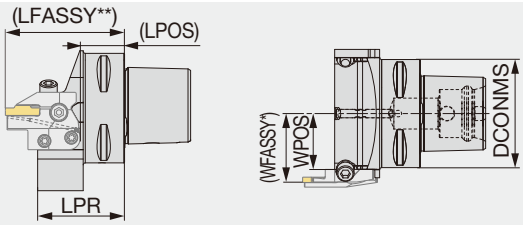
Reference pages: Inserts → F207 - F221, Adapters → F199, Standard cutting conditions → F222
Parts for coolant hose → F290, Technical Reference → L059

C*CHSN-CHP

Direct connection

Toolholder with TungCap connection, for adapter, with high pressure coolant capability





Left-hand (L) adapter shown.

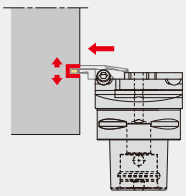
Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	CA*FR/L**-CHP	6.5
C4CHSN21047-CHP	40	46.5	21.5	21	CA*FR/L**-CHP	6.5
C5CHSN26047-CHP	50	47	22.5	26	CA*FR/L**-CHP	6.5
C6CHSN33050-CHP	63	50	24.5	32.5	CA*FR/L**-CHP	6.5

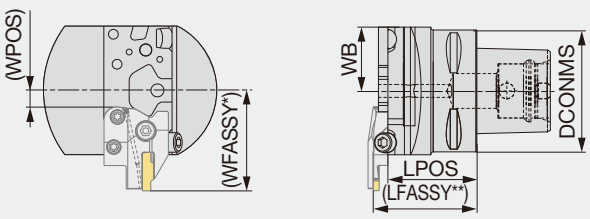
WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

C*CHFVN-CHP

Direct connection

Toolholder with TungCap connection, for perpendicularly-mounted adapter, with high pressure coolant capability





Right-hand (R) adapter shown.

Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	CA*FR/L**-CHP	6.5
C4CHFVN26046-CHP	40	46	26	1.5	CA*FR/L**-CHP	6.5
C5CHFVN26046-CHP	50	46	26	1.5	CA*FR/L**-CHP	6.5
C6CHFVN33046-CHP	63	46	33	8.5	CA*FR/L**-CHP	6.5

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CH**N**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N

Recommended clamping torque (N·m)

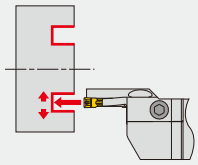
Clamping screw	Torque (N·m)
SR M5-04451	2.5
SR M6X12DIN6912	6.5
SR M6X20-XT	6.5

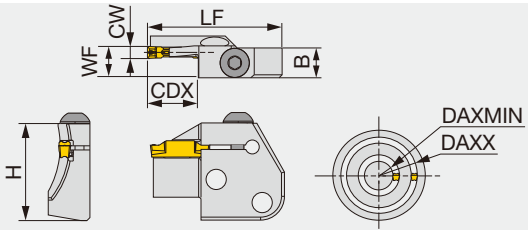
External
Internal
Face
Parting
Others

Reference pages: Inserts → F207 - F221, Adapters → F199, Standard cutting conditions → F222
Technical Reference → L059

CAFR/L

Face grooving and turning adapter





Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	WF (1)	Torque
CAFR/L-3T12-040055	3	40	55	3	12	32.7	10	45	10.4	5
CAFR/L-3T12-055075	3	55	75	3	12	32.7	10	45	10.4	5
CAFR/L-3T12-075100	3	75	100	3	12	32.7	10	45	10.4	5
CAFR/L-3T12-100140	3	100	140	3	12	32.7	10	45	10.4	5
CAFR/L-3T12-140200	3	140	200	3	12	32.7	10	45	10.4	5
CAFR/L-4T16-050070	4	50	70	4	16	32.7	10	45	10.5	5
CAFR/L-4T16-070100	4	70	100	4	16	32.7	10	45	10.5	5
CAFR/L-4T16-100150	4	100	150	4	16	32.7	10	45	10.5	5
CAFR/L-4T16-150250	4	150	250	4	16	32.7	10	45	10.5	5
CAFR/L-5T20-055080	5	55	80	5	20	32.7	10	49	10.5	5
CAFR/L-5T20-080120	5	80	120	5	20	32.7	10	49	10.5	5
CAFR/L-5T20-120180	5	120	180	5	20	32.7	10	49	10.5	5
CAFR/L-5T20-180300	5	180	300	5	20	32.7	10	49	10.5	5
CAFR/L-5T20-300000	5	300	∞	5	20	32.7	10	49	10.5	5
CAFR/L-6T25-060090	6	60	90	6	25	32.7	10	55	10.5	5
CAFR/L-6T25-090150	6	90	150	6	25	32.7	10	55	10.5	5
CAFR/L-6T25-150250	6	150	250	6	25	32.7	10	55	10.5	5
CAFR/L-6T25-250400	6	250	400	6	25	32.7	10	55	10.5	5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
Max. groove depth will be 15 mm with DTF insert.
Use the right-hand insert for the right-hand holder with DTF insert.
Not compatible with TungModularSystem
(1) WF is calculated with the groove width (CW) in the above table.
Torque: Recommended clamping torque: N·m

SPARE PARTS

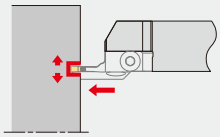
Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

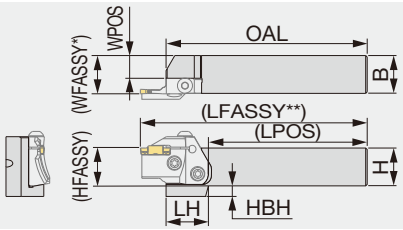
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

Reference pages: Inserts → F207 - F221, Shanks and toolholders → F204, F205
Standard cutting conditions → F222

CHSR/L

Shank for adapter





Right hand (R)
with left-hand adapter shown.

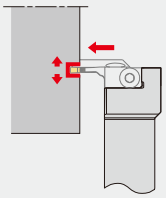
Inch	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Adapter (Option)
CHSR/L12-U	0.750	0.750	5.330	4.227	1.380	0.356	0.750	0.502	CAFL/R...
CHSR/L16-U	1.000	1.000	5.330	4.227	1.100	0.606	1.000	0.280	CAFL/R...
CHSR/L20-U	1.250	1.250	6.330	5.227	-	0.856	1.250	-	CAFL/R...

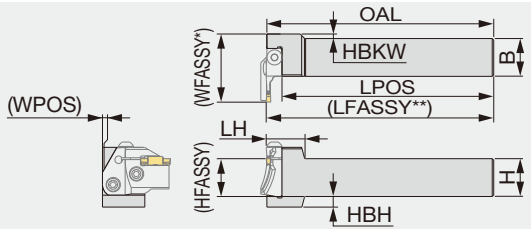
Metric	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Adapter (Option)
CHSR/L2020	20	20	133	105	35	10	20	12	CAFL/R...
CHSR/L2525	25	25	133	105	28	15	25	7	CAFL/R...
CHSR/L3232	32	32	153	125	-	22	32	-	CAFL/R...

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Not compatible with TungModularSystem

CHFVR/L

Shank for adapter, perpendicularly mounted





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Adapter (Option)
CHFVR/L12-U	0.750	0.750	6.000	5.606	0.984	-0.001	0.352	0.750	0.502	CAFR/L...
CHFVR/L16-U	1.000	1.000	6.000	5.606	0.984	-0.001	0.102	1.000	0.276	CAFR/L...
CHFVR/L20-U	1.250	1.250	7.000	6.606	0.984	0.147	-	1.250	-	CAFR/L...

Metric	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Adapter (Option)
CHFVR/L2020	20	20	150	140	25	0	8	20	12	CAFR/L...
CHFVR/L2525	25	25	150	140	25	0	3	25	7	CAFR/L...
CHFVR/L3232	32	32	170	160	25	4	-	32	-	CAFR/L...

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Not compatible with TungModularSystem

SPARE PARTS





Designation	Clamping screw	Wrench
CH**R/L...	CSHB-6-A	P-4

Combination of adapter and shank

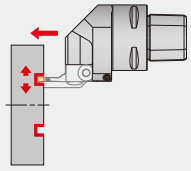
Shank	External grooving adapter		Face grooving adapter	
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	
CHFVR...		●	●	
CHFVL...	●			●

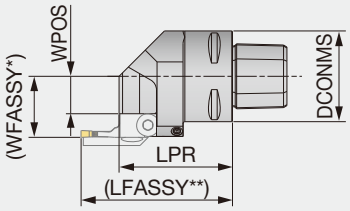
● : Corresponding

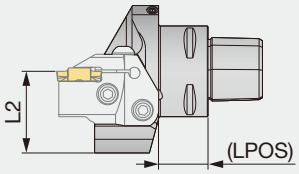
Reference pages: Inserts → F207 - F221, Adapters → F203, Standard cutting conditions → F222

C-CHSR/L

Toolholder with TungCap connection for adapter







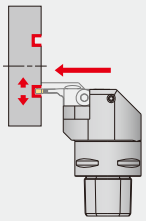
Right hand (R)
with left-hand adapter shown.

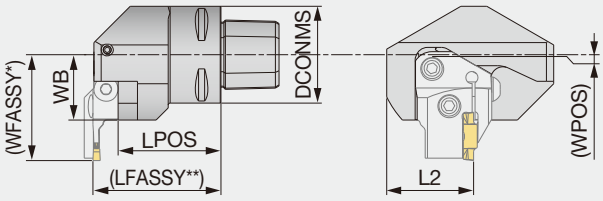
Metric	DCONMS	LPR	LPOS	L2	WPOS	Adapter (Option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAFL/R...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAFL/R...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAFL/R...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAFL/R...

WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type. If needed, the coolant direction can be adjusted by the nozzle.
Applicable for 7 MPa coolant. Not compatible with TungModularSystem.

C-CHFVR/L

Toolholder with TungCap connection for adapter, perpendicularly mounted





Right hand (R)
with right-hand adapter shown.

Metric	DCONMS	LPOS	L2	WB	WPOS	Adapter (Option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAFR/L...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAFR/L...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAFR/L...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAFR/L...

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type. If needed, the coolant direction can be adjusted by the nozzle.
Applicable for 7 MPa coolant. Not compatible with TungModularSystem.

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CH**R/L...	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CH**R/L...	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CH**R/L...	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CH**R/L...	SATZ-M10X1-M5	CSHB-6-A	P-4

Combination of adapter and toolholder

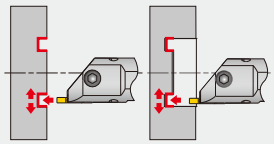
Toolholder	External grooving adapter		Face grooving adapter	
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

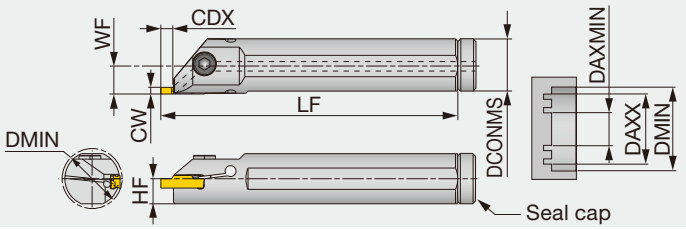
● : Corresponding

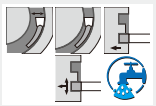
Reference pages: Inserts → F207 - F221, Adapters → F203, Standard cutting conditions → F222

CTIFR/L

External/Internal face grooving and turning toolholder







Right hand (R) shown.

Inch	CW	Seat size	CDX	DCONMS	LF	HF	WF (1)	Torque
CTIFR/L16-4T05-D17	0.157	2, 3, 4	0.217	1.000	8.000	0.450	0.531	3.69
CTIFR/L20-4T05-D22	0.157	2, 3, 4	0.217	1.250	10.000	0.590	0.656	3.69
CTIFR/L16-5T05-D17	0.236	5, 6	0.217	1.000	8.000	0.450	0.531	3.69
CTIFR/L20-5T05-D22	0.236	5, 6	0.217	1.250	10.000	0.590	0.656	3.69

Metric	CW	Seat size	CDX	DCONMS	LF	HF	WF (1)	Torque*
CTIFR/L25-4T05-D270	4	2, 3, 4	5.5	25	200	11.5	13.3	5
CTIFR/L32-4T05-D340	4	2, 3, 4	5.5	32	250	15	16.8	5
CTIFR/L25-5T05-D270	6	5, 6	5.5	25	200	11.5	13.3	5
CTIFR/L32-5T05-D340	6	5, 6	5.5	32	250	15	16.8	5

Use the right-hand insert for the right-hand holder with DTF insert.
(1) WF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

INCH SPARE PARTS





Designation	Clamping screw	Wrench	Seal cap
CTIFR/L16...	CM6X1X16-A	P-5	CA-25
CTIFR/L20...	CM6X1X20-A	P-5	CA-32

Seat size	Min. machining dia.: DMIN (in)	
	DCONMS = 1.000"	DCONMS = 1.250"
2	11.772	11.772
3	1.035	1.311
4	1.055	1.331
5	1.035	1.311
6	1.055	1.331

Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN / DGL	0.079	11.614
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / SGN / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTX / DTM / DTR	0.079	11.614
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

METRIC SPARE PARTS





Designation	Clamping screw	Wrench	Seal cap
CTIFR/L25...	CM6X1X16-A	P-5	CA-25
CTIFR/L32...	CM6X1X20-A	P-5	CA-32

Seat size	Min. machining dia.: DMIN (mm)	
	DCONMS = 25 mm	DCONMS = 32 mm
2	299	299
3	26.3	33.3
4	26.8	33.8
5	26.3	33.3
6	26.8	33.8

Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / SGN / DGL	5	60
DGM / DGS / DGL	6	57
DTX / DTM / DTR	2	295
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

Reference pages: Inserts → F207 - F221, Standard cutting conditions → F222

Face grooving and turning

DTF type (2 corners)

First choice

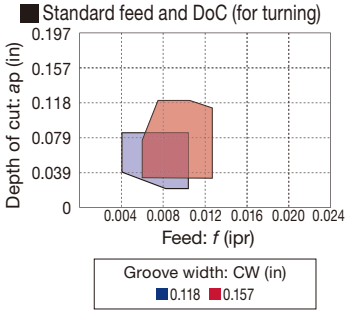


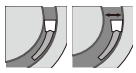
F211

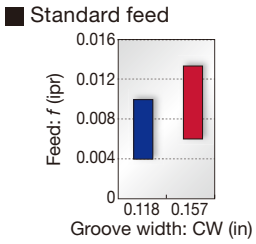
1st choice for face grooving

Unique chipbreaker makes chips shorter
Molded and ground insert available

CW = 0.118" - 0.157"







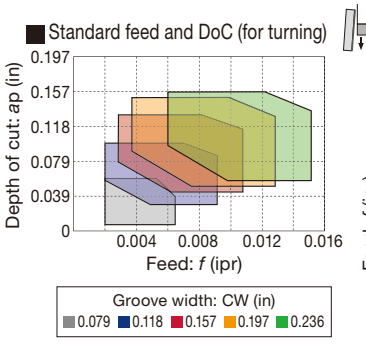
DTX type (2 corners)

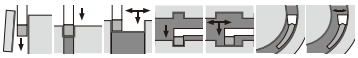


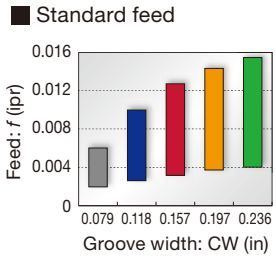
F211

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.079" - 0.236"







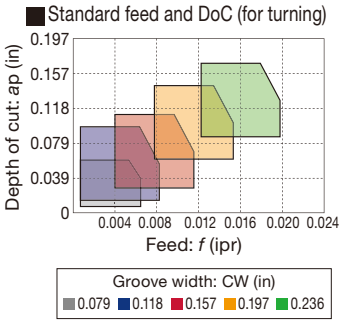
DTM type (2 corners)



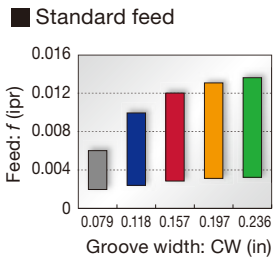
F212

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.079" - 0.236"







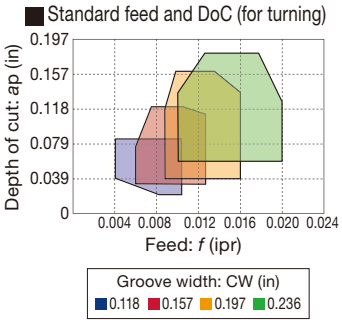
DTE type (2 corners)

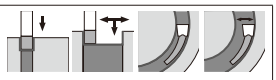


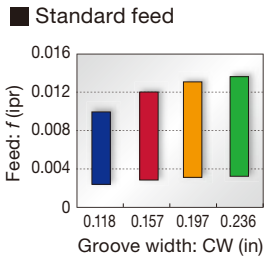
F212, F213

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.104" - 0.236"

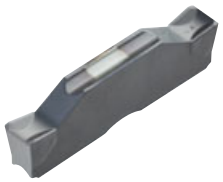






Please see page F*** for the product details.

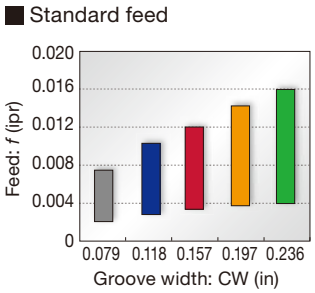
DGM type (2 corners) SGM type (1 corner)

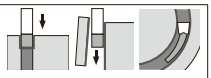


F214, F215

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.250"





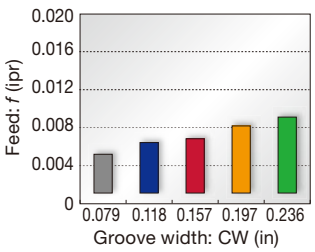
DGS type (2 corners) SGS type (1 corner)

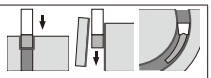


F216, F217

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.079" - 0.250"





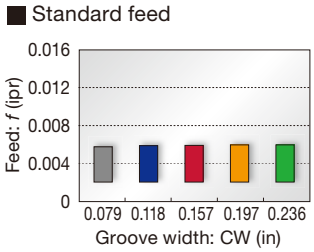
DGG type (2 corners)

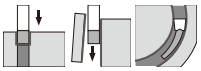


F217

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"





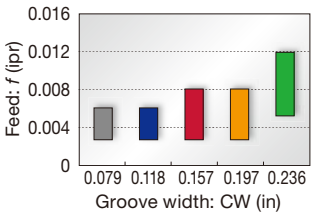
DGL type (2 corners)

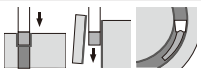


F218

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel which often presents challenges in chip control
CW = 0.079" - 0.236"





Please see page F*** for the product details.

Profiling and undercutting

DTR type (2 corners)
STR type (1 corner)

Molded
DTR, STR



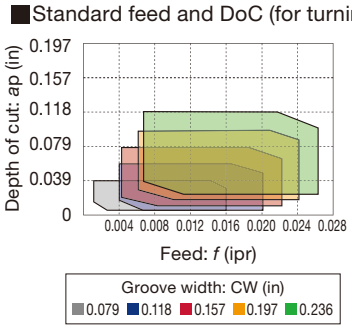
Ground
DTR

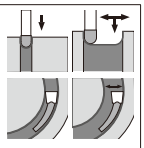


F218, F219

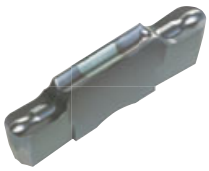
Full radius type

Excellent chip control
Molded and ground inserts available
CW = 0.079" - 0.236"





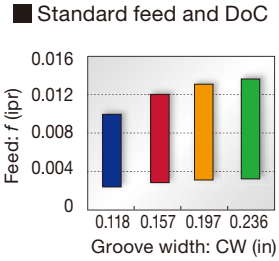
DTIU type
(2 corners)

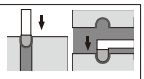


F220

Full radius type

Excellent chip control for undercutting
CW = 0.118" - 0.236"





Aluminum wheel machining

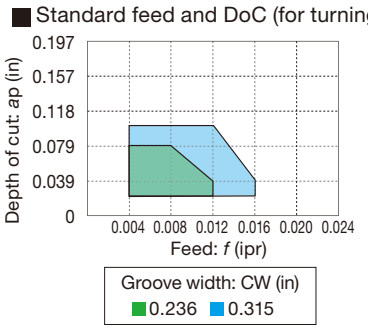
DTA type
(2 corners)

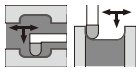


F220

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"





For high feed external and face turning of hardened steel parts

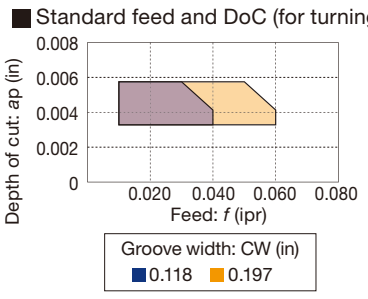
STH type
(1 corner)



F221

External and face turning of hardened steel parts

High efficiency machining using light D.O.C. and increased feeds
CW = 0.118", 0.197"





External grooving of hardened steel

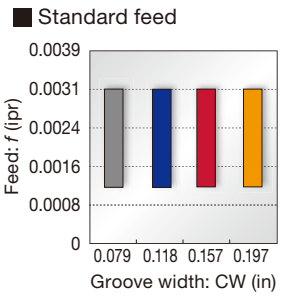
SGN-CBN type
(1 corner)

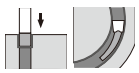


F221

For hardened steel cutting

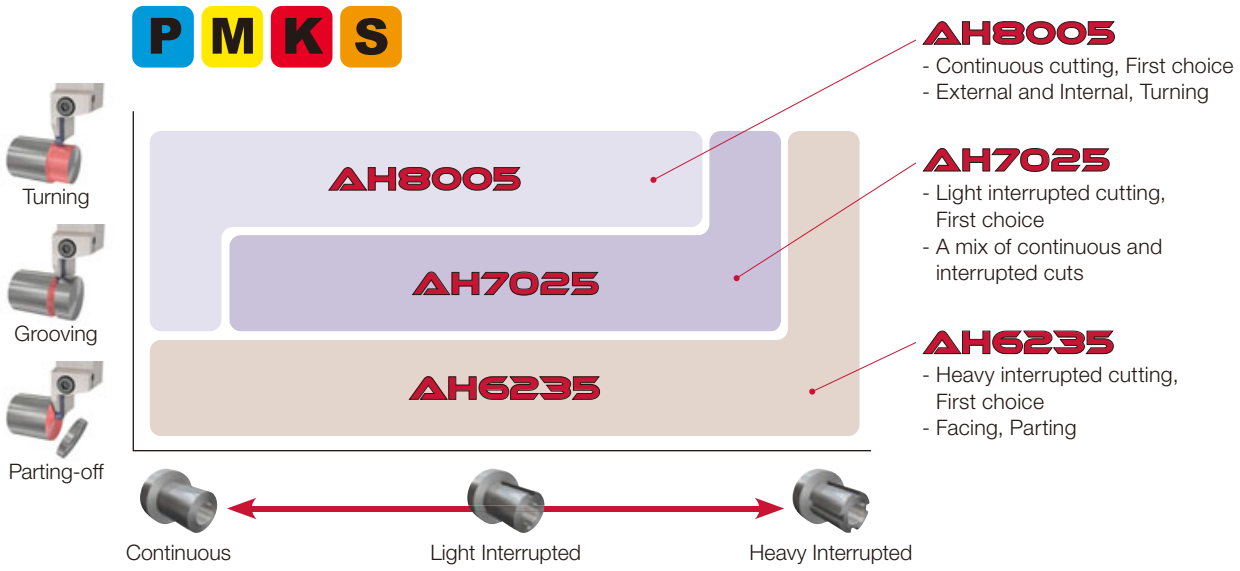
Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.197"
(Tol. ±0.001")





Please see page F*** for the product details.

GRADE SELECTION



GRADES

AH8005 P M K S
- First choice for external, internal, and side-turning, continuous cuts

AH7025 P M K S
- First choice for light interrupted cuts or a mix of continuous and interrupted cuts
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH6235 P M K
- First choice for heavy interrupted cuts, as well as parting and facing applications

AH725 P M S
- General purpose PVD grade for high fracture resistance

T515 K
- First recommended grade for cast iron
- Excellent wear resistance in high speed machining

T9225 P
- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P
- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K
- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S
- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S
- Recommended for non-ferrous materials and titanium

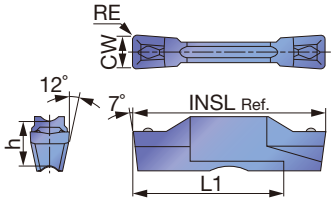
TH10 N
- Recommended for non-ferrous materials

BXA10 H
- Coated CBN grade designed for turning hardened steel parts

BX360 H
- Developed for grooving applications of hardened steel parts

DTF

Face grooving and turning



Right hand (R) shown.

P	Steel	★	★	☆	☆				★				
M	Stainless		★	☆	★								
K	Cast iron		★		☆				☆				
N	Non-ferrous												
S	Superalloys		★	☆									
H	Hard materials												

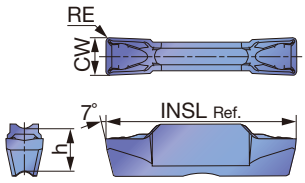
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet						INSL (in)	h (in)	L1 (in)
						T9225	AH7025	AH725	GH130			NS9530								
DTF3-040-R	3	R	3	0.118	0.016	●	●	●	●			●						0.787	0.197	0.630
DTF3-040-L	3	L	3	0.118	0.016	●	●	●	●			●						0.787	0.197	0.630
DTF4-040-R	4	R	4	0.157	0.016	●	●	●	●			●						0.787	0.197	0.630
DTF4-040-L	4	L	4	0.157	0.016	●	●	●	●			●						0.787	0.197	0.630

●: Line up

DTX

External, internal and face grooving, and turning



P	Steel	★	★	☆	★	☆	★		★								
M	Stainless		★	☆	★	★	★										
K	Cast iron		★		★	☆	★		☆				☆				
N	Non-ferrous												☆				
S	Superalloys		★	☆	★								★				
H	Hard materials																

★ : First choice
☆ : Second choice

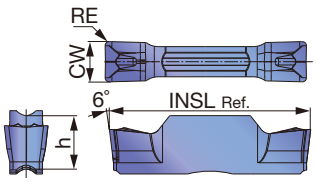
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				Uncoated				INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530				KS05F					
DTX2-020	2	2	0.079	0.008		●		●		●					●				0.787	0.197
DTX3-030	3	3	0.118	0.012	●	●	●	●	●	●	●				●				0.787	0.197
DTX4-040	4	4	0.157	0.016	●	●	●	●	●	●	●				●				0.787	0.197
DTX5-040	5	5	0.197	0.016	●	●	●	●	●	●	●				●				0.984	0.217
DTX6-080	6	6	0.236	0.031		●	●	●	●	●					●				0.984	0.217

● : Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DTM

External face grooving and turning



P	Steel	★	★	★
M	Stainless	★	★	★
K	Cast iron	★	★	★
N	Non-ferrous			
S	Superalloys	★	★	
H	Hard materials			

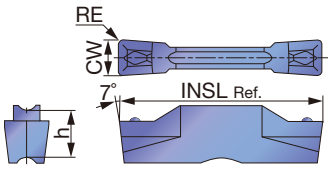
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH8005	Coated AH6235	INSL (in)	h (in)
DTM2-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DTM3-030	3	3	0.118	0.012	●	●	●	0.787	0.197
DTM4-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DTM4-080	4	4	0.157	0.031	●	●	●	0.787	0.197
DTM5-080	5	5	0.197	0.031	●	●	●	0.984	0.217
DTM6-080	6	6	0.236	0.031	●	●	●	0.984	0.217

● : Line up

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	☆	☆	★
M	Stainless		★	☆	★	
K	Cast iron		★		☆	
N	Non-ferrous					
S	Superalloys		★	☆		
H	Hard materials					

★ : First choice
☆ : Second choice

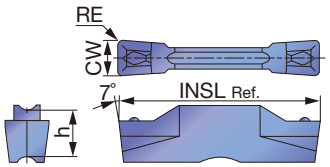
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated T9225	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTE265-015	3	2.65	0.104	0.006	●	●	●	●	●	0.787	0.197
DTE300-020	3	3	0.118	0.008	●	●	●	●	●	0.787	0.197
DTE300-040	3	3	0.118	0.016	●	●	●	●	●	0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	●	●	●	●	0.787	0.197
DTE400-040	4	4	0.157	0.016	●	●	●	●	●	0.787	0.197
DTE400-080	4	4	0.157	0.031	●	●	●	●	●	0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	●	●	●	●	0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	●	●	●	●	0.984	0.217
DTE500-040	5	5	0.197	0.016	●	●	●	●	●	0.984	0.217
DTE500-080	5	5	0.197	0.031	●	●	●	●	●	0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	●	●	●		0.984	0.217
DTE600-080	6	6	0.236	0.031	●	●	●	●		0.984	0.217
DTE600-120	6	6	0.236	0.047	●	●	●	●		0.984	0.217

●: Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DTE

External face grooving and turning



P	Steel	★		★	☆	★	☆	★		★		
M	Stainless			★	☆	★	★	★				
K	Cast iron		★	★		★	☆	★				
N	Non-ferrous											
S	Superalloys			★	☆	★						
H	Hard materials											

★ : First choice
☆ : Second choice

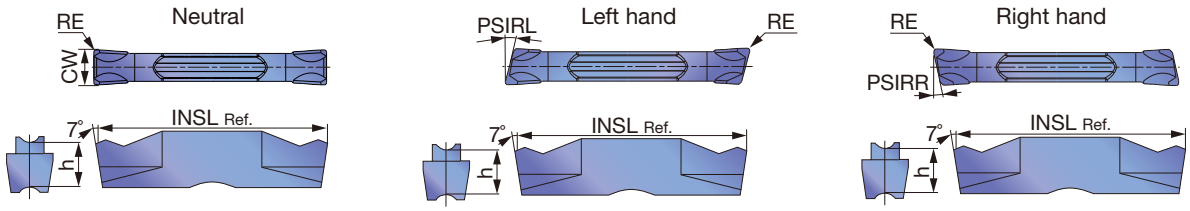
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet						INSL (in)	h (in)
					T9225	T515	AH7025	AH725	AH8005	GH130	AH6235	NS9530							
DTE3-020	3	3	0.118	0.008			●		●		●							0.787	0.197
DTE3-040	3	3	0.118	0.016	●	●	●	●	●	●	●	●						0.787	0.197
DTE4-040	4	4	0.157	0.016	●	●	●	●	●	●	●	●						0.787	0.197
DTE4-080	4	4	0.157	0.031			●		●		●							0.787	0.197
DTE5-040	5	5	0.197	0.016		●	●		●		●							0.984	0.217
DTE5-080	5	5	0.197	0.031			●		●		●							0.984	0.217
DTE6-080	6	6	0.236	0.031		●	●		●		●							0.984	0.217

● : Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DGM

External/face grooving and parting



		T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530	KS05F
P	Steel	★	★	☆	★		☆	★	★	
M	Stainless		★	☆	★		★	★		
K	Cast iron		★		★	☆	☆	★	☆	☆
N	Non-ferrous									☆
S	Superalloys		★	☆	★	★				★
H	Hard materials									

★ : First choice
☆ : Second choice

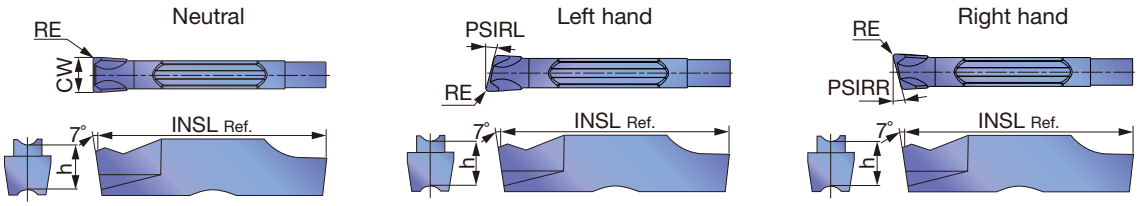
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet		Un-coated		INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530		KS05F					
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●	●	●		●		0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008			●			●						0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008			●			●						0.762	0.197	15°	0°
DGM2.39-020	2	N	2.39	0.094	0.008		●		●			●					0.787	0.197	0°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●		●		0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008		●	●			●						0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008		●	●			●						0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.008			●			●						0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.008			●			●						0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008		●	●			●						0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008		●	●			●						0.787	0.197	15°	0°
DGM3.18-020	3	N	3.18	0.125	0.008		●		●			●					0.787	0.197	0°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●		●		0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012		●	●			●						0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012		●	●			●						0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012		●	●			●						0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012		●	●			●						0.787	0.197	15°	0°
DGM4.76-040	5	N	4.76	0.187	0.016		●		●			●					0.984	0.217	0°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●		●		0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012		●	●			●						0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	●			●		0.984	0.217	0°	0°
DGM6.35-040	6	N	6.35	0.250	0.016		●		●			●					0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

SGM

External/face deep grooving and parting



P	Steel	★	☆	★	☆	★							
M	Stainless	★	☆	★	★	★							
K	Cast iron	★		★	☆	★		☆					
N	Non-ferrous							☆					
S	Superalloys	★	☆	★				★					
H	Hard materials												

★ : First choice
☆ : Second choice

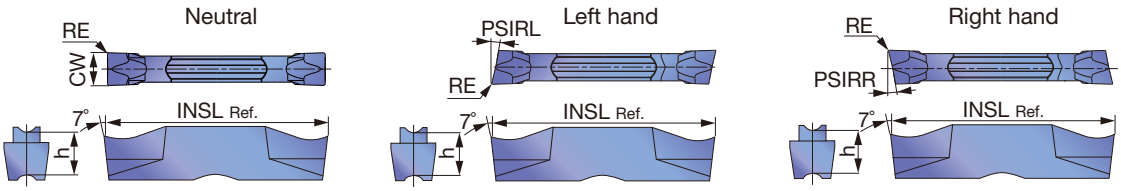
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGM2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●		●							0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●		●							0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DGS

External/face grooving and parting



P	Steel	★	★	☆	★	☆	★		★					
M	Stainless		★	☆	★	★	★							
K	Cast iron		★		★	☆	★		☆			☆		
N	Non-ferrous											☆		
S	Superalloys		★	☆	★							★		
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet			Uncoated			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530			KS05F						
DGS2-005	2	N	2	0.079	0.002			●										0.787	0.197	0°	0°
DGS2-010	2	N	2	0.079	0.004			●										0.787	0.197	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008			●		●								0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008		●	●		●								0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008		●	●		●								0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008			●		●								0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008			●		●								0.768	0.197	15°	0°
DGS2.39-020	2	N	2.39	0.094	0.008		●		●		●							0.787	0.197	0°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008			●		●								0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008		●	●		●								0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008		●	●		●								0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008			●		●								0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008			●		●								0.766	0.197	15°	0°
DGS3.18-020	3	N	3.18	0.125	0.008		●		●		●							0.787	0.197	0°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012		●	●		●								0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012		●	●		●								0.787	0.197	4°	0°
DGS4.76-040	5	N	4.76	0.187	0.016		●		●		●							0.984	0.217	0°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●			●			0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●				●			0.984	0.217	0°	0°
DGS6.35-040	6	N	6.35	0.250	0.016		●		●		●							0.984	0.217	0°	0°

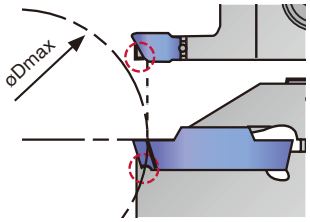
● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameters than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.141
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

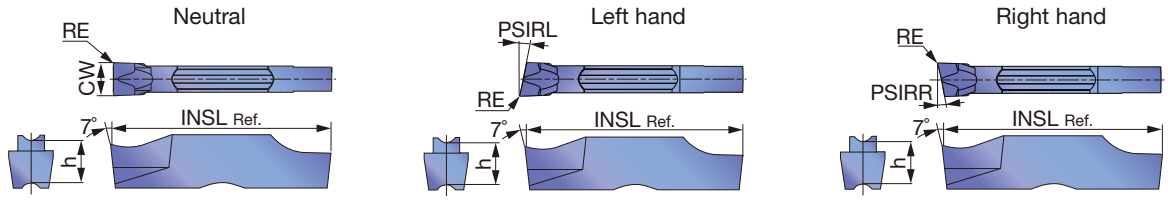
Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.141
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.338



Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

SGS

External/face deep grooving and parting



P	Steel	★	☆	★	☆	★						
M	Stainless	★	☆	★	★	★						
K	Cast iron	★		★	☆	★	☆					
N	Non-ferrous						☆					
S	Superalloys	★	☆	★			★					
H	Hard materials											

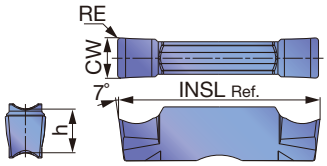
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●		●							0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●		●							0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●		●							0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●		●							0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°

● : Line up

DGG

External/face grooving (for high precision)



P	Steel	★			★						
M	Stainless	★									
K	Cast iron	★			☆			☆			
N	Non-ferrous							★			
S	Superalloys	★						☆			
H	Hard materials										

★ : First choice
☆ : Second choice

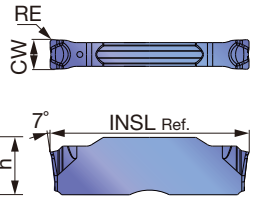
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated		Cermet		Uncoated				INSL (in)	h (in)
					AH7025		NS9530		KS05F					
DGG200-020	2	2	0.079	0.008	●		●		●				0.787	0.197
DGG300-020	3	3	0.118	0.008	●		●		●				0.787	0.197
DGG400-040	4	4	0.157	0.016	●		●		●				0.787	0.197
DGG500-040	5	5	0.197	0.016	●		●		●				0.984	0.217
DGG600-040	6	6	0.236	0.016	●		●		●				0.984	0.217

●: Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DGL

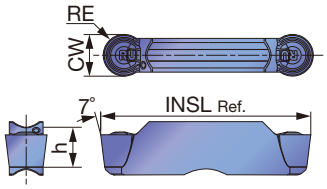
External/face grooving and parting



| | | |

DTR

Profiling and undercutting



P	Steel	★	★	☆	★		☆	★		★					
M	Stainless		★	☆	★		★	★							
K	Cast iron		★		★	☆	☆	★		☆			☆		
N	Non-ferrous												☆		
S	Superalloys		★	☆	★	★							★		
H	Hard materials														

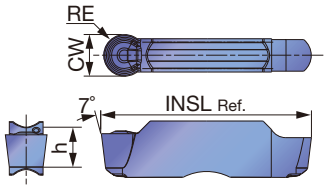
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			Uncoated			INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530			KS05F				
DTR2-100	2	2	0.079	0.039		●		●			●				●			0.787	0.197
DTR3-150	3	3	0.118	0.059	●	●	●	●	●	●	●	●			●			0.787	0.197
DTR4-200	4	4	0.157	0.079	●	●	●	●	●	●	●	●			●			0.787	0.197
DTR5-250	5	5	0.197	0.098	●	●	●	●	●	●	●	●			●			0.984	0.217
DTR6-300	6	6	0.236	0.118	●	●	●	●		●	●				●			0.984	0.217

● : Line up

STR

Profiling and undercutting



P	Steel	★	★												
M	Stainless	★	★												
K	Cast iron	★	★							☆					
N	Non-ferrous									☆					
S	Superalloys	★	★							★					
H	Hard materials														

★ : First choice
☆ : Second choice

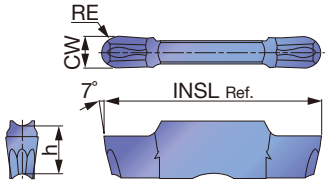
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Uncoated						INSL (in)	h (in)
					AH7025	AH8005						KS05F							
STR2-100	2	2	0.079	0.039	●	●						●						0.787	0.197
STR3-150	3	3	0.118	0.059	●	●						●						0.787	0.197
STR4-200	4	4	0.157	0.079	●	●						●						0.787	0.197
STR5-250	5	5	0.197	0.098	●	●						●						0.984	0.217
STR6-300	6	6	0.236	0.118	●	●						●						0.984	0.217

●: Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

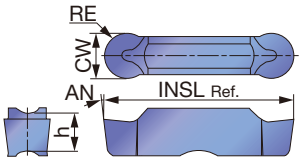
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)
DTIU300-150	3	3	0.118	0.059	●	●	●	0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●	0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●	0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●	0.984	0.217

●: Line up

DTA

Aluminum wheel machining (for high precision)



P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous	★		
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

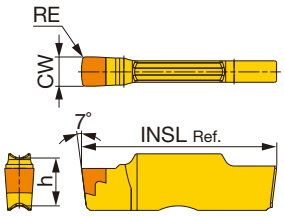
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°

●: Line up

Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

STH

External and face turning



P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

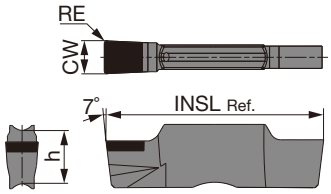
★ : First choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN	INSL (in)	h (in)
					BXA10		
STH300-SR	3	3	0.118	0.012	●	0.787	0.197
STH500-SR	5	5	0.197	0.012	●	0.984	0.217

●: Line up

SGN

External/face grooving



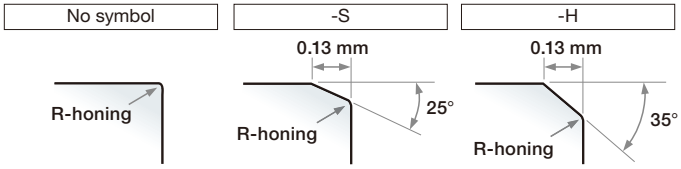
P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN	INSL (in)	h (in)	Condition		
					BX360			Continuous	Light interrupted	Heavy interrupted
SGN200-020	2	2	0.079	0.008	●	0.787	0.197	○		
SGN200-020-S	2	2	0.079	0.008	●	0.787	0.197		○	
SGN200-020-H	2	2	0.079	0.008	●	0.787	0.197			○
SGN300-020	3	3	0.118	0.008	●	0.787	0.197	○		
SGN300-020-S	3	3	0.118	0.008	●	0.787	0.197		○	
SGN300-020-H	3	3	0.118	0.008	●	0.787	0.197			○
SGN400-020	4	4	0.157	0.008	●	0.787	0.197	○		
SGN400-020-S	4	4	0.157	0.008	●	0.787	0.197		○	
SGN400-020-H	4	4	0.157	0.008	●	0.787	0.197			○
SGN500-020-S	5	5	0.197	0.008	●	0.984	0.217		○	
SGN500-020-H	5	5	0.197	0.008	●	0.984	0.217			○

●: Line up

Edge preparations



Reference pages: Toolholders → F196 - F206, Standard cutting conditions → F222

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Wear resistance	T9225, AH8005	262 - 984
		< 300 HB	Impact resistance	AH6235, GH130	164 - 394
		< 300 HB	Surface quality	NS9530	262 - 722
M	Stainless steel 303, 304, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Wear resistance	AH8005	164 - 394
		< 200 HB	Impact resistance	AH6235, GH130	164 - 394
K	Gray cast iron No.250B, etc.	-	First choice	T515	492 - 2297
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 591
	Ductile cast iron 65-45-12, etc.	-	First choice	T515	492 - 984
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH8005	66 - 197
		< HRC 40	Impact resistance	AH7025, AH725, AH6235	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	KS05F	66 - 328
		< HRC 40	Impact resistance	AH7025, AH725	66 - 262

Please see page F207 - F209 for feed: *f* (ipr).

STH

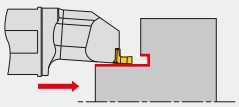
ISO	Grade	CW	Application	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
H	BXA10	0.118"	External turning	328 - 755	0.003 - 0.005	0.016 - 0.039
			Face turning	328 - 755	0.003 - 0.005	0.016 - 0.031
		0.197"	External turning	328 - 755	0.003 - 0.005	0.020 - 0.059
			Face turning	328 - 755	0.003 - 0.005	0.020 - 0.031

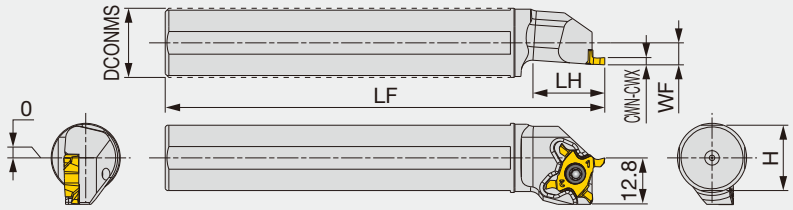
SGN

ISO	Grade	Edge preparation	Workpiece condition	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
H	BX360	No symbol	Continuous	262 - 492	0.0012 - 0.0031
		-S	Light interrupted	164 - 394	0.0012 - 0.0031
		-H	Heavy interrupted	131 - 328	0.0012 - 0.0024

JS-STCFL18

Face grooving toolholder with round shank





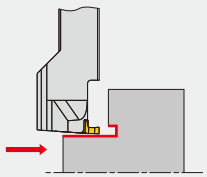
Left-hand (L) shown.

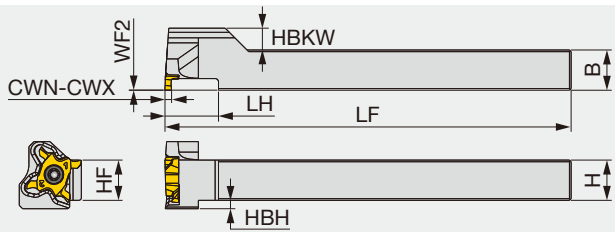
Metric	CWN	CWX	DCONMS	LF	LH	H	WF	Insert	Torque
JS16F-STCFL18	0.33	3.18	16	85	20	15	6	TCF18L...	1.2
JS19G-STCFL18	0.33	3.18	19.05	90	20	18	6	TCF18L...	1.2
JS19X-STCFL18	0.33	3.18	19.05	120	20	18	6	TCF18L...	1.2
JS20G-STCFL18	0.33	3.18	20	90	20	19	6	TCF18L...	1.2
JS20X-STCFL18	0.33	3.18	20	120	20	19	6	TCF18L...	1.2
JS22X-STCFL18	0.33	3.18	22	120	20	21	6	TCF18L...	1.2
JS25H-STCFL18	0.33	3.18	25	100	20	24	6	TCF18L...	1.2
JS254X-STCFL18	0.33	3.18	25.4	120	20	24.5	6	TCF18L...	1.2

Note: The left hand insert (L) is used for the left hand toolholders (L).
Torque: Recommended clamping torque: N·m

STCFVR-18

Face grooving toolholder with square shank, for Swiss lathes





Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF2	HBKW	HBH	Insert	Torque
STCFVR06-18	0.013	0.125	0.375	0.375	4.016	0.472	0.375	0	0.354	0.177	TCF18L...	0.89
STCFVR08-18	0.013	0.125	0.500	0.500	4.764	0.630	0.500	0	0.228	0.098	TCF18L...	0.89
STCFVR10-18	0.013	0.125	0.625	0.625	4.764	0.787	0.625	0	0.106	-	TCF18L...	0.89

Metric	CWN	CWX	H	B	LF	LH	HF	WF2	HBKW	HBH	Insert	Torque*
STCFVR1010H18	0.33	3.18	10	10	100	12	10	0	8.5	4.5	TCF18L...	1.2
STCFVR1212F18	0.33	3.18	12	12	85	16	12	0	6.5	2.5	TCF18L...	1.2
STCFVR1212X18	0.33	3.18	12	12	120	16	12	0	6.5	2.5	TCF18L...	1.2
STCFVR1616X18	0.33	3.18	16	16	120	20	16	0	2.5	0	TCF18L...	1.2

Note: The left hand insert (L) is used for the right hand toolholders (R).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS



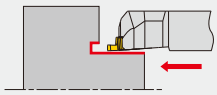


Designation	Clamping screw	Wrench
JS**-STCFL18, STCFVR**18	CSTC-4L100DR	T-1008/5

Reference pages: Inserts → F229, F230, Standard cutting conditions → F237

STCR/L-18

Precision grooving tools with uniquely shaped insert for swiss type machine and general lathes



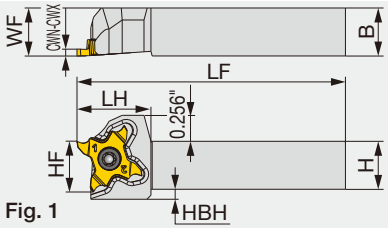


Fig. 1

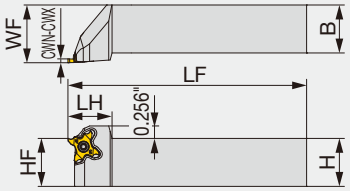
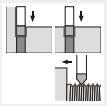


Fig. 2



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.013	0.125	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.013	0.125	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.013	0.125	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.013	0.125	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.013	0.125	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2

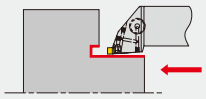
Metric	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*	Fig.
STCR/L1010X18	0.33	3.18	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.33	3.18	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.33	3.18	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.33	3.18	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.33	3.18	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.33	3.18	20	20	120	23	20	25	-	TC*18...	1.2	2
STCR/L2525Z18	0.33	3.18	25	25	135	23	25	30	-	TC*18...	1.2	2

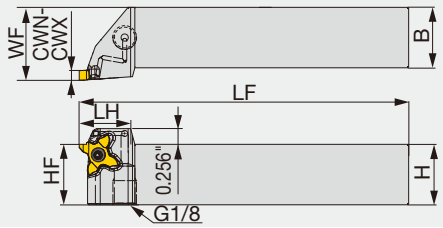
The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert is used for the left hand toolholders
Torque: Recommended clamping torque: lbs·ft (*N·m)

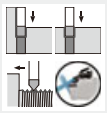
STCR/L-18-CHP

Tube connection

Threading tool - for external theading with high pressure coolant capability







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.013	0.125	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.89
STCR/L16-18-CHP	0.013	0.125	1.000	1.000	5.500	0.900	-	1.000	1.250	-	TC*18...	0.89

Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque*
STCR/L2020X18-CHP	0.33	3.18	20	20	120	23	-	20	25	-	TC*18...	1.2
STCR/L2525Z18-CHP	0.33	3.18	25	25	135	23	-	25	30	-	TC*18...	1.2

Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18L...) with the left hand holder (STCL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS



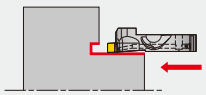


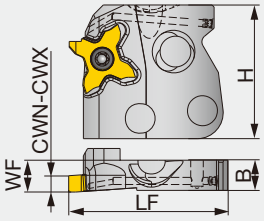
Designation	Clamping screw	Wrench
STCL**18, STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18, STCR**18-CHP	CSTC-4L100DL	T-1008/5

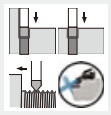
Reference pages: STCR/L-18: Inserts → F229 - F236, Standard cutting conditions → F237
STCR/L-18-CHP: Inserts → F229 - F236, Standard cutting conditions → F237
Parts for coolant hose → F290

STCAR/L18-CHP

External grooving and threading adapter, with high pressure coolant capability







Right-hand (R) shown.

Metric	CWN	CWX	WF	H	LF	B	Insert	Torque
STCAR/L18-CHP	0.33	3.18	7.5	33	38	7.2	TC*18...	1.2

Use the right hand insert (TC*18R...) with the right hand adapter (STCAR...). Use the left hand insert (TC*18L...) with the left hand adapter (STCAL...).
Torque: Recommended clamping torque: N·m

SPARE PARTS





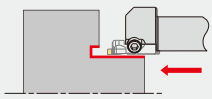
Designation	Clamping screw	Wrench
STCAL18-CHP	CSTC-4L100DR	T-1008/5
STCAR18-CHP	CSTC-4L100DL	T-1008/5

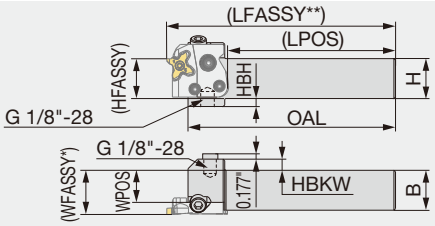
Reference pages: STCAR/L18-CHP: Inserts → F229 - F236, Shanks and toolholders → F226 - F228
Standard cutting conditions → F237, Technical Reference → L059

CHSR/L-CHP

Tube connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	STCAR/L18-CHP	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	STCAR/L18-CHP	3.69

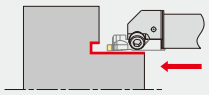
Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	STCAR/L18-CHP	6.5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	STCAR/L18-CHP	6.5

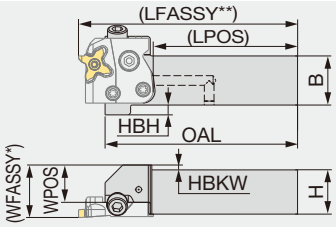
WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

CHSR/L-CHP-MC

Direct connection

Shank for adapter, with high pressure coolant capability





Right hand (R)
with right-hand adapter shown.

Metric	H	B	OAL	LPOS	WPOS	HBKW	HBH	Adapter (Option)	Torque
CHSR/L2020-CHP-MC	20	20	98	73.5	14	6	10	STCAR/L18-CHP	6.5
CHSR/L2525-CHP-MC	25	25	98	73.5	19	-	5	STCAR/L18-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (WF)
LFASSY** : Shank (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179
CHSR/L**-CHP-MC	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	-

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

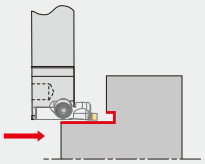
Shank	Adapter	
	STCAR18-CHP	STCAL18-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

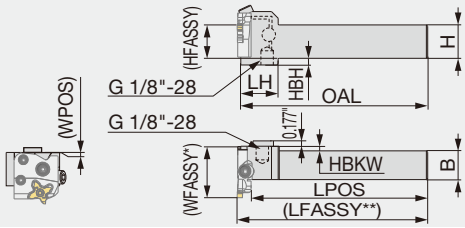
● : Corresponding

Reference pages: Inserts → F229 - F236, Adapters → F225, Standard cutting conditions → F237
Parts for coolant hose → F290, Technical Reference → L059

CHFVR/L-CHP

Shank for perpendicularly-mounted adapter, with high pressure coolant capability





Right hand (R)
with left-hand adapter shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	STCAL/R18-CHP	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	STCAL/R18-CHP	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Adapter (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	STCAL/R18-CHP	6.5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	STCAL/R18-CHP	6.5

WFASSY* : Shank (WPOS) + adapter (LF)
LFASSY** : Shank (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N	PLUGG1/8ISO1179

Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SR M5-04451	1.84	2.5
SR M6X12DIN6912	4.79	6.5
SR M6X20-XT	4.79	6.5

Combination of adapter and shank

Shank	Adapter	
	STCAR18-CHP	STCAL18-CHP
CHSR**-CHP (-MC)	●	
CHSL**-CHP (-MC)		●
CHFVR**-CHP		●
CHFVL**-CHP	●	

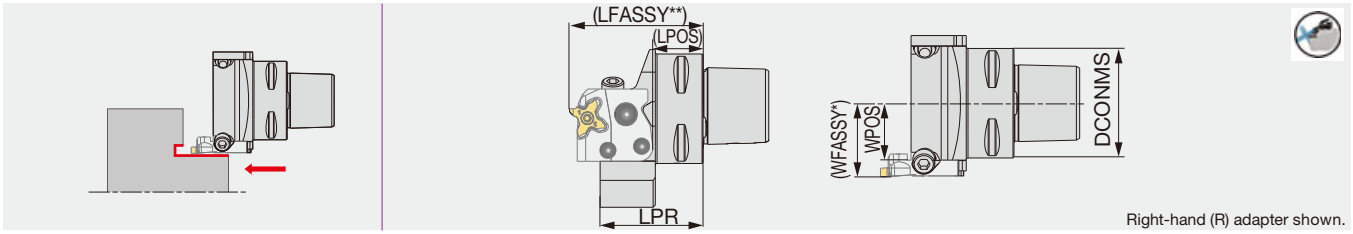
● : Corresponding

Reference pages: Inserts → F229 - F236, Adapters → F225, Standard cutting conditions → F237
Parts for coolant hose → F290, Technical Reference → L059

C*CHSN-CHP

Direct connection

Toolholder with TungCap connection, for adapter, with high pressure coolant capability



Right-hand (R) adapter shown.

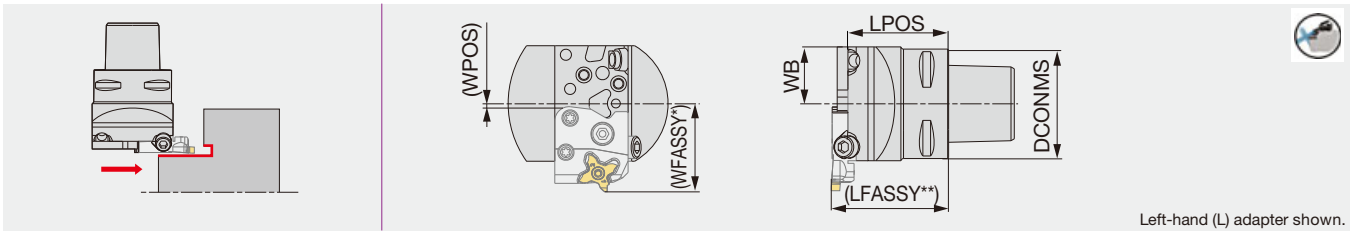
Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	STCAR/L18-CHP	6.5
C4CHSN21047-CHP	40	46.5	21.5	21	STCAR/L18-CHP	6.5
C5CHSN26047-CHP	50	47	22.5	26	STCAR/L18-CHP	6.5
C6CHSN33050-CHP	63	50	24.5	32.5	STCAR/L18-CHP	6.5

WFASSY* : Toolholder (WPOS) + adapter (WF)
LFASSY** : Toolholder (LPOS) + adapter (LF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

C*CHFVN-CHP

Direct connection

Toolholder with TungCap connection, for perpendicularly-mounted adapter, with high pressure coolant capability



Left-hand (L) adapter shown.

Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	STCAR/L18-CHP	6.5
C4CHFVN26046-CHP	40	46	26	1.5	STCAR/L18-CHP	6.5
C5CHFVN26046-CHP	50	46	26	1.5	STCAR/L18-CHP	6.5
C6CHFVN33046-CHP	63	46	33	8.5	STCAR/L18-CHP	6.5

WFASSY* : Toolholder (WPOS) + adapter (LF)
LFASSY** : Toolholder (LPOS) + adapter (WF)
The LFASSY or WFASSY value may change depending on the adapter type.
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
Please see page L059 for instructions on installing and removing the adapter or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CH**N**-CHP	SR M5-04451	T-20/5	SR M6X12DIN6912	SR M6X20-XT	HW5.0	OR 5X1N

Recommended clamping torque (N·m)

Clamping screw	Torque (N·m)
SR M5-04451	2.5
SR M6X12DIN6912	6.5
SR M6X20-XT	6.5

Reference pages: Inserts → F229 - F236, Adapters → F225, Standard cutting conditions → F237
Technical Reference → L059

Face grooving

TCF18 (4 corners)



F230

First choice for face grooving

Provides light cutting action and excellent surface finish.
Provides superior chip evacuation for face grooving operations.

CW = 0.020" - 0.098"
CDX = 0.118"



External grooving

TCS18 (4 corners)



F230, F231

First choice for O.D. grooving

General-purpose pressed-in 3D chipbreaker for smooth chip control

CW = 0.039" - 0.118"
CDX = 0.118"



TCL18 (4 corners)



F232

For lighter cutting action

Features pressed-in 3D chipbreaker with sharp cutting edge for light cutting action. Provides excellent chip control at low feed rates.

CW = 0.059" - 0.118"
CDX = 0.118"



TCG18 (4 corners)



F233, F234

For better chipping resistance

Features an optimum rake angle and edge preparation for a good balance of light cutting action and fracture resistance.

CW = 0.039" - 0.125"
CDX = 0.118"



TCP18 (4 corners)



F235, F236

For higher surface quality

Featuring a large rake angle, providing light cutting action and better surface finish. TCP-F style insert is also available for sharp cutting edge.

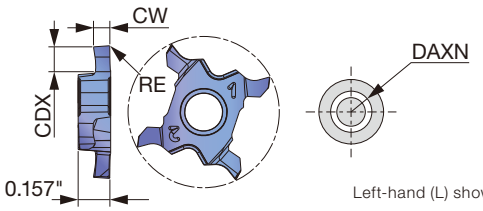
CW = 0.013" - 0.118"
CDX = 0.118"



Please see page F*** for the product details.

TCF18L (Face grooving, sharp edge)





Left-hand (L) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

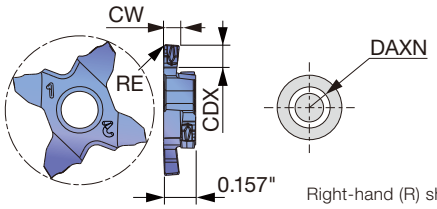
★: First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX (in)	DAXN (in)
TCF18L050F-005	L	0.5	0.020	0.002	●	0.039	0.236
TCF18L100F-005	L	1	0.039	0.002	●	0.098	0.236
TCF18L150F-005	L	1.5	0.059	0.002	●	0.098	0.236
TCF18L200F-005	L	2	0.079	0.002	●	0.118	0.236
TCF18L250F-005	L	2.5	0.098	0.002	●	0.118	0.236

5 pieces per package
●: Line up

TCS18R/L (3D chipbreaker, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079	2.559
TCS18L100-010	L	1	0.039	0.004	●	0.079	2.559
TCS18R120-010	R	1.2	0.047	0.004	●	0.079	2.559
TCS18L120-010	L	1.2	0.047	0.004	●	0.079	2.559
TCS18R125-010	R	1.25	0.049	0.004	●	0.079	2.559
TCS18L125-010	L	1.25	0.049	0.004	●	0.079	2.559
TCS18R125-020	R	1.25	0.049	0.008	●	0.079	2.559
TCS18L125-020	L	1.25	0.049	0.008	●	0.079	2.559
TCS18R130-020	R	1.3	0.051	0.008	●	0.118	2.559
TCS18L130-020	L	1.3	0.051	0.008	●	0.118	2.559
TCS18R140-010	R	1.4	0.055	0.004	●	0.118	2.559
TCS18L140-010	L	1.4	0.055	0.004	●	0.118	2.559
TCS18R140-020	R	1.4	0.055	0.008	●	0.118	2.559
TCS18L140-020	L	1.4	0.055	0.008	●	0.118	2.559
TCS18R145-010	R	1.45	0.057	0.004	●	0.118	2.559
TCS18L145-010	L	1.45	0.057	0.004	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

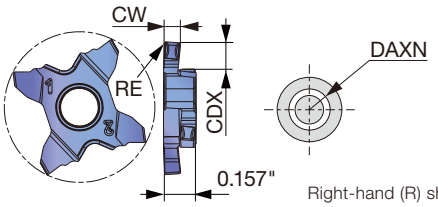
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCS18R150-010	R	1.5	0.059	0.004	●	0.118	2.559
TCS18L150-010	L	1.5	0.059	0.004	●	0.118	2.559
TCS18R150-020	R	1.5	0.059	0.008	●	0.118	2.559
TCS18L150-020	L	1.5	0.059	0.008	●	0.118	2.559
TCS18R160-020	R	1.6	0.063	0.008	●	0.118	2.559
TCS18L160-020	L	1.6	0.063	0.008	●	0.118	2.559
TCS18R170-020	R	1.7	0.067	0.008	●	0.118	2.559
TCS18L170-020	L	1.7	0.067	0.008	●	0.118	2.559
TCS18R175-010	R	1.75	0.069	0.004	●	0.118	2.559
TCS18L175-010	L	1.75	0.069	0.004	●	0.118	2.559
TCS18R175-020	R	1.75	0.069	0.008	●	0.118	2.559
TCS18L175-020	L	1.75	0.069	0.008	●	0.118	2.559
TCS18R185-020	R	1.85	0.073	0.008	●	0.118	2.559
TCS18L185-020	L	1.85	0.073	0.008	●	0.118	2.559
TCS18R195-020	R	1.95	0.077	0.008	●	0.118	2.559
TCS18L195-020	L	1.95	0.077	0.008	●	0.118	2.559
TCS18R200-010	R	2	0.079	0.004	●	0.118	2.559
TCS18L200-010	L	2	0.079	0.004	●	0.118	2.559
TCS18R200-020	R	2	0.079	0.008	●	0.118	2.559
TCS18L200-020	L	2	0.079	0.008	●	0.118	2.559
TCS18R225-020	R	2.25	0.089	0.008	●	0.118	2.559
TCS18L225-020	L	2.25	0.089	0.008	●	0.118	2.559
TCS18R230-020	R	2.3	0.091	0.008	●	0.118	2.559
TCS18L230-020	L	2.3	0.091	0.008	●	0.118	2.559
TCS18R250-010	R	2.5	0.098	0.004	●	0.118	2.559
TCS18L250-010	L	2.5	0.098	0.004	●	0.118	2.559
TCS18R250-020	R	2.5	0.098	0.008	●	0.118	2.559
TCS18L250-020	L	2.5	0.098	0.008	●	0.118	2.559
TCS18R250-030	R	2.5	0.098	0.012	●	0.118	2.559
TCS18L250-030	L	2.5	0.098	0.012	●	0.118	2.559
TCS18R265-030	R	2.65	0.104	0.012	●	0.118	2.559
TCS18L265-030	L	2.65	0.104	0.012	●	0.118	2.559
TCS18R280-030	R	2.8	0.110	0.012	●	0.118	2.559
TCS18L280-030	L	2.8	0.110	0.012	●	0.118	2.559
TCS18R300-010	R	3	0.118	0.004	●	0.118	2.559
TCS18L300-010	L	3	0.118	0.004	●	0.118	2.559
TCS18R300-020	R	3	0.118	0.008	●	0.118	2.559
TCS18L300-020	L	3	0.118	0.008	●	0.118	2.559
TCS18R300-030	R	3	0.118	0.012	●	0.118	2.559
TCS18L300-030	L	3	0.118	0.012	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

TCL18R/L (3D chipbreaker, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

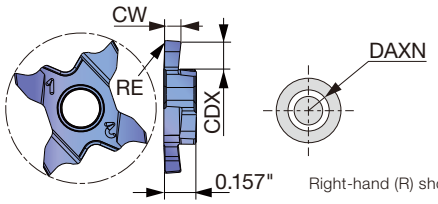
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCL18R150-010	R	1.5	0.059	0.004	●	0.118	2.559
TCL18L150-010	L	1.5	0.059	0.004	●	0.118	2.559
TCL18R150-020	R	1.5	0.059	0.008	●	0.118	2.559
TCL18L150-020	L	1.5	0.059	0.008	●	0.118	2.559
TCL18R175-020	R	1.75	0.069	0.008	●	0.118	2.559
TCL18L175-020	L	1.75	0.069	0.008	●	0.118	2.559
TCL18R200-010	R	2	0.079	0.004	●	0.118	2.559
TCL18L200-010	L	2	0.079	0.004	●	0.118	2.559
TCL18R200-020	R	2	0.079	0.008	●	0.118	2.559
TCL18L200-020	L	2	0.079	0.008	●	0.118	2.559
TCL18R250-030	R	2.5	0.098	0.012	●	0.118	2.559
TCL18L250-030	L	2.5	0.098	0.012	●	0.118	2.559
TCL18R300-010	R	3	0.118	0.004	●	0.118	2.559
TCL18L300-010	L	3	0.118	0.004	●	0.118	2.559
TCL18R300-020	R	3	0.118	0.008	●	0.118	2.559
TCL18L300-020	L	3	0.118	0.008	●	0.118	2.559
TCL18R300-030	R	3	0.118	0.012	●	0.118	2.559
TCL18L300-030	L	3	0.118	0.012	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

TCG18R/L (honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCG18R100-010	R	1	0.039	0.004	●	0.079	2.559
TCG18L100-010	L	1	0.039	0.004	●	0.079	2.559
TCG18R120-010	R	1.2	0.047	0.004	●	0.079	2.559
TCG18L120-010	L	1.2	0.047	0.004	●	0.079	2.559
TCG18R125-010	R	1.25	0.049	0.004	●	0.079	2.559
TCG18L125-010	L	1.25	0.049	0.004	●	0.079	2.559
TCG18R125-020	R	1.25	0.049	0.008	●	0.079	2.559
TCG18L125-020	L	1.25	0.049	0.008	●	0.079	2.559
TCG18R130-020	R	1.3	0.051	0.008	●	0.079	2.559
TCG18L130-020	L	1.3	0.051	0.008	●	0.079	2.559
TCG18R140-010	R	1.4	0.055	0.004	●	0.118	2.559
TCG18L140-010	L	1.4	0.055	0.004	●	0.118	2.559
TCG18R140-020	R	1.4	0.055	0.008	●	0.118	2.559
TCG18L140-020	L	1.4	0.055	0.008	●	0.118	2.559
TCG18R145-010	R	1.45	0.057	0.004	●	0.118	2.559
TCG18L145-010	L	1.45	0.057	0.004	●	0.118	2.559
TCG18R145-020	R	1.45	0.057	0.008	●	0.118	2.559
TCG18L145-020	L	1.45	0.057	0.008	●	0.118	2.559
TCG18R150-010	R	1.5	0.059	0.004	●	0.118	2.559
TCG18L150-010	L	1.5	0.059	0.004	●	0.118	2.559
TCG18R150-020	R	1.5	0.059	0.008	●	0.118	2.559
TCG18L150-020	L	1.5	0.059	0.008	●	0.118	2.559
TCG18R160-020	R	1.6	0.063	0.008	●	0.118	2.559
TCG18L160-020	L	1.6	0.063	0.008	●	0.118	2.559
TCG18R170-020	R	1.7	0.067	0.008	●	0.118	2.559
TCG18L170-020	L	1.7	0.067	0.008	●	0.118	2.559
TCG18R175-010	R	1.75	0.069	0.004	●	0.118	2.559
TCG18L175-010	L	1.75	0.069	0.004	●	0.118	2.559
TCG18R175-020	R	1.75	0.069	0.008	●	0.118	2.559
TCG18L175-020	L	1.75	0.069	0.008	●	0.118	2.559
TCG18R185-020	R	1.85	0.073	0.008	●	0.118	2.559
TCG18L185-020	L	1.85	0.073	0.008	●	0.118	2.559
TCG18R195-020	R	1.95	0.077	0.008	●	0.118	2.559
TCG18L195-020	L	1.95	0.077	0.008	●	0.118	2.559
TCG18R200-010	R	2	0.079	0.004	●	0.118	2.559
TCG18L200-010	L	2	0.079	0.004	●	0.118	2.559
TCG18R200-020	R	2	0.079	0.008	●	0.118	2.559
TCG18L200-020	L	2	0.079	0.008	●	0.118	2.559
TCG18R225-020	R	2.25	0.089	0.008	●	0.118	2.559
TCG18L225-020	L	2.25	0.089	0.008	●	0.118	2.559
TCG18R230-020	R	2.3	0.091	0.008	●	0.118	2.559
TCG18L230-020	L	2.3	0.091	0.008	●	0.118	2.559
TCG18R250-010	R	2.5	0.098	0.004	●	0.118	2.559
TCG18L250-010	L	2.5	0.098	0.004	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

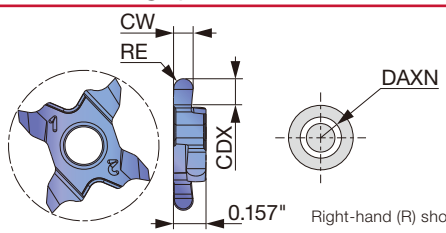
★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCG18R250-020	R	2.5	0.098	0.008	●	0.118	2.559
TCG18L250-020	L	2.5	0.098	0.008	●	0.118	2.559
TCG18R250-030	R	2.5	0.098	0.012	●	0.118	2.559
TCG18L250-030	L	2.5	0.098	0.012	●	0.118	2.559
TCG18R265-030	R	2.65	0.104	0.012	●	0.118	2.559
TCG18L265-030	L	2.65	0.104	0.012	●	0.118	2.559
TCG18R280-030	R	2.8	0.110	0.012	●	0.118	2.559
TCG18L280-030	L	2.8	0.110	0.012	●	0.118	2.559
TCG18R300-010	R	3	0.118	0.004	●	0.118	2.559
TCG18L300-010	L	3	0.118	0.004	●	0.118	2.559
TCG18R300-020	R	3	0.118	0.008	●	0.118	2.559
TCG18L300-020	L	3	0.118	0.008	●	0.118	2.559
TCG18R300-030	R	3	0.118	0.012	●	0.118	2.559
TCG18L300-030	L	3	0.118	0.012	●	0.118	2.559

5 pieces per package
● : Line up

TCG18R/L (Full R, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

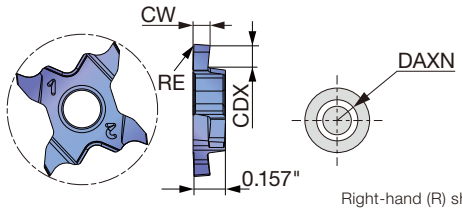
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	DAXN (in)
TCG18R100-050	R	1	0.039	0.020	●	0.079	2.559
TCG18L100-050	L	1	0.039	0.020	●	0.079	2.559
TCG18R158-079	R	1.58	0.062	0.031	●	0.118	2.559
TCG18L158-079	L	1.58	0.062	0.031	●	0.118	2.559
TCG18R200-100	R	2	0.079	0.039	●	0.118	2.559
TCG18L200-100	L	2	0.079	0.039	●	0.118	2.559
TCG18R239-120	R	2.39	0.094	0.047	●	0.118	2.559
TCG18L239-120	L	2.39	0.094	0.047	●	0.118	2.559
TCG18R300-150	R	3	0.118	0.059	●	0.118	2.559
TCG18L300-150	L	3	0.118	0.059	●	0.118	2.559
TCG18R318-159	R	3.18	0.125	0.063	●	0.118	2.559
TCG18L318-159	L	3.18	0.125	0.063	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

TCP18R/L (lightly honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	DAXN (in)
TCP18R033-005	R	0.33	0.013	0.002	●	0.031	2.559
TCP18L033-005	L	0.33	0.013	0.002	●	0.031	2.559
TCP18R043-005	R	0.43	0.017	0.002	●	0.047	2.559
TCP18L043-005	L	0.43	0.017	0.002	●	0.047	2.559
TCP18R050-005	R	0.5	0.020	0.002	●	0.047	2.559
TCP18L050-005	L	0.5	0.020	0.002	●	0.047	2.559
TCP18R075-005	R	0.75	0.030	0.002	●	0.079	2.559
TCP18L075-005	L	0.75	0.030	0.002	●	0.079	2.559
TCP18R095-005	R	0.95	0.037	0.002	●	0.079	2.559
TCP18L095-005	L	0.95	0.037	0.002	●	0.079	2.559
TCP18R100-010	R	1	0.039	0.004	●	0.079	2.559
TCP18L100-010	L	1	0.039	0.004	●	0.079	2.559
TCP18R120-010	R	1.2	0.047	0.004	●	0.079	2.559
TCP18L120-010	L	1.2	0.047	0.004	●	0.079	2.559
TCP18R125-010	R	1.25	0.049	0.004	●	0.079	2.559
TCP18L125-010	L	1.25	0.049	0.004	●	0.079	2.559
TCP18R140-010-35	R	1.4	0.055	0.004	●	0.118	2.559
TCP18L140-010-35	L	1.4	0.055	0.004	●	0.118	2.559
TCP18R145-010	R	1.45	0.057	0.004	●	0.079	2.559
TCP18L145-010	L	1.45	0.057	0.004	●	0.079	2.559
TCP18R145-010-35	R	1.45	0.057	0.004	●	0.118	2.559
TCP18L145-010-35	L	1.45	0.057	0.004	●	0.118	2.559
TCP18R150-010	R	1.5	0.059	0.004	●	0.079	2.559
TCP18L150-010	L	1.5	0.059	0.004	●	0.079	2.559
TCP18R150-010-35	R	1.5	0.059	0.004	●	0.118	2.559
TCP18L150-010-35	L	1.5	0.059	0.004	●	0.118	2.559
TCP18R175-010	R	1.75	0.069	0.004	●	0.079	2.559
TCP18L175-010	L	1.75	0.069	0.004	●	0.079	2.559
TCP18R175-010-35	R	1.75	0.069	0.004	●	0.118	2.559
TCP18L175-010-35	L	1.75	0.069	0.004	●	0.118	2.559
TCP18R200-010	R	2	0.079	0.004	●	0.098	2.559
TCP18L200-010	L	2	0.079	0.004	●	0.098	2.559
TCP18R200-010-35	R	2	0.079	0.004	●	0.118	2.559
TCP18L200-010-35	L	2	0.079	0.004	●	0.118	2.559
TCP18R250-010	R	2.5	0.098	0.004	●	0.098	2.559
TCP18L250-010	L	2.5	0.098	0.004	●	0.098	2.559
TCP18R250-010-35	R	2.5	0.098	0.004	●	0.118	2.559
TCP18L250-010-35	L	2.5	0.098	0.004	●	0.118	2.559
TCP18R300-010	R	3	0.118	0.004	●	0.098	2.559
TCP18L300-010	L	3	0.118	0.004	●	0.098	2.559
TCP18R300-010-35	R	3	0.118	0.004	●	0.118	2.559
TCP18L300-010-35	L	3	0.118	0.004	●	0.118	2.559

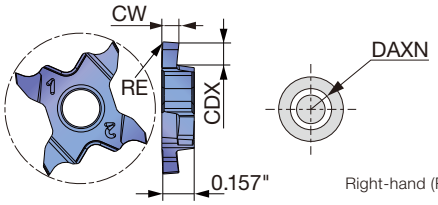
5 pieces per package

● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

TCP18R/L-F (sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)	DAXN (in)
					SH725		
TCP18R033F-005	R	0.33	0.013	0.002	●	0.031	2.559
TCP18L033F-005	L	0.33	0.013	0.002	●	0.031	2.559
TCP18R043F-005	R	0.43	0.017	0.002	●	0.047	2.559
TCP18L043F-005	L	0.43	0.017	0.002	●	0.047	2.559
TCP18R050F-005	R	0.5	0.020	0.002	●	0.047	2.559
TCP18L050F-005	L	0.5	0.020	0.002	●	0.047	2.559
TCP18R075F-005	R	0.75	0.030	0.002	●	0.079	2.559
TCP18L075F-005	L	0.75	0.030	0.002	●	0.079	2.559
TCP18R095F-005	R	0.95	0.037	0.002	●	0.079	2.559
TCP18L095F-005	L	0.95	0.037	0.002	●	0.079	2.559
TCP18R100F-005	R	1	0.039	0.002	●	0.079	2.559
TCP18R100F-010	R	1	0.039	0.004	●	0.079	2.559
TCP18L100F-010	L	1	0.039	0.004	●	0.079	2.559
TCP18R120F-005	R	1.2	0.047	0.002	●	0.079	2.559
TCP18R120F-010	R	1.2	0.047	0.004	●	0.079	2.559
TCP18L120F-010	L	1.2	0.047	0.004	●	0.079	2.559
TCP18R125F-005	R	1.25	0.049	0.002	●	0.079	2.559
TCP18R125F-010	R	1.25	0.049	0.004	●	0.079	2.559
TCP18L125F-010	L	1.25	0.049	0.004	●	0.079	2.559
TCP18R140F-010-35	R	1.4	0.055	0.004	●	0.118	2.559
TCP18R145F-005-35	R	1.45	0.057	0.002	●	0.118	2.559
TCP18R145F-010	R	1.45	0.057	0.004	●	0.079	2.559
TCP18L145F-010	L	1.45	0.057	0.004	●	0.079	2.559
TCP18R145F-010-35	R	1.45	0.057	0.004	●	0.118	2.559
TCP18L145F-010-35	L	1.45	0.057	0.004	●	0.118	2.559
TCP18R150F-005-35	R	1.5	0.059	0.002	●	0.118	2.559
TCP18R150F-010	R	1.5	0.059	0.004	●	0.079	2.559
TCP18L150F-010	L	1.5	0.059	0.004	●	0.079	2.559
TCP18R150F-010-35	R	1.5	0.059	0.004	●	0.118	2.559
TCP18L150F-010-35	L	1.5	0.059	0.004	●	0.118	2.559
TCP18R175F-005-35	R	1.75	0.069	0.002	●	0.118	2.559
TCP18R175F-010	R	1.75	0.069	0.004	●	0.079	2.559
TCP18L175F-010	L	1.75	0.069	0.004	●	0.079	2.559
TCP18R175F-010-35	R	1.75	0.069	0.004	●	0.118	2.559
TCP18L175F-010-35	L	1.75	0.069	0.004	●	0.118	2.559
TCP18R200F-005-35	R	2	0.079	0.002	●	0.118	2.559
TCP18R200F-010	R	2	0.079	0.004	●	0.098	2.559
TCP18L200F-010	L	2	0.079	0.004	●	0.098	2.559
TCP18R200F-010-35	R	2	0.079	0.004	●	0.118	2.559
TCP18L200F-010-35	L	2	0.079	0.004	●	0.118	2.559
TCP18R250F-010	R	2.5	0.098	0.004	●	0.098	2.559
TCP18L250F-010	L	2.5	0.098	0.004	●	0.098	2.559
TCP18R250F-010-35	R	2.5	0.098	0.004	●	0.118	2.559
TCP18L250F-010-35	L	2.5	0.098	0.004	●	0.118	2.559
TCP18R300F-010	R	3	0.118	0.004	●	0.098	2.559
TCP18L300F-010	L	3	0.118	0.004	●	0.098	2.559
TCP18R300F-010-35	R	3	0.118	0.004	●	0.118	2.559
TCP18L300F-010-35	L	3	0.118	0.004	●	0.118	2.559

5 pieces per package
● : Line up

Reference pages: Toolholders → F223 - F228, Standard cutting conditions → F237

STANDARD CUTTING CONDITIONS

TCF18L (Face grooving)

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, etc.	SH725	98 - 328	0.0004 - 0.0016
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH725	98 - 328	0.0004 - 0.0016
P	Prehardened steel NAK80, PX5, etc.	SH725	98 - 328	0.0004 - 0.0016
M	Stainless steel 304, 316, etc.	SH725	98 - 328	0.0004 - 0.0016
K	Gray cast iron No.250B, No.300B, etc.	SH725	98 - 328	0.0004 - 0.0016
K	Ductile cast iron 60-40-18, etc.	SH725	98 - 328	0.0004 - 0.0016
S	Titanium alloys Ti-6Al-4V, etc.	SH725	66 - 131	0.0004 - 0.0016
S	Superalloys Inconel718, etc.	SH725	33 - 98	0.0004 - 0.0016

TCS18R/L, TCL18R/L (3D chipbreaker), TCG18R/L (honed edge), TCG18R/L (Full R)

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				TCL18	TCS18	TCG18
P	Low carbon steel 1015, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Carbon steel, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
M	Stainless steel 304, 316, etc.	AH7025	164 - 394	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Gray cast iron No.250B, No.300B, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
K	Ductile cast iron 60-40-18, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 197	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 131	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006

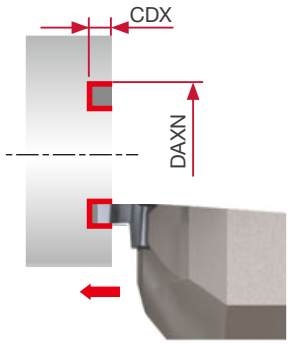
TCP18R/L (lightly honed edge), TCP18R/L-F (sharp edge)

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Low carbon steel 1015, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, 4140, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, 4140, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	Toughness	AH725	262 - 591	0.001 - 0.004
M	Stainless steel 304, 316, etc.	First choice	SH725	164 - 394	0.001 - 0.004
M	Stainless steel 304, 316, etc.	Toughness	AH725	164 - 394	0.001 - 0.004
K	Gray cast iron No.250B, No.300B, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K	Gray cast iron No.250B, No.300B, etc.	Sharpness	SH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, etc.	Sharpness	SH725	164 - 591	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	Toughness	AH725	98 - 262	0.001 - 0.004
S	Superalloys Inconel718, etc.	First choice	AH725	66 - 131	0.001 - 0.004

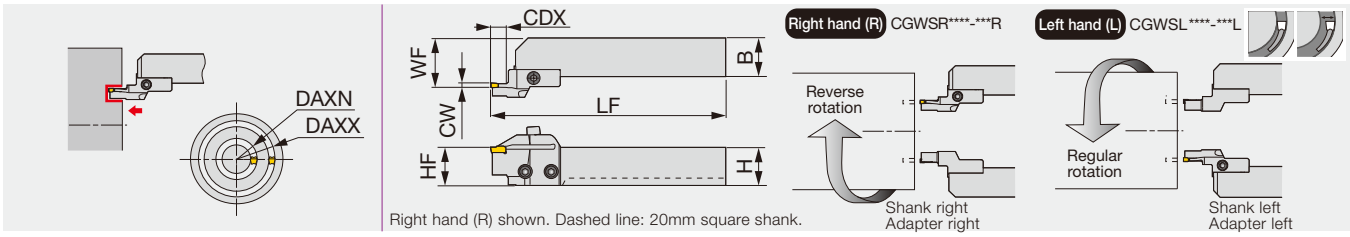
Precautions of processing

Minimum diameter for face grooving

Minimum face diameter DAXN (in)	Maximum groove depth CDX (in)
2.559	0.118



Adapter for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)



Right hand (R) shown. Dashed line: 20mm square shank.

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	3	30	40	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S4050R/L	3	40	50	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S5065R/L	3	50	65	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S6590R/L	3	65	90	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S90150R/L	3	90	150	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S150500R/L	3	150	500	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
40S3545R/L	4	35	45	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S4555R/L	4	45	55	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S5580R/L	4	55	80	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S80140R/L	4	80	140	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S140500R/L	4	140	500	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D3545R/L	4	35	45	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D4555R/L	4	45	55	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D5580R/L	4	55	80	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D80140R/L	4	80	140	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D140500R/L	4	140	500	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
50S3545R/L	5	35	45	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S4555R/L	5	45	55	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S5575R/L	5	55	75	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S75130R/L	5	75	130	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S130500R/L	5	130	500	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50D3545R/L	5	35	45	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D4555R/L	5	45	55	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D5575R/L	5	55	75	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D75130R/L	5	75	130	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D130500R/L	5	130	500	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5

Toolholders are in stock with the designations of: a set of shank and adapter; a shank; a adapter. Combining the designations of a adapter and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a adapter.
Use right-hand shanks (CGWSR～) with right-hand adapters (～R); and left-hand shanks (CGWSL～) with left-hand adapters (～L).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Adapter screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Combination of adapter and shank

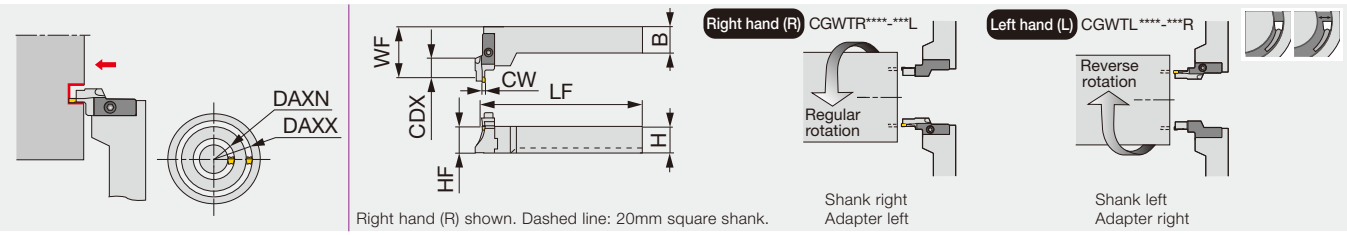
Shank	Adapter	
	S/DR	**S/D**L
CGWSR...	●	
CGWSL...		●
CGWTR...		●
CGWTL...	●	

● : Corresponding

Reference pages: Inserts → F241 - F244, Shanks → F240, Standard cutting conditions → F245

#S/D##R/L+CGWTR/L

Adapter for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)



Right hand (R) shown. Dashed line: 20mm square shank.

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	3	30	40	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S4050R/L	3	40	50	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S5065R/L	3	50	65	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S6590R/L	3	65	90	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S90150R/L	3	90	150	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S150500R/L	3	150	500	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
40S3545R/L	4	35	45	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S4555R/L	4	45	55	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S5580R/L	4	55	80	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S80140R/L	4	80	140	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S140500R/L	4	140	500	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40D3545R/L	4	35	45	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D4555R/L	4	45	55	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D5580R/L	4	55	80	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D80140R/L	4	80	140	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D140500R/L	4	140	500	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
50S3545R/L	5	35	45	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S4555R/L	5	45	55	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S5575R/L	5	55	75	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S75130R/L	5	75	130	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S130500R/L	5	130	500	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50D3545R/L	5	35	45	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D4555R/L	5	45	55	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D5575R/L	5	55	75	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D75130R/L	5	75	130	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D130500R/L	5	130	500	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5

Toolholders are in stock with the designations of: a set of shank and adapter; a shank; a adapter. Combining the designations of a adapter and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a adapter.
Use right-hand shanks (CGWTR～) with left-hand adapters (～L); and left-hand shanks (CGWTL～) with right-hand adapters (～R).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Adapter screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Combination of adapter and shank

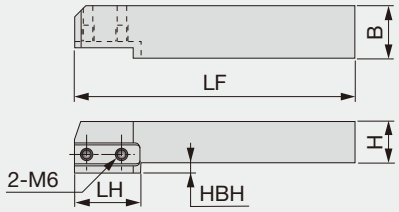
Shank	Adapter	
	S/DR	**S/D**L
CGWSR...	●	
CGWSL...		●
CGWTR...		●
CGWTL...	●	

● : Corresponding

Reference pages: Inserts → F241 - F244, Shanks → F240, Standard cutting conditions → F245

CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



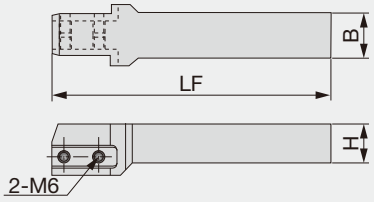
Right hand (R) shown.

Inch	H	B	LF	LH	HBH
CGWSR/L12	0.75	0.75	5.40	1.310	0.250
CGWSR/L16	1.00	1.00	5.40	-	-

Metric	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

CGWSRL

Shank of toolholders. Vertical type with offset

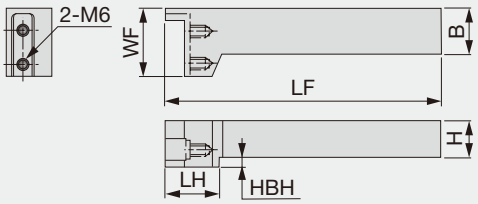


Inch	H	B	LF
CGWSRL12	0.75	0.75	5.40
CGWSRL16	1.00	1.00	5.40

Note: Right (R) or Left (L) hand cartridges can be used in this toolholder

CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders, for tangentially clamped adapter



Right hand (R) shown.

Inch	H	B	LF	LH	WF	HBH
CGWTR/L12	0.75	0.75	6.00	1.20	1.50	0.234
CGWTR/L16	1.00	1.00	6.00	-	1.50	-

Metric	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

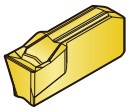
SPARE PARTS



Designation	Adapter screw
CGW...	CSHB-6

Face grooving

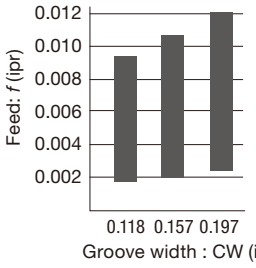
GF

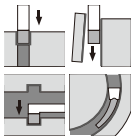


F243

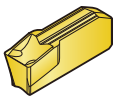
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 0.118" - 0.197"





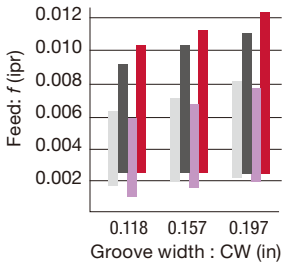
GE

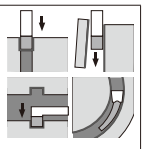


F242

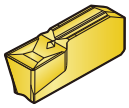
1st choice for external grooving and parting
Excellent chip control for grooving

CW = 0.118" - 0.197"





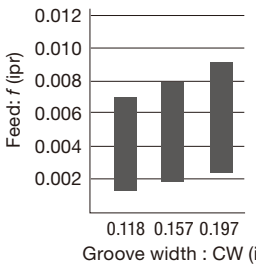
GN

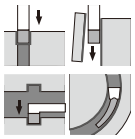


F244

1st choice for internal grooving
Low cutting force and good chip control for internal grooving

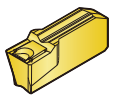
CW = 0.118" - 0.197"





External grooving and turning

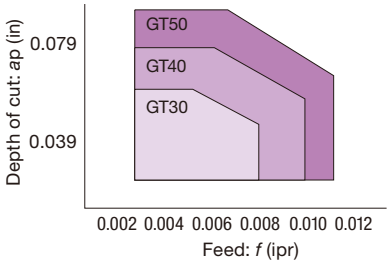
GT

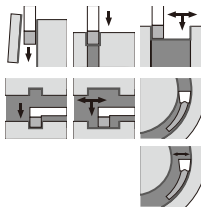


F242

1st choice for turning
Low cutting force and good chip control for traversing

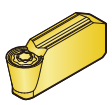
CW = 0.118" - 0.197"





For profiling

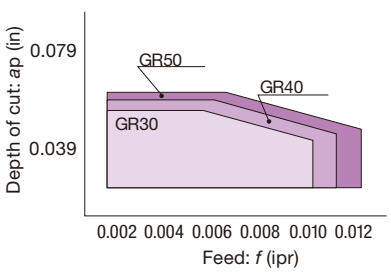
GR

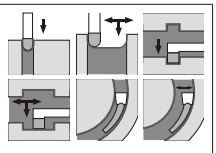


F243

Full radius type
Low cutting force and good chip control for profiling

CW = 0.118" - 0.197"

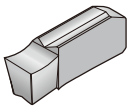




Please see page F*** for the product details.

For aluminum and non-ferrous metal

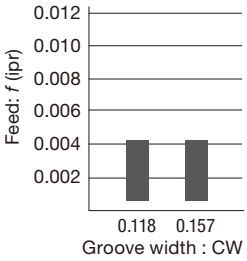
GE-AL

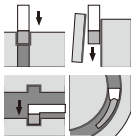


F244

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.118" - 0.157"



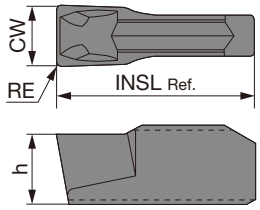


Please see page F*** for the product details.

INSERTS

GE

For external grooving and parting



P	Steel	★	★	★				★											
M	Stainless		★	★															
K	Cast iron		★	☆				☆											
N	Non-ferrous																		
S	Superalloys		☆																
H	Hard materials																		

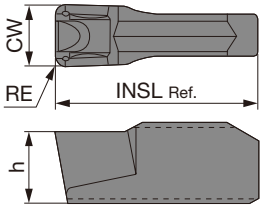
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GE30	3	0.118	0.008	●	●	●	●	0.394	0.138
GE40	4	0.157	0.008	●	●	●	●	0.394	0.157
GE50	5	0.197	0.008	●	●	●	●	0.472	0.177

● : Line up

GT

For external grooving and turning



P	Steel	★	★	★				★											
M	Stainless		★	★															
K	Cast iron		★	☆				☆											
N	Non-ferrous																		
S	Superalloys		☆																
H	Hard materials																		

★ : First choice
☆ : Second choice

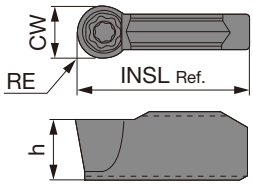
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GT30	3	0.118	0.016		●	●	●	0.394	0.138
GT40	4	0.157	0.016		●	●	●	0.394	0.157
GT50	5	0.197	0.016	●	●	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F238 - F240, Standard cutting conditions → F245

GR

For profiling (full radius)



P	Steel	★	★	★				★			
M	Stainless		★	★							
K	Cast iron		★	☆				☆			
N	Non-ferrous										
S	Superalloys		☆								
H	Hard materials										

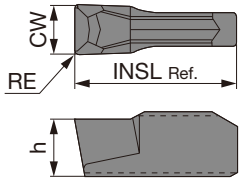
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated						Cermet						INSL (in)	h (in)
				T9225	AH120	GH730				NS9530							
GR30	3	0.118	0.059		●	●				●						0.394	0.138
GR40	4	0.157	0.079	●	●	●				●						0.394	0.157
GR50	5	0.197	0.098	●	●	●				●						0.472	0.177

● : Line up

GF

For face grooving



P	Steel	★			★						
M	Stainless	★									
K	Cast iron	☆			☆						
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

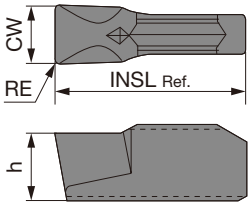
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet									INSL (in)	h (in)
				GH730			NS9530										
GF30	3	0.118	0.008	●			●									0.394	0.138
GF40	4	0.157	0.008	●			●									0.394	0.157
GF50	5	0.197	0.008	●			●									0.472	0.177

● : Line up

Reference pages: Toolholders → F238 - F240, Standard cutting conditions → F245

GN

For internal grooving



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

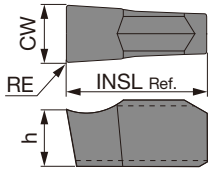
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-AL

For aluminum and non-ferrous metal



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

● : Line up

Reference pages: Toolholders → F238 - F240

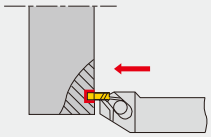
STANDARD CUTTING CONDITIONS

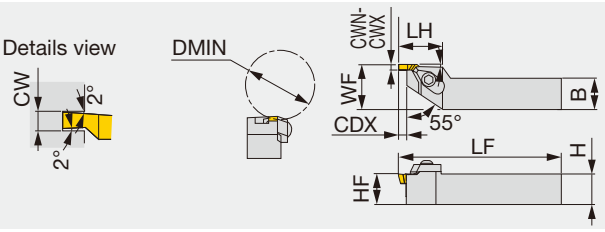
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 394
M	Stainless steel	GH730, AH120	164 - 394
K	Gray iron, Ductile cast iron	GH730, AH120	164 - 591
N	Aluminum alloy, Non-ferrous metal	KS05F	656 - 984

For face grooving

Operation	Feed: *f* (ipr) Groove width: CW		
	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Face grooving (GE**)	0.0024 - 0.009	0.0024 - 0.009	0.0028 - 0.010
Face grooving (GF**)	0.0016 - 0.010	0.0020 - 0.010	0.0020 - 0.012
Traversing (GT**)	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Traversing (GR**)	*ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.063 *f* = 0.002 - 0.012
Grooving for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, F129 page
When vibration occurs in turning, please use the lower limit value in the above table.





Right hand (R) shown.

Metric	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-2525R/LF	1	4.5	55	1.5 - 6	25	25	150	35	25	32	XNL/R63...	5

Use right-hand toolholders (GX-...RF) with left-hand inserts (XNL); and left-hand toolholders (GX-...LF) with right-hand inserts (XNR).
Torque: Recommended clamping torque: N·m

SPARE PARTS



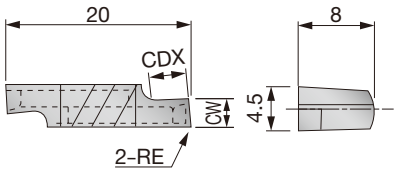




Designation	Clamp set	Clamping screw	Shim	Shim screw	Wrench
GX-2525RF	CP81A	RT-1	SL-3R	BHM4-8	P-4
GX-2525LF	CP81A	RT-1	SL-3L	BHM4-8	P-4

INSERT

XNR/L



Left hand (L) shown.
Unit: mm

		Cermet	Uncoated
P	Steel	★	★
M	Stainless		
K	Cast iron	☆	☆
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

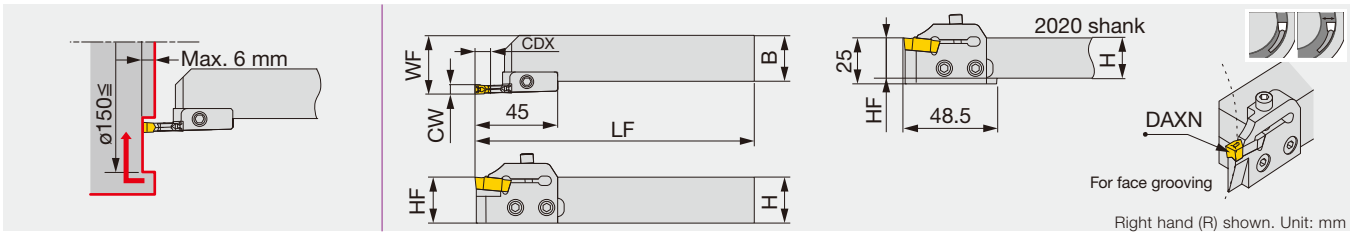
Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Cermet NS9530	Uncoated TH10	CDX (mm)
XNR6310-02	R	0.039	1	0.2	●	●	1.5
XNL6310-02	L	0.039	1	0.2	●	●	1.5
XNR6315-02	R	0.059	1.5	0.2	●	●	2.3
XNL6315-02	L	0.059	1.5	0.2	●	●	2.3
XNR6320-02	R	0.079	2	0.2	●	●	3
XNL6320-02	L	0.079	2	0.2	●	●	3
XNR6325-02	R	0.098	2.5	0.2	●	●	3.8
XNL6325-02	L	0.098	2.5	0.2	●	●	3.8
XNR6330-02	R	0.118	3	0.2	●	●	4.5
XNL6330-02	L	0.118	3	0.2	●	●	4.5
XNR6335-02	R	0.138	3.5	0.2	●	●	5.3
XNL6335-02	L	0.138	3.5	0.2	●	●	5.3
XNR6340-02	R	0.157	4	0.2	●	●	6
XNL6340-02	L	0.157	4	0.2	●	●	6
XNR6345-02	R	0.177	4.5	0.2	●	●	6
XNL6345-02	L	0.177	4.5	0.2	●	●	6

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steels	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons, Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010

MY-T SERIES
CGWSR/L-FLR/L5TP
Face grooving and turning toolholder



Right hand (R) shown. Unit: mm

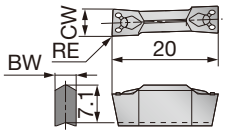
Metric	CW	DAXN	CDX	H	B	LF	HF	WF	Insert	Shank	Adapter	Torque
CGWSR/L2020-FLR/L5TP	5	150	6	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5TP	5
CGWSR/L2525-FLR/L5TP	5	150	6	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5TP	5

Toolholders are in stock with the designations of: a set of shank and adapter; a shank; a adapter. Combining the designations of a adapter and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a adapter.
Note: Use right-hand shanks (CGWSR...) with right-hand adapters (FLR5TP); and left-hand shanks (CGWSL...) with left-hand adapters (FLL5TP).
Torque: Recommended clamping torque: N·m

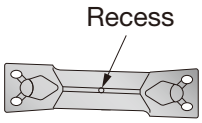
SPARE PARTS

Designation	Clamping screw	Adapter screw	Wrench
CGWSR/L****-FLR/L5TP	CHHM5-18	CSHB-6	P-4

INSERT
FLEX(R/L)



Right hand (R) shown.
Unit: mm



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated	Cermet	Uncoated
P	Steel	★	★	★
M	Stainless	★		★
K	Cast iron	☆	☆	
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	T9225	NS9530	UX30	BW (mm)
FLEX30R	R	0.118	3	0.4		●		2.2
FLEX30L	L	0.118	3	0.4		●		2.2
FLEX40R	R	0.157	4	0.4		●		3.1
FLEX40L	L	0.157	4	0.4		●		3.1
FLEX50R	R	0.197	5	0.4	●	●	●	4
FLEX50L	L	0.197	5	0.4	●	●	●	4

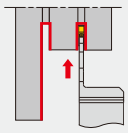
● : Line up

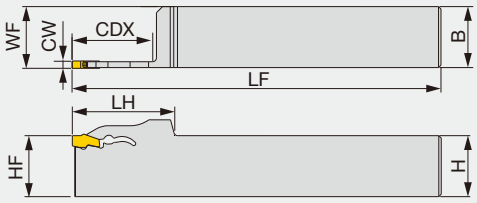
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

QSER/L

External toolholders for grooving and parting







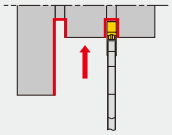
Right hand (R) shown.

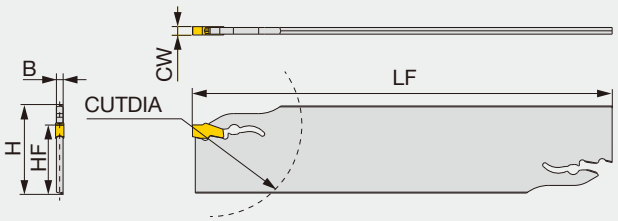
Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	0.118	1.024	3	0.750	0.750	5.000	1.417	0.750	0.764
QSER/L12-3T33	0.118	1.299	3	0.750	0.750	5.000	1.654	0.750	0.764
QSER/L16-3T26	0.118	1.024	3	1.000	1.000	6.000	1.417	1.000	1.012
QSER/L16-3T33	0.118	1.299	3	1.000	1.000	6.000	1.654	1.000	1.012
QSER/L12-4T33	0.157	1.299	4	0.750	0.750	5.000	1.654	0.750	0.768
QSER/L16-4T33	0.157	1.299	4	1.000	1.000	6.000	1.654	1.000	1.016
QSER/L16-5T33	0.197	1.299	5	1.000	1.000	6.000	1.654	1.000	1.020
QSER/L16-6T36	0.236	1.417	6	1.000	1.000	6.000	1.890	1.000	1.016

Metric	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L2020-2T26	2	26	2	20	20	125	36	20	20.1
QSER/L2020-2T33	2	33	2	20	20	125	42	20	20.1
QSER/L2525-2T26	2	26	2	25	25	150	36	25	25.1
QSER/L2525-2T33	2	33	2	25	25	150	42	25	25.1
QSER/L2020-3T26	3	26	3	20	20	125	36	20	20.3
QSER/L2020-3T33	3	33	3	20	20	125	42	20	20.3
QSER/L2525-3T26	3	26	3	25	25	150	36	25	25.3
QSER/L2525-3T33	3	33	3	25	25	150	42	25	25.3
QSER/L2020-4T33	4	33	4	20	20	125	42	20	20.4
QSER/L2525-4T33	4	33	4	25	25	150	42	25	25.4
QSER/L2525-5T33	5	33	5	25	25	150	42	25	25.5

QSP

Blades for external deep grooving and parting







Metric	CW	CUTDIA	Seat size	H	B	LF	HF
QSP26-2D	2	52	2	26	1.8	150	21.4
QSP32-2D	2	66	2	32	1.8	150	24.8
QSP26-3D	3	75	3	26	2.4	150	21.4
QSP32-3D	3	120	3	32	2.4	150	24.8
QSP26-4D	4	80	4	26	3.2	150	21.4
QSP32-4D	4	120	4	32	3.2	150	24.9
QSP32-5D	5	120	5	32	4	150	24.9

SPARE PARTS

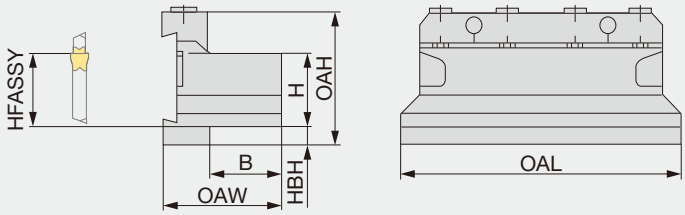


Designation	Wrench
QS...	QL-39

Reference pages: Inserts → F252, F253, Standard cutting conditions → F253

CTBU

Tool block for QSP blades



Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.750	0.354	1.693	1.496	QSP26...
CTBU16-26-U	1.000	0.906	4.331	1.000	0.197	1.772	1.654	QSP26...
CTBU12-32-U	0.750	0.748	3.937	0.750	0.512	1.969	1.496	QSP32...
CTBU16-32-U	1.000	0.906	4.331	1.000	0.315	1.969	1.654	QSP32...
CTBU20-32-U	1.250	1.142	4.331	1.250	0.197	2.126	1.890	QSP32...

Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	20	9	43	38	QSP26...
CTBU25-26	25	23	110	25	5	45	43	QSP26...
CTBU20-32	20	19	100	20	13	50	38	QSP32...
CTBU25-32	25	23	110	25	8	50	42	QSP32...
CTBU32-32	32	29	110	32	5	54	48	QSP32...

INCH SPARE PARTS

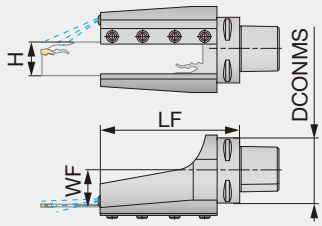
Designation	Clamp	Clamping screw	Wrench
CTBU12-26-U	CT-86	CM6X30-S	P-5
CTBU16-26-U	CT-100	CM6X30-S	P-5
CTBU12-32-U	CT-105	CM6X30-S	P-5
CTBU16-32-U	CT-110	CM6X30-S	P-5
CTBU20-32-U	CT-110	CM6X30-S	P-5

METRIC SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU20-26	CT-86	CM6X30-S	P-5
CTBU25-26	CT-105	CM6X30-S	P-5
CTBU20-32	CT-100	CM6X30-S	P-5
CTBU25-32	CT-110	CM6X30-S	P-5
CTBU32-32	CT-110	CM6X30-S	P-5

C-TBK-R/L

Toolholder with TungCap connection for parting-off blade



Right hand (R) shown.

Metric	DCONMS	WF	LF	H
C6TBK-32R/L	63	32	138	32

Applicable for 3 MPa coolant

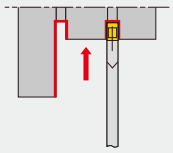
SPARE PARTS

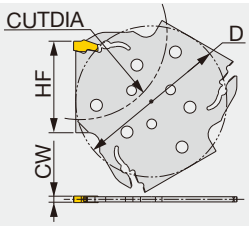
Designation	Clamp	Clamping screw	Wrench	Coolant parts
C6TBK-32R/L	BK32-9WEDG	SRM6X16DIN912-12.9	HW5.0	EZ125

Reference pages: Inserts → F252, F253, Standard cutting conditions → F253

QSG

Parting-off and external grooving blade







Metric	CW	Seat size	CUTDIA	HF	D
QSG52-2T	2	2	52	27	48.3
QSG82-2T	2	2	82	42	69.3
QSG52-3T	3	3	52	27	48.3
QSG82-3T	3	3	82	42	69.3
QSG120-3T	3	3	120	61	88
QSG52-4T	4	4	52	27	69.3
QSG82-4T	4	4	82	42	69.3
QSG120-4T	4	4	120	61	88
QSG120-5T	5	5	120	61	88

SPARE PARTS

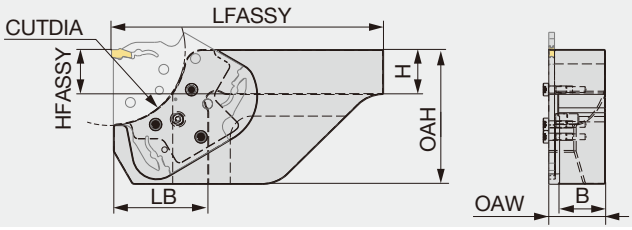


Designation	Wrench
QSG...	QL-39

Reference pages: Inserts → F252, F253, Standard cutting conditions → F253

CHTBR/L

Tool block for QSG blade



Right hand (R) shown.

Inch	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB
CHTBR/L12-52	2.047	0.750	0.770	4.000	0.750	1.968	1.000	1.457
CHTBR/L16-52	2.047	1.000	1.020	5.000	1.000	1.968	1.250	1.457
CHTBR/L12-82	3.228	0.750	0.770	5.500	0.750	2.953	1.000	2.087
CHTBR/L16-82	3.228	1.000	1.020	6.000	1.000	2.953	1.250	2.087
CHTBR/L16-120	4.724	1.000	1.020	6.500	1.000	3.937	1.250	2.638
CHTBR/L20-120	4.724	1.250	1.270	6.500	1.250	3.937	1.500	2.638

Metric	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB
CHTBR/L2020-52	52	20	20.5	100	20	50	26.5	37
CHTBR/L2525-52	52	25	25.5	125	25	50	31.5	37
CHTBR/L2020-82	82	20	20.5	140	20	75	26.5	53
CHTBR/L2525-82	82	25	25.5	150	25	75	31.5	53
CHTBR/L2525-120	120	25	25.5	165	25	100	31.5	67
CHTBR/L3232-120	120	32	32.5	165	32	100	38.5	67

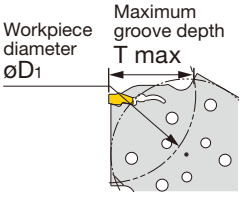
The blade clamping screw heads protrude out for as much as 0.122" (3.1 mm) over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

SPARE PARTS





Designation	Clamping screw	Grip	Torx bit
CHTBR/L...	SR ISO 14580 M4X10	SW6-SD	BLDT20/S7



Maximum groove depth (T max) as function of workpiece diameter (øD1)

Designation	øD1 (in)																	
CHTBR/L**-52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L**-82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
CHTBR/L**-120	8.071	8.425	8.819	9.252	9.724	10.276	10.945	11.693	12.559	13.583	14.803	16.299	18.189	20.551	23.661	27.913	34.055	43.780
T max (in)	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157

Designation	øD1 (in)												
CHTBR/L**-82	3.268	3.307	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976
CHTBR/L**-120	5.669	5.787	5.906	6.024	6.142	6.299	6.457	6.614	6.811	7.008	7.244	7.480	7.756
T max (in)	1.339	1.299	1.260	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866

Designation	øD1 (in)																
CHTBR/L**-120	4.764	4.803	4.843	4.882	4.921	4.961	5.000	5.039	5.079	5.118	5.157	5.236	5.276	5.354	5.433	5.512	5.591
T max (in)	2.165	2.047	1.969	1.890	1.850	1.811	1.772	1.732	1.693	1.654	1.614	1.575	1.535	1.496	1.457	1.417	1.378

Reference pages: Inserts → F252, F253, Standard cutting conditions → F253

CHIPBREAKER GUIDE

QGM



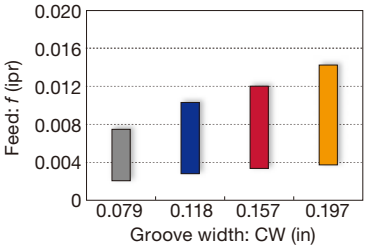
First choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
CW = 0.079" - 0.197"

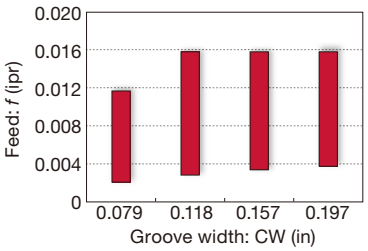
TUNGFEED BLADE

Enables high feed machining when combined with extremely rigid TungFeed-Blade toolholder
CW = 0.079" - 0.197"
CUTDIA = ø2.047", ø3.228", ø4.724"

■ Standard feed



■ Recommended feed when using TungFeed-Blade



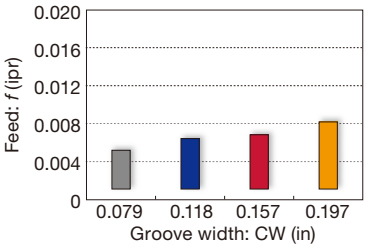
QGS



Lower cutting force and superior sharpness

Uniquely designed edge and chipbreaker
CW = 0.079" - 0.197"

■ Standard feed

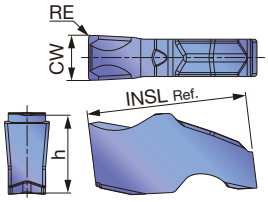


INSERTS

QGM

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGM2-020	2	2	0.079	0.008	●	0.433	0.209
QGM3-020	3	3	0.118	0.008	●	0.433	0.209
QGM4-030	4	4	0.157	0.012	●	0.512	0.287
QGM5-030	5	5	0.197	0.012	●	0.512	0.287

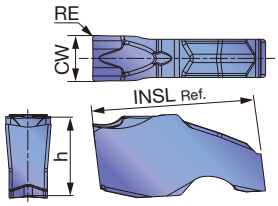
●: Line up

Reference pages: Toolholders → F248 - F251

QGS

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGS2-020	2	2	0.079	0.008	●	0.433	0.209
QGS3-020	3	3	0.118	0.008	●	0.433	0.209
QGS4-030	4	4	0.157	0.012	●	0.512	0.287
QGS5-030	5	5	0.197	0.012	●	0.512	0.287

●: Line up

STANDARD CUTTING CONDITIONS

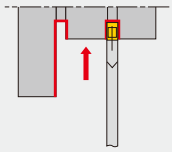
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast iron 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

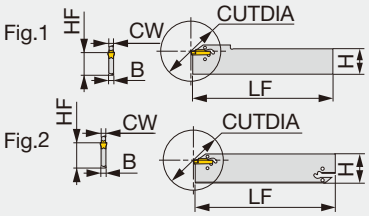
Please see page F252 for feed: *f* (ipr).

Reference pages: Toolholders → F248 - F251

CGP

External deep grooving and parting blade





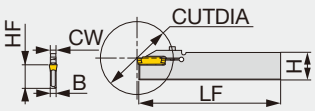
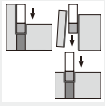


Fig.3



Metric	CW	Seat size	CUTDIA	H	B	LF	HF	Fig.	Torque
CGP26-1.4S	1.4	1	26	26	1	150	21.4	1	-
CGP32-1.4D	1.4	1	26	32	1	150	24.8	2	-
CGP26-2S	2	2	40	26	1.8	150	21.4	1	-
CGP32-2D	2	2	50	32	1.8	150	24.8	2	-
CGP26-3S	3	3	50	26	2.4	150	21.4	1	-
CGP32-3D	3	3	100	32	2.4	150	24.8	2	-
CGP26-4S	4	4	80	26	3.2	150	21.4	1	-
CGP32-4D	4	4	100	32	3.2	150	24.9	2	-
CGP45-4D	4	4	120	45	3.2	150	38.1	2	-
CGP32-5D	5	5	120	32	4	150	24.9	2	-
CGP32-6D	6	6	120	32	5.2	150	24.9	2	-
CGP32-8S-CL	8	8	80	32	6.2	150	24.9	3	3

When depth is deeper than (insert length - 1.5mm), 1 corner type is recommended.
Wrench (CRW...) is not included. Please order it separately.
Torque: Recommended clamping torque: N·m

SPARE PARTS



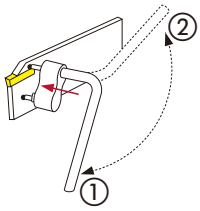


Designation	Clamping screw	Wrench	Wrench (Optional)
CGP**-1.4*	-	-	CRW23
CGP**-2/3/4/5/6	-	-	CRW33
CGP32-8S-CL	CM4X0.7X20-M0-A	P-3	-

Caution

Newly developed clamp

Insert is clamped by the elastic deformation of upper jaw.
Low clamping stress increases the stability and tool life.

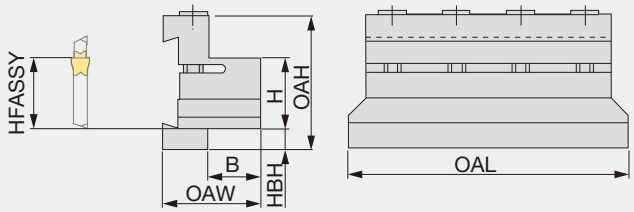




①→②: unclamp
②→①: clamp

CTBF

Tool block for CGP blade, mono block



Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBF25-45	25	22	110	25	25	66	40	CGP45...
CTBF32-45	32	28	120	32	18	66	45	CGP45...

SPARE PARTS

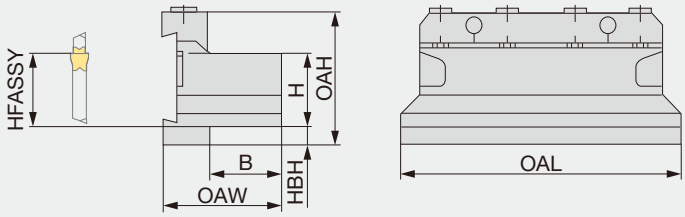



Designation	Clamping screw	Wrench
CTBF...	CM6X1.0X40-A	P-5

Reference pages: Inserts → F261 - F270, Tool blocks → F254, F255, Standard cutting conditions → F271

CTBU

Tool block for CGP blade



Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.750	0.354	1.693	1.496	CGP26...
CTBU16-26-U	1.000	0.906	4.331	1.000	0.197	1.772	1.654	CGP26...
CTBU12-32-U	0.750	0.748	3.937	0.750	0.512	1.969	1.496	CGP32...
CTBU16-32-U	1.000	0.906	4.331	1.000	0.315	1.969	1.654	CGP32...
CTBU20-32-U	1.250	1.142	4.331	1.250	0.197	2.126	1.890	CGP32...

Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	20	9	43	38	CGP26...
CTBU25-26	25	23	110	25	5	45	43	CGP26...
CTBU20-32	20	19	100	20	13	50	38	CGP32...
CTBU25-32	25	23	110	25	8	50	42	CGP32...
CTBU32-32	32	29	110	32	5	54	48	CGP32...

INCH SPARE PARTS

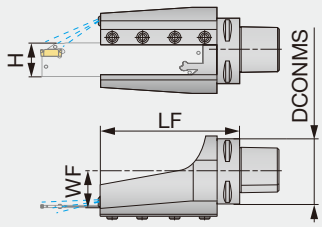
Designation	Clamp	Clamping screw	Wrench
CTBU12-26-U	CT-86	CM6X30-S	P-5
CTBU16-26-U	CT-100	CM6X30-S	P-5
CTBU12-32-U	CT-105	CM6X30-S	P-5
CTBU16-32-U	CT-110	CM6X30-S	P-5
CTBU20-32-U	CT-110	CM6X30-S	P-5

METRIC SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU20-26	CT-86	CM6X30-S	P-5
CTBU25-26	CT-105	CM6X30-S	P-5
CTBU20-32	CT-100	CM6X30-S	P-5
CTBU25-32	CT-110	CM6X30-S	P-5
CTBU32-32	CT-110	CM6X30-S	P-5

C-TBK-R/L

Toolholder with TungCap connection for parting-off blade



Right hand (R) shown.

Metric	DCONMS	WF	LF	H
C6TBK-32R/L	63	32	138	32

Applicable for 3 MPa coolant

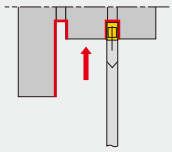
SPARE PARTS

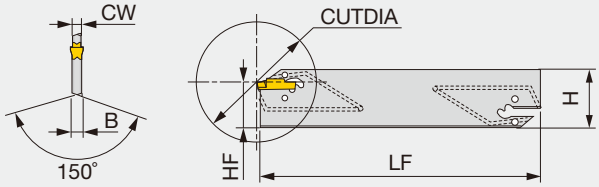
Designation	Clamp	Clamping screw	Wrench	Coolant parts
C6TBK-32R/L	BK32-9WEDG	SRM6X16DIN912-12.9	HW5.0	EZ125

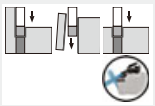
Reference pages: Inserts → F261 - F270, Blades → F254, Standard cutting conditions → F271

CGP32-CHP

External deep grooving and parting blade, with high pressure coolant capability







Metric	CW	Seat size	CUTDIA	H	B	LF	HF
CGP32-2D-CHP	2	2	50	32	1.8	150	24.8
CGP32-3D-CHP	3	3	90	32	2.5	150	24.8
CGP32-4D-CHP	4	4	90	32	3.2	150	24.9
CGP32-5D-CHP	5	5	110	32	4	150	24.9
CGP32-6D-CHP	6	6	110	32	5.2	150	24.9

When depth is deeper than (insert length - 1.5mm), 1 corner type is recommended.
Wrench (CRW...) is not included. Please order it separately.

SPARE PARTS



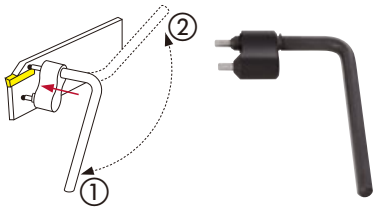


Designation	Sealing screw	Wrench (Optional)
CGP32-*D-CHP	SGC340	CRW33

Caution

Newly developed clamp

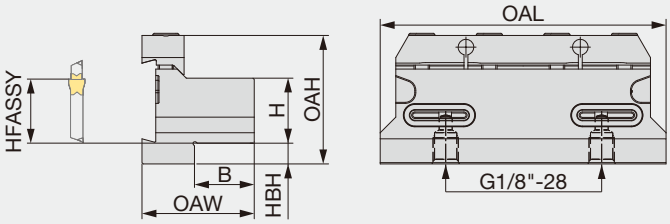
Insert is clamped by the elastic deformation of upper jaw.
Low clamping stress increases the stability and tool life.



①→②: unclamp
②→①: clamp

CTBU-CHP

Tool block for CGP-CHP blade, with high pressure coolant capability





Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU16-32-U-CHP	1.000	0.906	4.331	1.000	0.315	1.97	1.654	CGP32-*D-CHP

Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU25-32-CHP	25	23	110	25	8	50	43.2	CGP32-*D-CHP

Applicable for 14 MPa coolant

SPARE PARTS







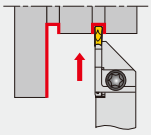


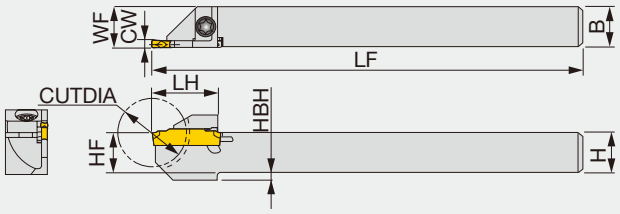
Designation	Clamping screw	Clamp	Wrench	O-ring
CTBU...	SRM6X16DIN912-12.9	CT-110	P-5	OR14X2.5NN

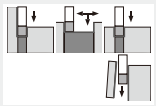
Reference pages: Inserts → F261 - F270, Standard cutting conditions → F271
Parts for coolant hose → F290

JCTER/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

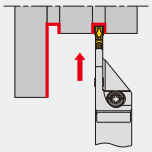
Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque
JCTER/L08-2T12	0.079	2	0.945	0.500	0.500	4.750	0.748	0.500	0.504	0.079	2.21
JCTER/L08-3T12	0.118	3	0.945	0.500	0.500	4.750	0.748	0.500	0.512	0.079	2.21
JCTER/L10-2T16	0.079	2	1.260	0.625	0.625	4.750	0.945	0.625	0.629	-	2.21
JCTER/L10-3T16	0.118	3	1.260	0.625	0.625	4.750	0.945	0.625	0.637	-	2.21

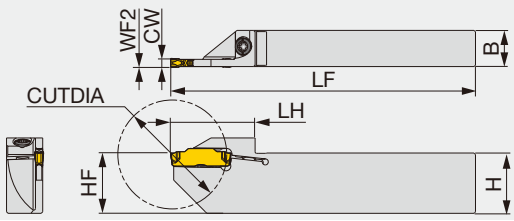
Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

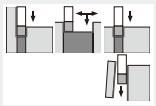
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

JCTER/L2012

External grooving and parting toolholder, for Swiss lathes, with 20 mm shank height







Right hand (R) shown.

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	Torque
JCTER/L2012H2T18	2	2	36	20	12	100	25	20	0.1	3
JCTER/L2012H3T21	3	3	42	20	12	100	28	20	0.3	3

(1) "WF2" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: N·m

SPARE PARTS





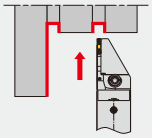
Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

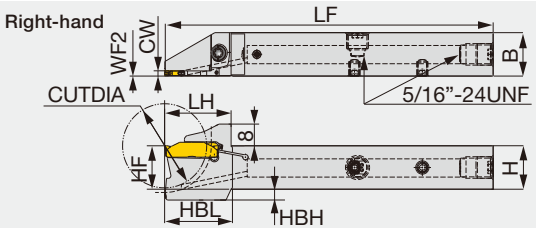
Reference pages: Inserts → F261 - F270, Standard cutting conditions → F271

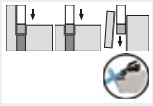
JCTER/L-CHP

Direct connection

External grooving and parting toolholder, with high pressure coolant capability







Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque
JCTER/L08X2T12-CHP	0.079	2	0.980	0.500	0.500	4.750	0.972	0.500	0 / 0.500	0.169	0.965	2.21
JCTER/L10X2T12-CHP	0.079	2	0.980	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.039	0.965	2.21
JCTER/L10X2T16-CHP	0.079	2	1.260	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.157	0.965	2.21
JCTER/L12X2T16-CHP	0.079	2	1.260	0.750	0.750	4.750	0.972	0.750	0 / 0.750	0.037	0.965	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS



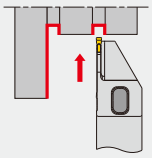


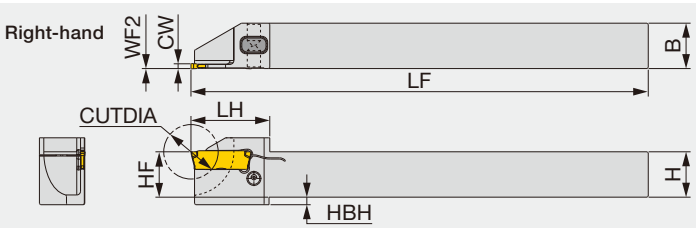



Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

JTTER/L

External grooving and parting toolholder, for Swiss lathes







Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque
JTTER/L1010H1.2D12	1.2	0.9	12	10	10	100	17	10	0/10	-	1.5
JTTER/L1212F1.2D16	1.2	0.9	16	12	12	85	19	12	0/12	-	1.5
JTTER/L1212X1.2D16	1.2	0.9	16	12	12	120	19	12	0/12	-	1.5
JTTER/L1212X1.2D20	1.2	0.9	20	12	12	120	21	12	0/12	2	1.5
JTTER/L1616X1.2D20	1.2	0.9	20	16	16	120	21	16	0/16	-	2

(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: N·m

SPARE PARTS





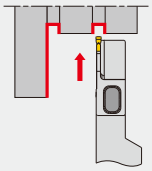
Designation	Clamping screw	Clamping pin	Wrench
JTTER/L1010...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1212...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1616...	SRM5-24145-RL	PIN-32121	P-2.5F

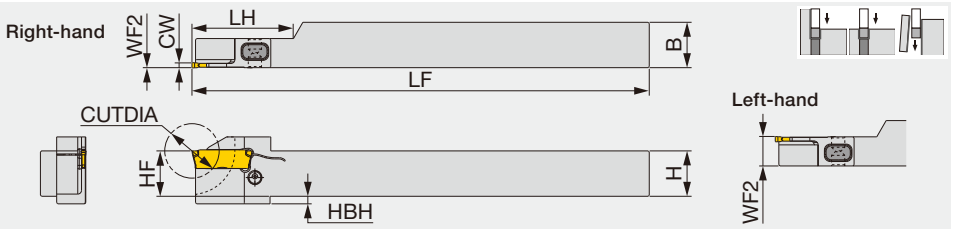
External
Internal
Face
Parting
Others

Reference pages: Inserts → F261 - F270, Standard cutting conditions → F271
Parts for coolant hose → F290

JTTER/L-S

External grooving and parting toolholder, for Swiss lathes (for sub spindle)





Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque
JTTER/L1010H1.2D12-S	1.2	0.9	12	10	10	100	22.8	10	0/7.7	-	1.5
JTTER1212F1.2D16-S (2)	1.2	0.9	16	12	12	85	22.8	12	0	-	1.5
JTTER/L1212X1.2D16-S	1.2	0.9	16	12	12	120	26.8	12	0/7.7	-	1.5
JTTER/L1212X1.2D20-S	1.2	0.9	20	12	12	120	26.8	12	0/7.7	2	1.5
JTTER/L1616X1.2D20-S	1.2	0.9	20	16	16	120	26.8	16	0/7.7	-	1.5

(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(2) No clamping screw from the insert side.
Torque: Recommended clamping torque: N·m

SPARE PARTS

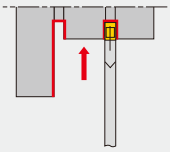


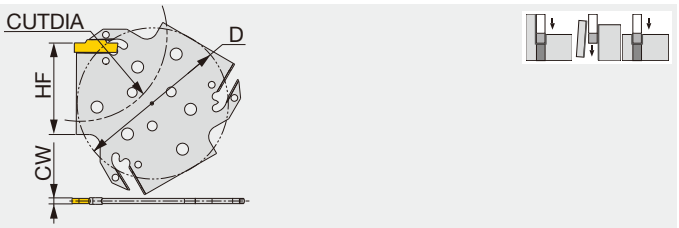


Designation	Clamping screw	Clamping pin	Wrench
JTTER/L**-S	SSM3.5x0.35	PIN-SL-TC	P-2F

CHGP

Parting-off and external grooving blade





Metric	CW	Seat size	CUTDIA	HF	D
CHGP52-2T	2	2	52	27	48.3
CHGP52-3T	3	3	52	27	48.3
CHGP82-3T	3	3	82	42	69.3
CHGP82-4T	4	4	82	42	69.3

When depth is deeper than insert length - 1.5mm, 1 corner type is recommended.

SPARE PARTS

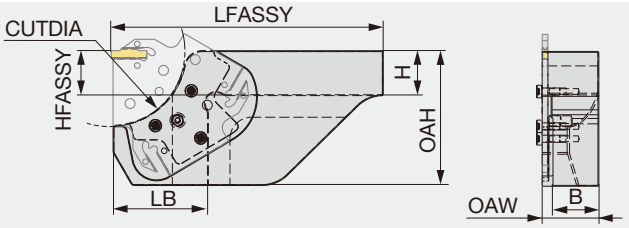


Designation	Wrench (Option)
CHGP...	CRW33

Reference pages: Inserts → F261 - F270, Tool blocks → F260, Standard cutting conditions → F271

CHTBR/L

Tool block for CHGP blade



Right hand (R) shown.

Inch	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB
CHTBR/L12-52	2.047	0.750	0.770	4.000	0.750	1.968	1.000	1.457
CHTBR/L16-52	2.047	1.000	1.020	5.000	1.000	1.968	1.250	1.457
CHTBR/L12-82	3.228	0.750	0.770	5.500	0.750	2.953	1.000	2.087
CHTBR/L16-82	3.228	1.000	1.020	6.000	1.000	2.953	1.250	2.087

Metric	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB
CHTBR/L2020-52	52	20	20.5	100	20	50	26.5	37
CHTBR/L2525-52	52	25	25.5	125	25	50	31.5	37
CHTBR/L2020-82	82	20	20.5	140	20	75	26.5	53
CHTBR/L2525-82	82	25	25.5	150	25	75	31.5	53

The blade clamping screw heads protrude out for as much as 0.122" (3.1 mm) over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

SPARE PARTS



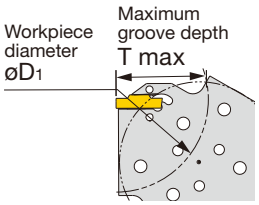


Designation	Clamping screw	Grip	Torx bit
CHTBR/L...	SR ISO 14580 M4X10	SW6-SD	BLDT20/S7

Maximum groove depth (T max) as function of workpiece diameter (øD1)

Designation	øD1 (in)																	
CHTBR/L**-52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L**-82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
T max (in)	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157

Designation	øD1 (in)											
CHTBR/L**-82	3.268	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976
T max (in)	1.339	1.299	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866

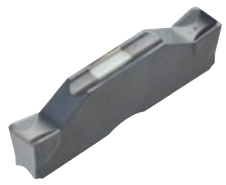


External
Internal
Face
Parting
Others

Reference pages: Inserts → F261 - F270, Blades → F259, Standard cutting conditions → F271

External grooving and parting

DGM type (2 corners) SGM type (1 corner)



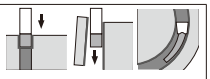
F264, F265

1st choice for grooving and parting

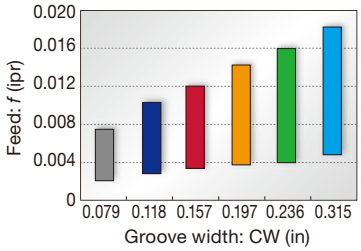
Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"

TungFeed-Blade

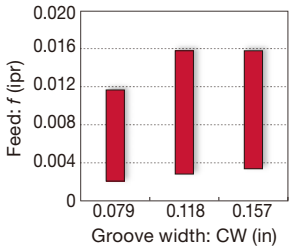
Enables high feed machining when combined with extremely rigid TungFeed-Blade toolholder
CW = 0.079" - 0.157"
CUTDIA = ø2.047", ø3.228"



■ Standard feed



■ Recommended feed when using TungFeed-Blade



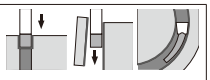
DGS type (2 corners) SGS type (1 corner)



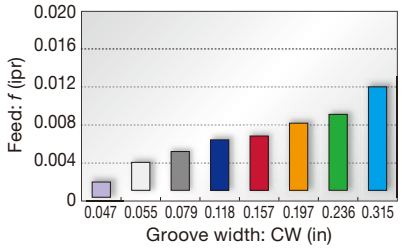
F266, F267

Lower cutting force and superior sharpness

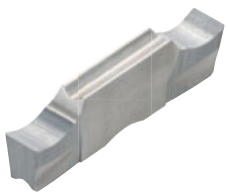
Unique-designed edge and chipbreaker
Handed insert available
CW = 0.047" - 0.315"



■ Standard feed



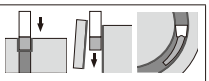
DGG type (2 corners)



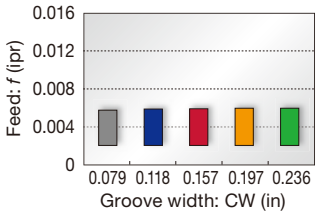
F268

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"



■ Standard feed



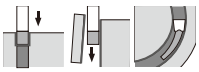
DGL type (2 corners)



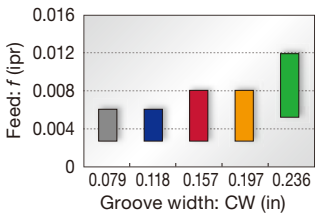
F268

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel which often presents challenges in chip control
CW = 0.079" - 0.236"



■ Standard feed



Please see page F*** for the product details.

External grooving and parting

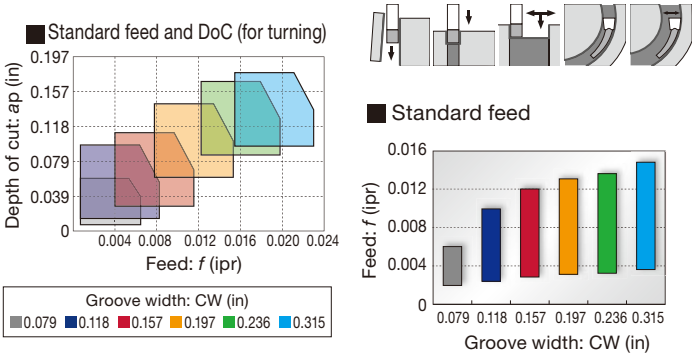
DTM type (2 corners)



F269

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.079" - 0.315"



External grooving, turning and parting

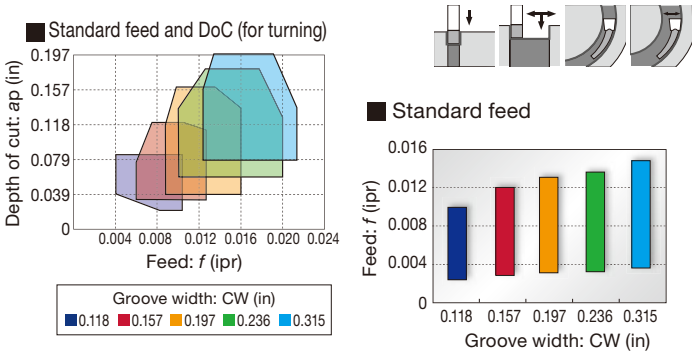
DTE type (2 corners)



F269, F270

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.104" - 0.315"



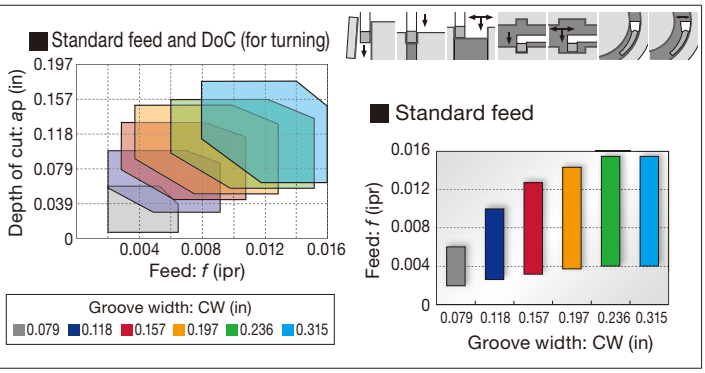
DTX type (2 corners)



F270

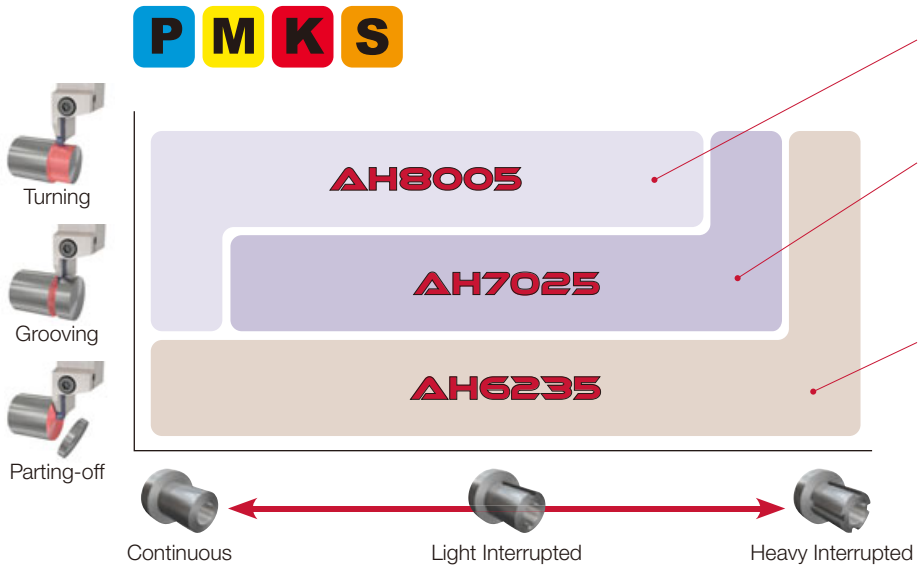
Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.079" - 0.315"



Please see page F*** for the product details.

GRADE SELECTION



GRADES

AH8005 P M K S
- First choice for external, internal, and side-turning, continuous cuts

AH7025 P M K S
- First choice for light interrupted cuts or a mix of continuous and interrupted cuts
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH6235 P M K
- First choice for heavy interrupted cuts, as well as parting and facing applications

AH725 P M S
- General purpose PVD grade for high fracture resistance

T515 K
- First recommended grade for cast iron
- Excellent wear resistance in high speed machining

T9225 P
- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P
- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K
- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S
- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S
- Recommended for non-ferrous materials and titanium

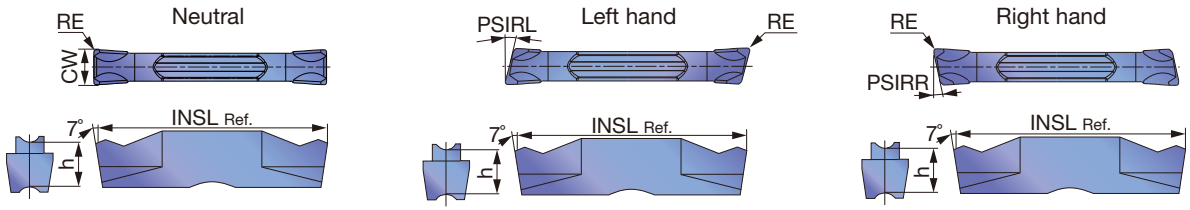
TH10 N
- Recommended for non-ferrous materials

BXA10 H
- Coated CBN grade designed for turning hardened steel parts

BX360 H
- Developed for grooving applications of hardened steel parts

DGM

External grooving and parting



		T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530	KS05F
P	Steel	★	★	☆	★		☆	★	★	
M	Stainless		★	☆	★		★	★		
K	Cast iron		★		★	☆	☆	★	☆	☆
N	Non-ferrous									☆
S	Superalloys		★	☆	★	★				★
H	Hard materials									

★ : First choice
☆ : Second choice

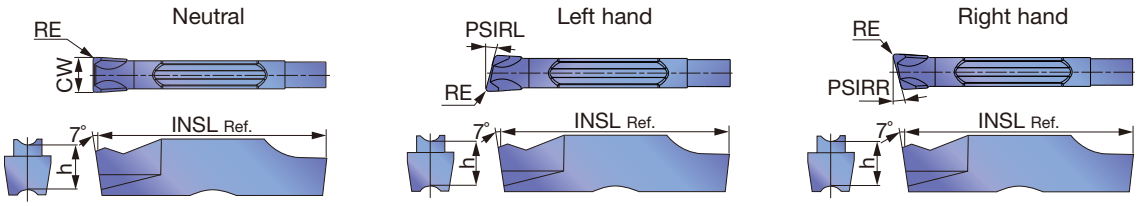
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet		Un-coated		INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530		KS05F					
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●	●	●		●		0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008		●	●			●						0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008		●	●			●						0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008			●			●						0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008			●			●						0.762	0.197	15°	0°
DGM2.39-020	2	N	2.39	0.094	0.008		●		●			●					0.787	0.197	0°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●		●		0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008		●	●			●						0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008		●	●			●						0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.008			●			●						0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.008			●			●						0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008		●	●			●						0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008		●	●			●						0.787	0.197	15°	0°
DGM3.18-020	3	N	3.18	0.125	0.008		●		●			●					0.787	0.197	0°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●		●		0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012		●	●			●						0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012		●	●			●						0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012		●	●			●						0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012		●	●			●						0.787	0.197	15°	0°
DGM4.76-040	5	N	4.76	0.187	0.016		●		●			●					0.984	0.217	0°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●		●		0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012		●	●			●						0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	●			●		0.984	0.217	0°	0°
DGM6.35-040	6	N	6.35	0.250	0.016		●		●			●					0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	●	●	●		●	●			●		1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

SGM

External deep grooving and parting



P	Steel	★	☆	★	☆	★							
M	Stainless	★	☆	★	★	★							
K	Cast iron	★		★	☆	★		☆					
N	Non-ferrous							☆					
S	Superalloys	★	☆	★				★					
H	Hard materials												

★ : First choice
☆ : Second choice

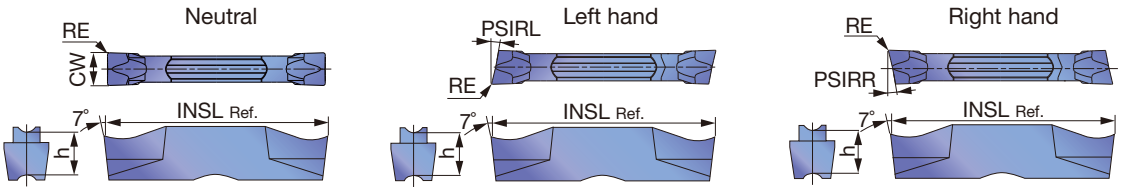
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGM2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●		●							0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●		●							0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGM8-040	8	N	8	0.315	0.016	●		●		●	●					1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

DGS

External grooving and parting



		Coated						Cermet			Uncoated						
P	Steel	★	★	☆	★	☆	★		★								
M	Stainless		★	☆	★	★	★										
K	Cast iron		★		★	☆	★		☆			☆					
N	Non-ferrous											☆					
S	Superalloys		★	☆	★							★					
H	Hard materials																

★ : First choice
☆ : Second choice

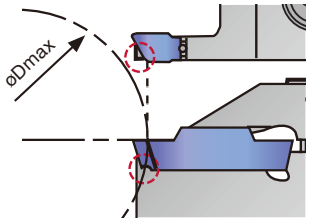
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530	KS05F	INSL (in)	h (in)	PSIRL	PSIRR
DGS1.2-003	0.9	N	1.2	0.047	0.0012			●						0.630	0.185	0°	0°
DGS1.4-005	1	N	1.4	0.055	0.002			●						0.630	0.169	0°	0°
DGS1.4-010	1	N	1.4	0.055	0.004			●						0.630	0.169	0°	0°
DGS1.4-016	1	N	1.4	0.055	0.006		●	●		●				0.630	0.169	0°	0°
DGS2-005	2	N	2	0.079	0.002			●						0.787	0.197	0°	0°
DGS2-010	2	N	2	0.079	0.004			●						0.787	0.197	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008		●	●		●				0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008		●	●		●				0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008			●		●				0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008			●		●				0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008		●	●		●				0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008		●	●		●				0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008			●		●				0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008			●		●				0.768	0.197	15°	0°
DGS2.39-020	2	N	2.39	0.094	0.008		●		●		●			0.787	0.197	0°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008		●	●		●				0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008		●	●		●				0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008			●		●				0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008			●		●				0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008		●	●		●				0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008		●	●		●				0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008			●		●				0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008			●		●				0.766	0.197	15°	0°
DGS3.18-020	3	N	3.18	0.125	0.008		●		●		●			0.787	0.197	0°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012		●	●		●				0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012		●	●		●				0.787	0.197	4°	0°
DGS4.76-040	5	N	4.76	0.187	0.016		●		●		●			0.984	0.217	0°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●	0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●		●	0.984	0.217	0°	0°
DGS6.35-040	6	N	6.35	0.250	0.016		●		●		●			0.984	0.217	0°	0°
DGS8-040	8	N	8	0.315	0.016		●		●		●		●	1.181	0.264	0°	0°

● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameters than øDmax.

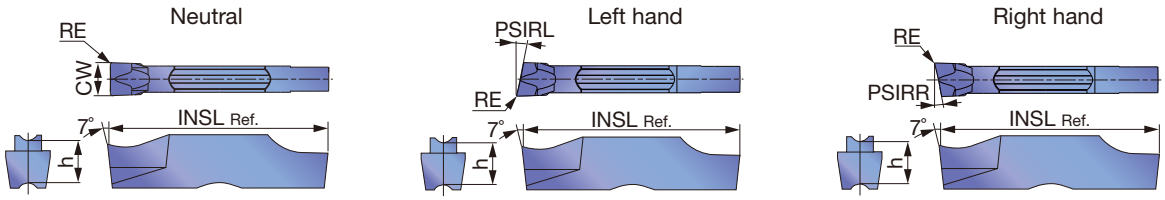
Designation	øDmax (in)	Designation	øDmax (in)
DGM2-002-15R/L	1.102	DGS2-002-15R/L	1.102
DGM3-002-15R/L	1.141	DGS3-002-15R/L	1.141
DGM4-030-15R/L	1.181	SGS3-020-15R/L	4.055
SGM3-020-15R/L	4.055	SGS3-002-15R/L	1.338



Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

SGS

External deep grooving and parting



P	Steel	★	☆	★	☆	★						
M	Stainless	★	☆	★	★	★						
K	Cast iron	★		★	☆	★		☆				
N	Non-ferrous							☆				
S	Superalloys	★	☆	★				★				
H	Hard materials											

★ : First choice
☆ : Second choice

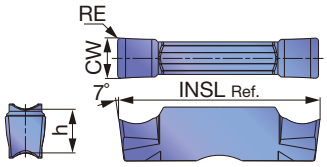
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated				INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F							
SGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●				0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●		●						0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●		●						0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●		●						0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●		●						0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●				0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●		●						0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●		●						0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●		●						0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●		●						0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●		●						0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●		●						0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●		●						0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●		●						0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●				0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●				0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●				0.984	0.217	0°	0°
SGS8-040	8	N	8	0.315	0.016	●		●		●					1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

DGG

External grooving and parting (for high precision)



P	Steel	★			★								
M	Stainless	★											
K	Cast iron	★			☆			☆					
N	Non-ferrous							★					
S	Superalloys	★						☆					
H	Hard materials												

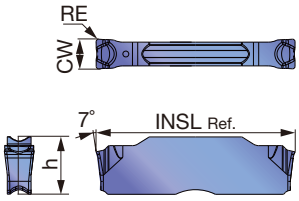
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated			Cermet			Uncoated					INSL (in)	h (in)
					AH7025			NS9530			KS05F						
DGG200-020	2	2	0.079	0.008	●			●			●					0.787	0.197
DGG300-020	3	3	0.118	0.008	●			●			●					0.787	0.197
DGG400-040	4	4	0.157	0.016	●			●			●					0.787	0.197
DGG500-040	5	5	0.197	0.016	●			●			●					0.984	0.217
DGG600-040	6	6	0.236	0.016	●			●			●					0.984	0.217

●: Line up

DGL

External grooving and parting



P	Steel	★	★	★									
M	Stainless	★	★	★									
K	Cast iron	★	★	★									
N	Non-ferrous												
S	Superalloys	★	★										
H	Hard materials												

★ : First choice
☆ : Second choice

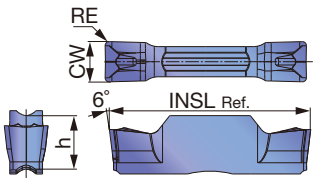
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated											INSL (in)	h (in)
					AH7025	AH8005	AH6235										
DGL2-020	2	2	0.079	0.008	●	●	●									0.787	0.197
DGL3-025	3	3	0.118	0.010	●	●	●									0.787	0.197
DGL4-030	4	4	0.157	0.012	●	●	●									0.787	0.197
DGL5-030	5	5	0.197	0.012	●	●	●									0.984	0.217
DGL6-080	6	6	0.236	0.031	●	●	●									0.984	0.217

● : Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

DTM

External/face grooving, turning and parting



P	Steel	★	★	★		
M	Stainless	★	★	★		
K	Cast iron	★	★	★		
N	Non-ferrous					
S	Superalloys	★	★			
H	Hard materials					

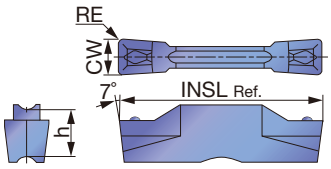
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH8005	Coated AH6235	INSL (in)	h (in)
DTM2-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DTM3-030	3	3	0.118	0.012	●	●	●	0.787	0.197
DTM4-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DTM4-080	4	4	0.157	0.031	●	●	●	0.787	0.197
DTM5-080	5	5	0.197	0.031	●	●	●	0.984	0.217
DTM6-080	6	6	0.236	0.031	●	●	●	0.984	0.217
DTM8-080	8	8	0.315	0.031	●	●	●	1.181	0.264

●: Line up

DTE

External/face grooving, turning and parting (for high precision)



P	Steel	★	★	☆	☆				★				
M	Stainless		★	☆	★								
K	Cast iron		★		☆								
N	Non-ferrous												
S	Superalloys		★	☆									
H	Hard materials												

★ : First choice
☆ : Second choice

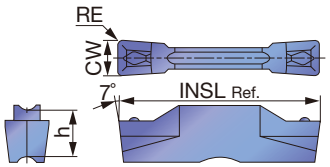
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated T9225	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTE265-015	3	2.65	0.104	0.006	●	●	●	●	●	0.787	0.197
DTE300-020	3	3	0.118	0.008	●	●	●	●	●	0.787	0.197
DTE300-040	3	3	0.118	0.016	●	●	●	●	●	0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	●	●	●	●	0.787	0.197
DTE400-040	4	4	0.157	0.016	●	●	●	●	●	0.787	0.197
DTE400-080	4	4	0.157	0.031	●	●	●	●	●	0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	●	●	●	●	0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	●	●	●	●	0.984	0.217
DTE500-040	5	5	0.197	0.016	●	●	●	●	●	0.984	0.217
DTE500-080	5	5	0.197	0.031	●	●	●	●	●	0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	●	●	●		0.984	0.217
DTE600-080	6	6	0.236	0.031	●	●	●	●		0.984	0.217
DTE600-120	6	6	0.236	0.047	●	●	●	●		0.984	0.217
DTE800-080	8	8	0.315	0.031	●	●	●	●		1.181	0.264
DTE800-120	8	8	0.315	0.047	●	●	●	●		1.181	0.264

●: Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

DTE

External/face grooving, turning and parting



P	Steel	★		★	☆	★	☆	★		★			
M	Stainless			★	☆	★	★	★					
K	Cast iron		★	★		★	☆	★					
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

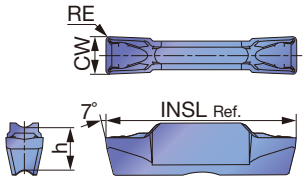
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet						INSL (in)	h (in)
					T9225	T515	AH7025	AH725	AH8005	GH130	AH6235	NS9530							
DTE3-020	3	3	0.118	0.008			●		●		●							0.787	0.197
DTE3-040	3	3	0.118	0.016	●	●	●	●	●	●	●	●						0.787	0.197
DTE4-040	4	4	0.157	0.016	●	●	●	●	●	●	●	●						0.787	0.197
DTE4-080	4	4	0.157	0.031			●		●		●							0.787	0.197
DTE5-040	5	5	0.197	0.016		●	●		●		●							0.984	0.217
DTE5-080	5	5	0.197	0.031			●		●		●							0.984	0.217
DTE6-080	6	6	0.236	0.031		●	●		●		●							0.984	0.217

● : Line up

DTX

External/internal/face grooving, turning and parting



P	Steel	★	★	☆	★	☆	★		★										
M	Stainless		★	☆	★	★	★												
K	Cast iron		★		★	☆	★		☆							☆			
N	Non-ferrous															☆			
S	Superalloys		★	☆	★											★			
H	Hard materials																		

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				Uncoated				INSL (in)	h (in)
					T9225	AH7025	AH725	AH8005	GH130	AH6235		NS9530				KS05F					
DTX2-020	2	2	0.079	0.008		●		●		●						●				0.787	0.197
DTX3-030	3	3	0.118	0.012	●	●	●	●	●	●		●				●				0.787	0.197
DTX4-040	4	4	0.157	0.016	●	●	●	●	●	●		●				●				0.787	0.197
DTX5-040	5	5	0.197	0.016	●	●	●	●	●	●		●				●				0.984	0.217
DTX6-080	6	6	0.236	0.031		●	●	●	●	●						●				0.984	0.217
DTX8-080	8	8	0.315	0.031		●		●		●						●				1.181	0.264

● : Line up

Reference pages: Toolholders → F254 - F260, Standard cutting conditions → F271

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Wear resistance	T9225, AH8005	262 - 984
		< 300 HB	Impact resistance	AH6235, GH130	164 - 394
		< 300 HB	Surface quality	NS9530	262 - 722
M	Stainless steel 303, 304, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Wear resistance	AH8005	164 - 394
		< 200 HB	Impact resistance	AH6235, GH130	164 - 394
K	Gray cast iron No.250B, etc.	-	First choice	T515	492 - 2297
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 591
	Ductile cast iron 65-45-12, etc.	-	First choice	T515	492 - 984
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH8005	66 - 197
		< HRC 40	Impact resistance	AH7025, AH725, AH6235	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	KS05F	66 - 328
		< HRC 40	Impact resistance	AH7025, AH725	66 - 262

Please see page F261, F262 for feed: *f* (ipr).

STH

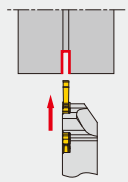
ISO	Grade	CW	Application	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
H	BXA10	0.118"	External turning	328 - 755	0.003 - 0.005	0.016 - 0.039
			Face turning	328 - 755	0.003 - 0.005	0.016 - 0.031
		0.197"	External turning	328 - 755	0.003 - 0.005	0.020 - 0.059
			Face turning	328 - 755	0.003 - 0.005	0.020 - 0.031

SGN

ISO	Grade	Edge preparation	Workpiece condition	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
H	BX360	No symbol	Continuous	262 - 492	0.0012 - 0.0031
		-S	Light interrupted	164 - 394	0.0012 - 0.0031
		-H	Heavy interrupted	131 - 328	0.0012 - 0.0024

JSXXR/L

Parting-off and grooving toolholders



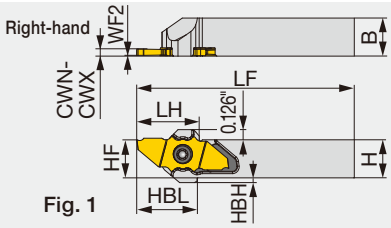


Fig. 1



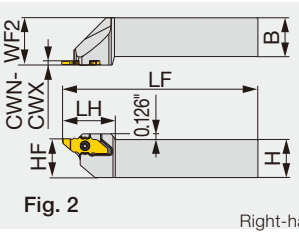
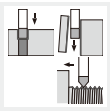


Fig. 2



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque	Fig.
JSXXR/L063	0.024	0.098	0.375	0.375	4.750	0.774	0.375	0.008/0.367	0.748	0.120	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L083	0.024	0.098	0.500	0.500	4.750	0.774	0.500	0.008/0.492	0.748	0.060	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103	0.024	0.098	0.625	0.625	4.750	0.774	0.625	0.008/0.617	-	-	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L123	0.024	0.098	0.750	0.750	3.950	0.886	0.750	0.008/0.742	-	-	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L163	0.024	0.098	1.000	1.000	5.350	1.339	1.000	1.250	-	-	JX**06...,12...,16..., 20...	0.89	2

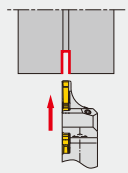
Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	0.6	2.5	10	10	120	19.65	10	0.2/9.8	19	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09	0.6	2.5	12	12	85	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09	0.6	2.5	12	12	120	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09	0.6	2.5	16	16	120	19.65	16	0.2/15.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2020H09	0.6	2.5	20	20	100	22.5	20	0.2/19.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2525Z09	0.6	2.5	25	25	135	34	25	30	-	-	JX**06...,12...,16..., 20...	1.2	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20...inserts, and 0.157" (4 mm) shorter for JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/H/X-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes

Direct connection **Tube connection**



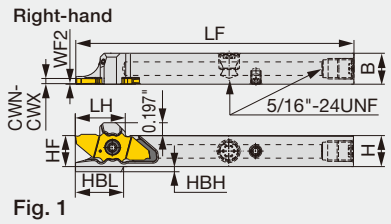


Fig. 1

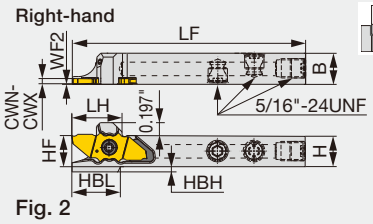
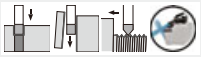
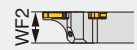


Fig. 2





Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque	Fig.
JSXXR/L083F-CHP	0.024	0.098	0.500	0.500	3.344	0.764	0.500	0.008 / 0.492	0.736	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-CHP(3)	0.024	0.098	0.500	0.500	4.750	0.764	0.500	0.008 / 0.492	0.736	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-CHP(3)	0.024	0.098	0.625	0.625	4.750	0.764	0.625	0.008 / 0.617	-	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(3)	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-CHP(3)	0.6	2.5	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-CHP(3),(4)	0.6	2.5	16	16	120	19.4	16	0.2	18.7	2.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-CHP(3)	0.6	2.5	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 0.157" (4 mm) shorter for JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS





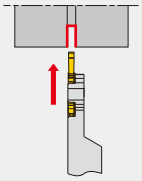


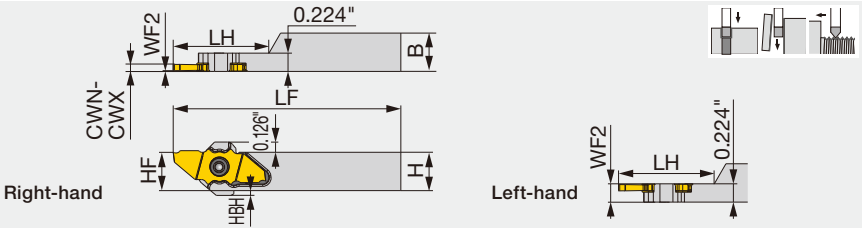

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**09	CSTC-4L100DL	T-1008/5	-	-	-	-
JSXXL**09	CSTC-4L100DR	T-1008/5	-	-	-	-
JSXXR**F**-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F**-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X**-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X**-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Reference pages: Inserts → F274, F275, Standard cutting conditions → F275
Parts for coolant hose → F290

JSXXR/L-S

Parting-off toolholders, for swiss lathes (for sub spindle)





Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque
JSXXR/L063-S	0.024	0.098	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX**06...,12...,16...(3)	0.89
JSXXR/L083-S	0.024	0.098	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX**06...,12...,16...(3)	0.89

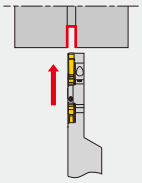
Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*
JSXXR/L1010X09-S	0.6	2.5	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...(3)	1.2
JSXXR/L1212F09-S	0.6	2.5	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1212X09-S	0.6	2.5	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1616X09-S	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2

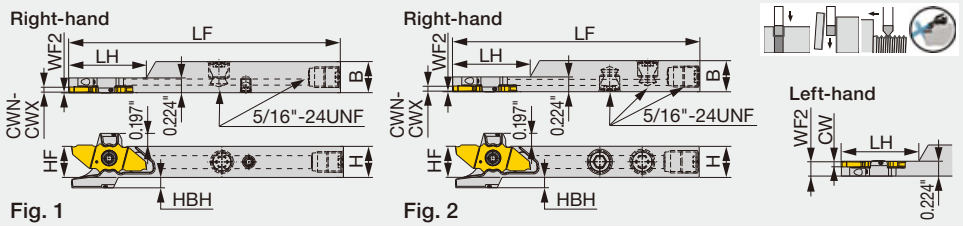
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) JX**20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/X-S-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes (for sub spindle)

Direct connection **Tube connection**





Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque	Fig.
JSXXR/L083F-S-CHP	0.024	0.098	0.500	0.500	3.344	1.024	0.500	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-S-CHP	0.024	0.098	0.500	0.500	4.750	1.181	0.500	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-S-CHP	0.024	0.098	0.625	0.625	4.750	1.181	0.625	0.008/0.217	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP(4)	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-S-CHP(3),(4)	0.6	2.5	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09B-S-CHP(3)	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-S-CHP(3),(4)	0.6	2.5	16	16	120	30	16	0.2	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-S-CHP(3)	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
(2) The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

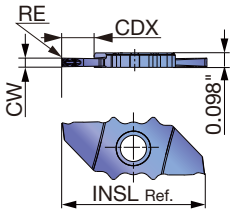
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**-S	CSTC-4L055DL	T-1008/5	-	-	-	-
JSXXL**-S	CSTC-4L055DR	T-1008/5	-	-	-	-
JSXXR**F**-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F**-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**X**-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**X**-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Reference pages: Inserts → F274, F275, Standard cutting conditions → F275
Parts for coolant hose → F290

JXPS**R/L-F (with 3D chipbreaker, sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

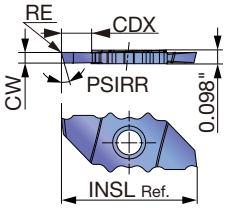
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)
JXPS06R06F	R	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS06L06F	L	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS12R08F	R	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12L08F	L	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12R10F	R	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12L10F	L	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS16R15F	R	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS16L15F	L	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS20R20F	R	2	0.079	0.002	●	0.787	0.413	1.299
JXPS20L20F	L	2	0.079	0.002	●	0.787	0.413	1.299

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

JXPG**R/L-F (Sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR
JXPG06R10F	R	1	0.039	0.002	●	0.236	0.138	0.827	0°
JXPG06L10F	L	1	0.039	0.002	●	0.236	0.138	0.827	0°
JXPG06R15F	R	1.5	0.059	0.002	●	0.236	0.138	0.827	0°
JXPG06L15F	L	1.5	0.059	0.002	●	0.236	0.138	0.827	0°
JXPG06R10F-15	R	1	0.039	0.002	●	0.236	0.138	0.827	15°
JXPG06L10F-15	L	1	0.039	0.002	●	0.236	0.138	0.827	15°
JXPG06R15F-15	R	1.5	0.059	0.002	●	0.236	0.138	0.827	15°
JXPG06L15F-15	L	1.5	0.059	0.002	●	0.236	0.138	0.827	15°

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

Reference pages: Toolholders → F272, F273

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR
JXPG12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.984	0°
JXPG12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.984	0°
JXPG12R20F	R	2	0.079	0.002	●	0.472	0.256	0.984	0°
JXPG12L20F	L	2	0.079	0.002	●	0.472	0.256	0.984	0°
JXPG12R15F-15	R	1.5	0.059	0.002	●	0.472	0.256	0.984	15°
JXPG12L15F-15	L	1.5	0.059	0.002	●	0.472	0.256	0.984	15°
JXPG12R20F-15	R	2	0.079	0.002	●	0.472	0.256	0.984	15°
JXPG12L20F-15	L	2	0.079	0.002	●	0.472	0.256	0.984	15°
JXPG16R15F	R	1.5	0.059	0.002	●	0.630	0.335	1.142	0°
JXPG16L15F	L	1.5	0.059	0.002	●	0.630	0.335	1.142	0°
JXPG16R20F	R	2	0.079	0.002	●	0.630	0.335	1.142	0°
JXPG16L20F	L	2	0.079	0.002	●	0.630	0.335	1.142	0°
JXPG16R15F-15	R	1.5	0.059	0.002	●	0.630	0.335	1.142	15°
JXPG16L15F-15	L	1.5	0.059	0.002	●	0.630	0.335	1.142	15°
JXPG16R20F-15	R	2	0.079	0.002	●	0.630	0.335	1.142	15°
JXPG16L20F-15	L	2	0.079	0.002	●	0.630	0.335	1.142	15°
JXPG20R15F	R	1.5	0.059	0.002	●	0.787	0.413	1.299	0°
JXPG20L15F	L	1.5	0.059	0.002	●	0.787	0.413	1.299	0°
JXPG20R20F	R	2	0.079	0.002	●	0.787	0.413	1.299	0°
JXPG20L20F	L	2	0.079	0.002	●	0.787	0.413	1.299	0°
JXPG20R15F-15	R	1.5	0.059	0.002	●	0.787	0.413	1.299	15°
JXPG20L15F-15	L	1.5	0.059	0.002	●	0.787	0.413	1.299	15°
JXPG20R20F-15	R	2	0.079	0.002	●	0.787	0.413	1.299	15°
JXPG20L20F-15	L	2	0.079	0.002	●	0.787	0.413	1.299	15°

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

STANDARD CUTTING CONDITIONS

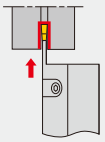
Parting, Grooving

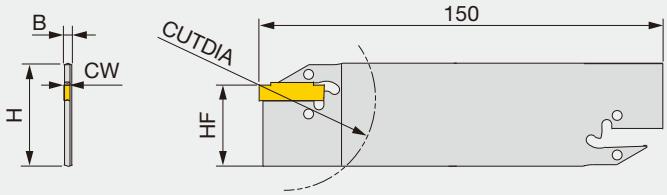
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Carbon steels, Alloy steels 1055, etc., 4140, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

Reference pages: Toolholders → F272, F273

CCH-W

External grooving and parting blade, for 2 corner inserts





Unit: mm

Metric	CW	CUTDIA	H	B	HF	Insert
CCH32-W20	2	33	32	1.6	24.6	WGE20, WGE20R/L
CCH32-W30	3	33	32	2.2	24.6	WG*30, WGE30R/L
CCH32-W40	4	42	32	3.2	24.5	WG*40, WGE40R/L
CCH32-W50	5	42	32	4.2	24.3	WG*50, WGE50R/L

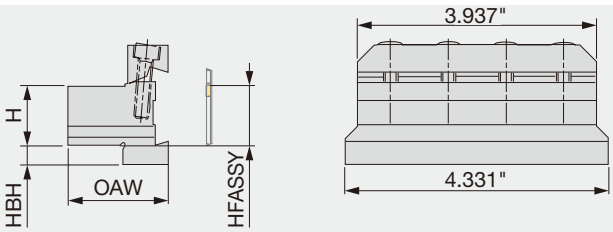
SPARE PARTS



Designation	Wrench (Optional)
CCH32-W...	CRW33

CCBS-32

Tool block for CCH blade



Inch	H	HFASSY	HBH	OAW	Blade
CCBS12-32-U	0.750	0.750	0.550	1.490	CCH32...
CCBS16-32-U	1.000	1.000	0.300	1.660	CCH32...
CCBS20-32-U	1.250	1.250	0.210	1.660	CCH32...

Metric	H	HFASSY	HBH	OAW	Blade
CCBS20-32	20	20	13	38	CCH32...
CCBS25-32	25	25	8	42	CCH32...
CCBS32-32	32	32	5	42	CCH32...

Blade sold separately.

SPARE PARTS





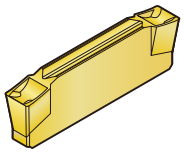
Designation	Clamp	Screw	Wrench
CCBS...	CC-32	CM6X25	P-5

External
Internal
Face
Parting
Others

Reference pages: Inserts → F277 - F279, Standard cutting conditions → F279

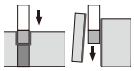
External grooving and parting

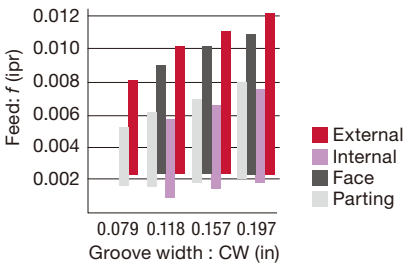
WGE



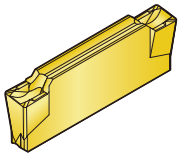
F278

1st choice for external grooving and parting
Excellent chip control for grooving
CW = 0.079" - 0.197"





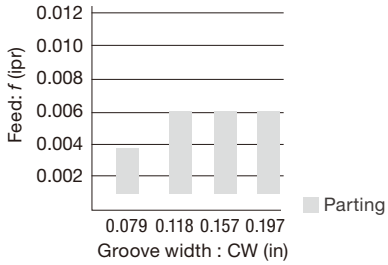
WGE R/L



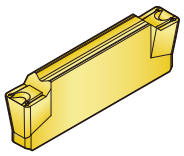
F279

Handed insert
Minimize burr generation when workpiece is cut off
CW = 0.079" - 0.197"



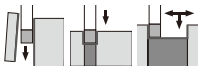


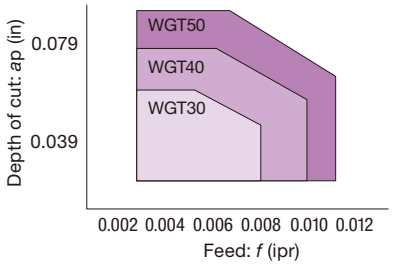
WGT



F278

1st choice for turning
Low cutting force and good chip control for traversing
CW = 0.118" - 0.197"



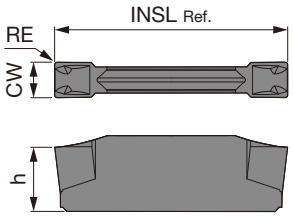


Please see page F*** for the product details.

INSERTS (2 corners)

WGE

For external grooving and parting



P	Steel	★	★	★				★			
M	Stainless		★	★							
K	Cast iron		★	☆				☆			
N	Non-ferrous										
S	Superalloys		☆								
H	Hard materials										

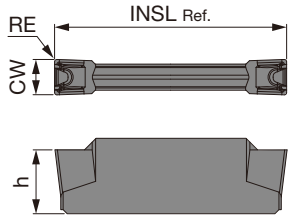
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGE20	2	0.079	0.008	●	●	●	●	0.787	0.185
WGE30	3	0.118	0.008	●	●	●	●	0.787	0.217
WGE40	4	0.157	0.008	●	●	●	●	0.984	0.224
WGE50	5	0.197	0.008	●	●	●	●	0.984	0.232

● : Line up

WGT

For external grooving, parting and turning



P	Steel	★	★	★				★			
M	Stainless		★	★							
K	Cast iron		★	☆				☆			
N	Non-ferrous										
S	Superalloys		☆								
H	Hard materials										

★ : First choice
☆ : Second choice

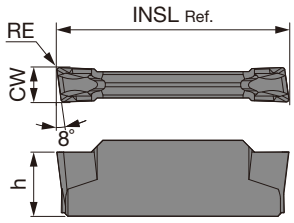
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGT30	3	0.118	0.016	●		●	●	0.787	0.217
WGT40	4	0.157	0.016	●		●	●	0.984	0.224
WGT50	5	0.197	0.016	●	●	●	●	0.984	0.232

● : Line up

Reference pages: Toolholders → F276

WGE(R/L)

For parting off (handed inserts)



Right hand (R) shown.

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
WGE20R	R	2	0.079	0.008		●	0.787	0.185
WGE20L	L	2	0.079	0.008		●	0.787	0.185
WGE30R	R	3	0.118	0.008	●	●	0.787	0.217
WGE30L	L	3	0.118	0.008		●	0.787	0.217
WGE40R	R	4	0.157	0.008		●	0.984	0.224
WGE40L	L	4	0.157	0.008		●	0.984	0.224
WGE50R	R	5	0.197	0.008		●	0.984	0.232
WGE50L	L	5	0.197	0.008		●	0.984	0.232

● : Line up

STANDARD CUTTING CONDITIONS (for 2 corner inserts)

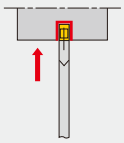
ISO	Workpiece material	Recommended grade	Cutting speed *Vc* (sfm)
P	Low carbon steels Alloy steels (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steels Alloy steels (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steels Alloy steels (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 492
M	Stainless steels	GH730, AH120	164 - 394
K	Gray and ductile cast irons	GH730, AH120	164 - 591

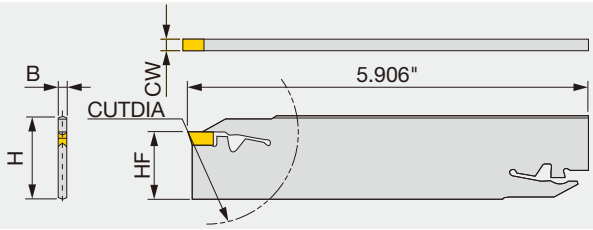
Operation	Feed: *f* (ipr) Groove width: CW 2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (WGE□□)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting off (WGE□□R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Turning (WGT□□)	-	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011

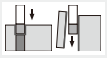
Reference pages: Toolholders → F276

CCH

External grooving and parting blade, for 1 corner inserts







Inch	CW	CUTDIA	H	B	HF	Insert
CCH26-30	0.118	2.76	0.979	0.087	0.843	GE30,GE30R/L,GE30-AL
CCH26-40	0.157	2.76	0.968	0.126	0.837	GE40,GE40R/L,GE40-AL
CCH32-30U	0.118	3.94	1.230	0.087	0.968	GE30,GE30R/L,GE30-AL
CCH32-40U	0.157	3.94	1.220	0.126	0.963	GE40,GE40R/L,GE40-AL
CCH32-50U	0.197	4.72	1.210	0.165	0.958	GE50,GE50R/L

Metric	CW	CUTDIA	H	B	HF	Insert
CCH32-30	3	100	32	2.2	24.6	GE30,GE30R/L,GE30-AL
CCH32-40	4	100	32	3.2	24.5	GE40,GE40R/L,GE40-AL
CCH32-50	5	120	32	4.2	24.3	GE50,GE50R/L

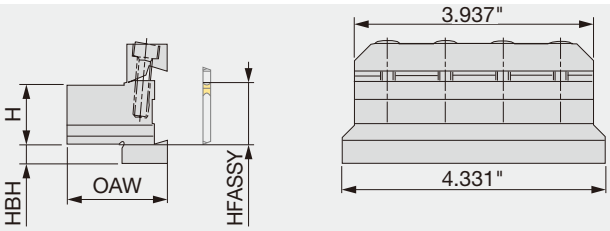


SPARE PARTS

Designation	Wrench
CCH...	CTL-2

CCBS-32

Tool block for CCH blade



Inch	H	HFASSY	HBH	OAW	Blade
CCBS12-32-U	0.750	0.750	0.550	1.490	CCH32...
CCBS16-32-U	1.000	1.000	0.300	1.660	CCH32...
CCBS20-32-U	1.250	1.250	0.210	1.660	CCH32...

Metric	H	HFASSY	HBH	OAW	Blade
CCBS20-32	20	20	13	38	CCH32...
CCBS25-32	25	25	8	42	CCH32...
CCBS32-32	32	32	5	42	CCH32...

Blade sold separately.





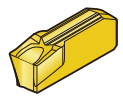
SPARE PARTS

Designation	Clamp	Screw	Wrench
CCBS...	CC-32	CM6X25	P-5

Reference pages: Inserts → F281 - F285, Standard cutting conditions → F285

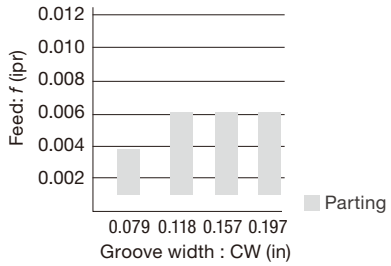
External grooving and parting

GE R/L

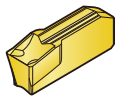


F282

Handed insert
Minimize burr generation when workpiece is cut off
CW = 0.118" - 0.197"

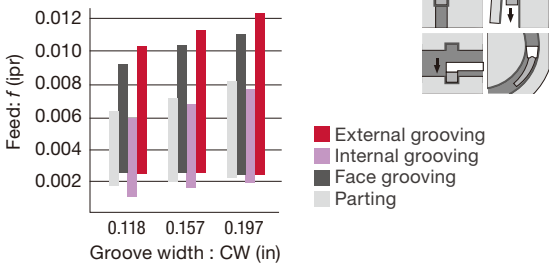


GE

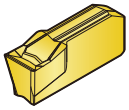


F283

1st choice for external grooving and parting
Excellent chip control for grooving
CW = 0.118" - 0.197"

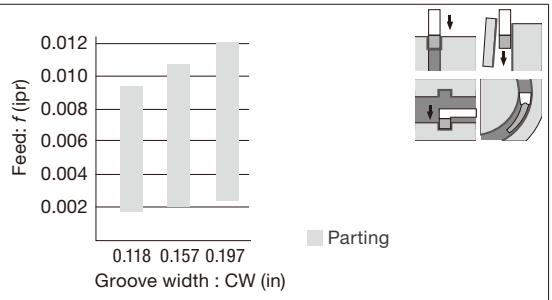


GF

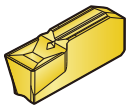


F283

1st choice for face grooving
Low cutting force and good chip control for face grooving
CW = 0.118" - 0.197"

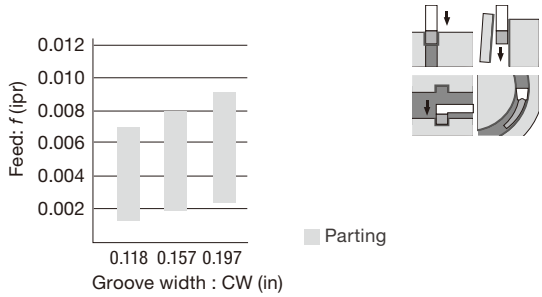


GN



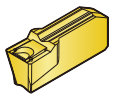
F284

1st choice for internal grooving
Low cutting force and good chip control for internal grooving
CW = 0.118" - 0.197"



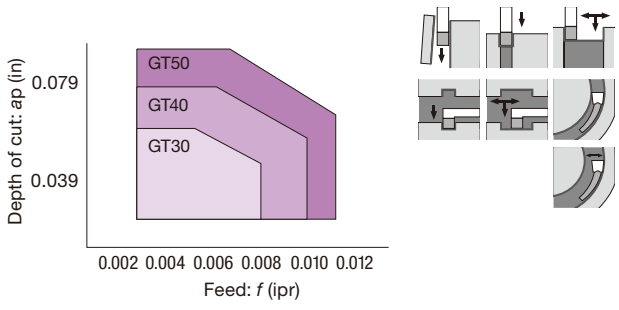
External grooving and turning

GT



F284

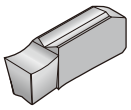
1st choice for turning
Low cutting force and good chip control for traversing
CW = 0.118" - 0.197"



Please see page F*** for the product details.

For aluminum and non-ferrous metal

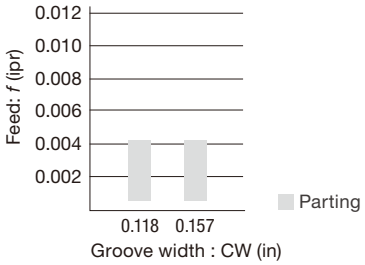
GE-AL

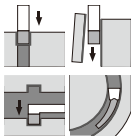


F285

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.118" - 0.157"



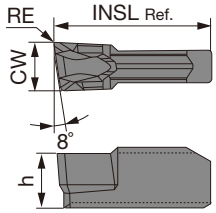


Please see page F*** for the product details.

INSERTS (1 corner)

GE-R/L

For parting off (handed inserts)



Right hand (R) shown.

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

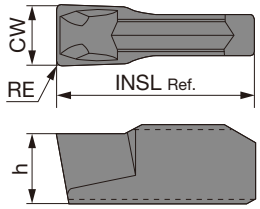
Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
GE30R	R	3	0.118	0.008	●	●	0.394	0.138
GE30L	L	3	0.118	0.008		●	0.394	0.138
GE40R	R	4	0.157	0.008	●	●	0.394	0.157
GE40L	L	4	0.157	0.008		●	0.394	0.157
GE50R	R	5	0.197	0.008		●	0.472	0.177
GE50L	L	5	0.197	0.008	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F280, Standard cutting conditions → F285

GE

For external grooving and parting



P	Steel	★	★	★				★			
M	Stainless		★	★							
K	Cast iron		★	☆				☆			
N	Non-ferrous										
S	Superalloys		☆								
H	Hard materials										

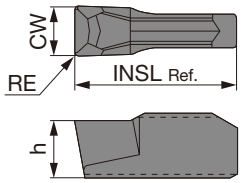
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated						Cermet						INSL (in)	h (in)
				T9225	AH120	GH730				NS9530							
GE30	3	0.118	0.008	●	●	●				●						0.394	0.138
GE40	4	0.157	0.008	●	●	●				●						0.394	0.157
GE50	5	0.197	0.008	●	●	●				●						0.472	0.177

● : Line up

GF

For face grooving



P	Steel	★			★						
M	Stainless	★									
K	Cast iron	☆			☆						
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

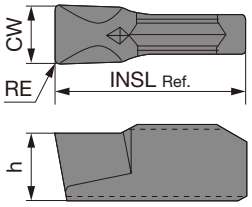
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet									INSL (in)	h (in)
				GH730			NS9530										
GF30	3	0.118	0.008	●			●									0.394	0.138
GF40	4	0.157	0.008	●			●									0.394	0.157
GF50	5	0.197	0.008	●			●									0.472	0.177

● : Line up

Reference pages: Toolholders → F280, Standard cutting conditions → F285

GN

For internal grooving



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

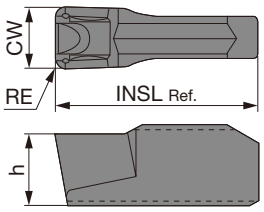
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GT

For external grooving and turning



P	Steel	★	★	★	★
M	Stainless		★	★	
K	Cast iron		★	☆	☆
N	Non-ferrous				
S	Superalloys		☆		
H	Hard materials				

★ : First choice
☆ : Second choice

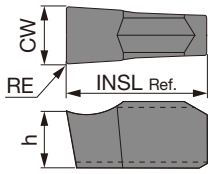
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GT30	3	0.118	0.016		●	●	●	0.394	0.138
GT40	4	0.157	0.016		●	●	●	0.394	0.157
GT50	5	0.197	0.016	●	●	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F280

GE-AL

For aluminum and non-ferrous metal



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

● : Line up

STANDARD CUTTING CONDITIONS (for 1 corner inserts)

ISO	Workpiece material	Grades	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730, AH120	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730, AH120	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730, AH120	164 - 394
M	Stainless steel	GH730, AH120	164 - 394
K	Gray iron, Ductile cast iron	GH730, AH120	164 - 591
N	Aluminum alloy, Non-ferrous metal	KS05F	656 - 984

For Parting off

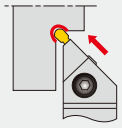
Operation	Feed: *f* (ipr) Groove width: CW		
	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (GE**)	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting off (GE**R/L)	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Traversing (GT**)	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Parting off for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	-

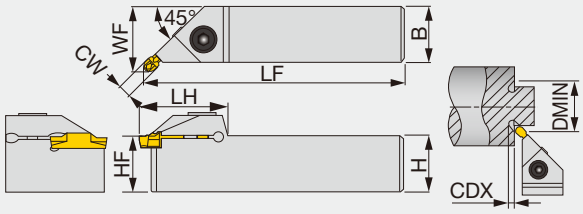
For diameter compensation values in traversing, see page F129.

Reference pages: Toolholders → F280

CGEUR/L

External 45° undercutting toolholder





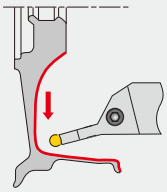
Right hand (R) shown.

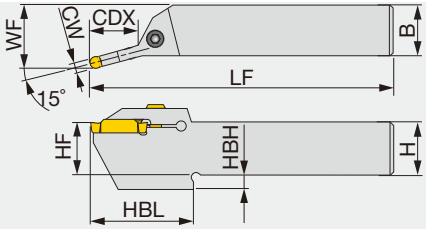
Metric	CW	DMIN	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Insert	Torque
CGEUR/L1616-3T02	3	32	3	2.8	16	16	110	30	16	19.3	DTIU...	5
CGEUR/L2020-3T02	3	32	3	2.8	20	20	125	30	20	23.3	DTIU...	5
CGEUR/L2525-3T02	3	32	3	2.8	25	25	150	30	25	28.3	DTIU...	5
CGEUR/L1616-4T02	4	32	4	2.8	16	16	110	31	16	19.5	DTIU...	8.5
CGEUR/L2020-4T02	4	32	4	2.8	20	20	125	31	20	23.5	DTIU...	8.5
CGEUR/L2525-4T02	4	32	4	2.8	25	25	150	31	25	28.5	DTIU...	8.5
CGEUR/L2525-6T03	6	34	5, 6	3.4	25	25	150	35	25	28.9	DTIU...	8.5

(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: N·m

CTER/L-15A

Square shank toolholder for profiling aluminum wheel





Right hand (R) shown.

Metric	CW	Seat size	CDX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque
CTER/L2525-6T25-15A	6	6	25	25	25	150	25	32.2	7	50.5	DTA...	5
CTER/L2525-8T30-15A	8	8	30	25	25	150	25	32.9	7	55	DTA...	5

Torque: Recommended clamping torque: N·m

SPARE PARTS



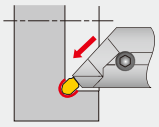

Designation	Clamping screw	Wrench
CGEUR/L****-3T02	CM5X0.8X16-A	P-4
CGEUR/L1616-4T02	CM6X1X16-A	P-5
CGEUR/L2020-4T02	CM6X1X20-A	P-5
C**R/L2525-...	CM6X1X25-A	P-5

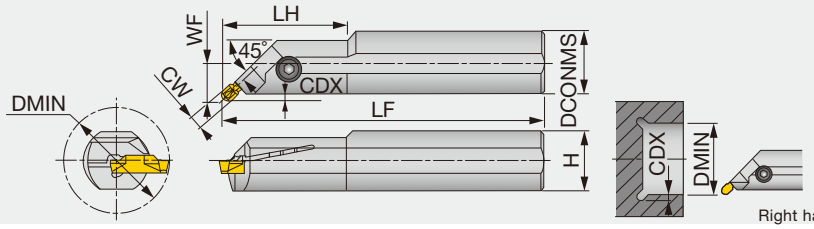
External
Internal
Face
Parting
Others

Reference pages: Inserts → F288, F289, Standard cutting conditions → F289

CGIUR/L

Internal 45° undercutting toolholder





Right hand (R) shown.

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	LF	LH	WF (1)	Insert	Torque
CGIUR/L20-3T02-D380	3	38	3	2.8	20	19	160	-	12.8	DTIU...	5
CGIUR/L25-3T02-D380	3	38	3	2.8	25	23	200	40	14.8	DTIU...	5
CGIUR/L20-4T02-D380	4	38	4	2.8	20	19	160	-	12.9	DTIU...	5
CGIUR/L25-4T02-D460	4	46	4	2.8	25	23	200	40	14.9	DTIU...	5
CGIUR/L25-6T02-D460	6	46	5, 6	2.8	25	23	200	-	15.2	DTIU...	8.5

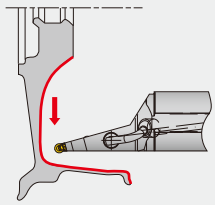
(1) WF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: N·m

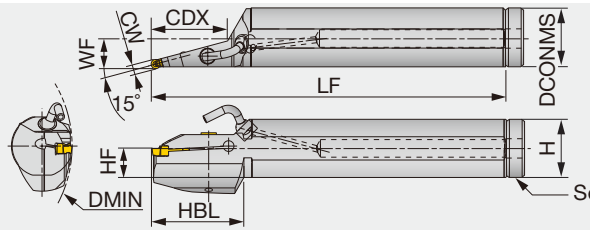
SPARE PARTS

Designation	Clamping screw	Wrench
CGIUR/L20-3T02-D380	CM5X0.8X12-A	P-4
CGIUR/L25-3T02-D380	CM5X0.8X16-A	P-4
CGIUR/L**-4T02-D...	CM5X0.8X16-A	P-4
CGIUR/L25-6T02-D460	CM6X1X25-A	P-5

CGIUR/L-15A

Round-shank toolholder for profiling aluminum wheel





Right hand (R) shown.

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	WF	LF	HF	HBL	Insert	Seal cap	Torque
CGIUR/L40-6T50-D160-15A	6	160	6	50	40	38.5	19.7	320	19	60	DTA...	CA-40	5
CGIUR/L40-8T83-D160-15A	8	160	8	83	40	38.5	20.5	320	19	85	DTA...	CA-40	5
CGIUR/L50-6T85-D200-15A	6	200	6	85	50	48.5	25.2	350	23.5	85	DTA...	-	5
CGIUR/L50-8T85-D200-15A	8	200	8	85	50	48.5	25.9	350	23.5	85	DTA...	-	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap
CGIUR/L**-15A	CM6X1X25-A	P-5	CA-40

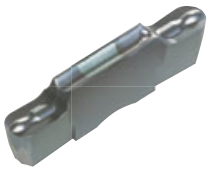
NOZZLE

Coolant pipe	Coolant nozzle
PNZ5	CNZ125

Reference pages: Inserts → F288, F289, Standard cutting conditions → F289

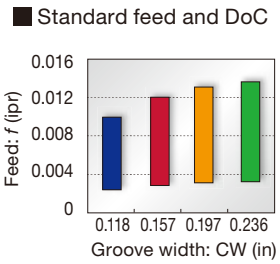
Profiling and undercutting

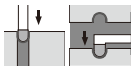
DTIU type (2 corners)



Full radius type

Excellent chip control for undercutting
CW = 0.118" - 0.236"





External
Internal
Face
Parting
Others

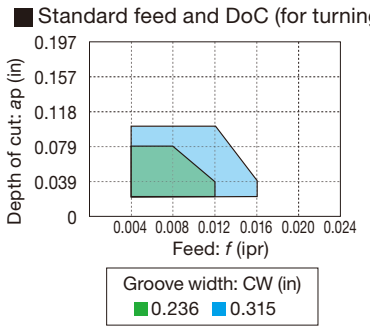
Aluminum wheel machining

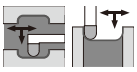
DTA type (2 corners)



Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"

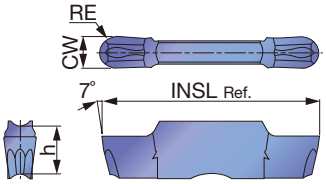




INSERTS

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

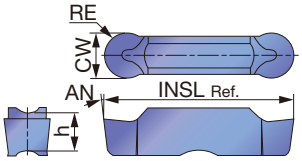
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)
DTIU300-150	3	3	0.118	0.059	●	●	●	0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●	0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●	0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●	0.984	0.217

●: Line up

Reference pages: Toolholders → F286, F287

DTA

Aluminum wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Impact resistance	GH130	164 - 394
M	Stainless steel 303, 304, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, etc.	-	First choice	AH7025	492 - 2297
		-	Impact resistance	GH130	164 - 591
	Ductile cast iron 65-45-12, etc.	-	First choice	AH7025	492 - 984
		-	Impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH7025, AH725	66 - 197
		< HRC 40	Impact resistance	GH130	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	Impact resistance	AH7025, AH725	66 - 262

Please see page F288 for feed: *f* (ipr).

Reference pages: Toolholders → F286, F287

PARTS FOR COOLANT HOSE

Connecting hose

Fig.1

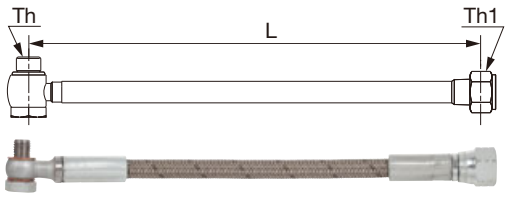
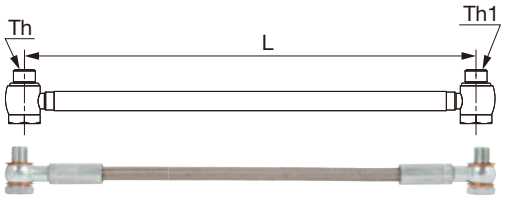
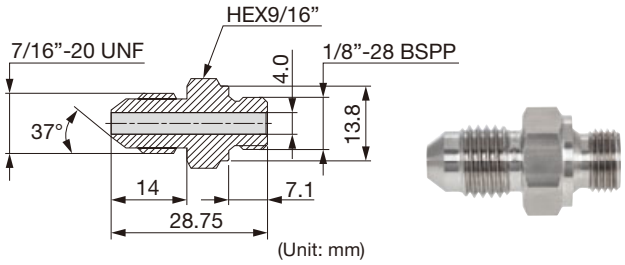


Fig.2



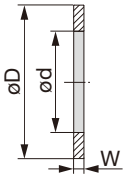
Metric	Length L	Screw Th	Screw Th1	Max. pressure MPa (PSI)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26 (3771)	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26 (3771)	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20 (2901)	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20 (2901)	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26 (3771)	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26 (3771)	2

Connector



Metric
CHP-NIPPLE-G1/8-7/16UNF

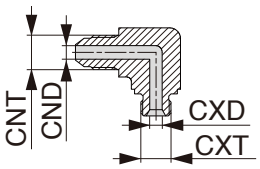
Seal washer





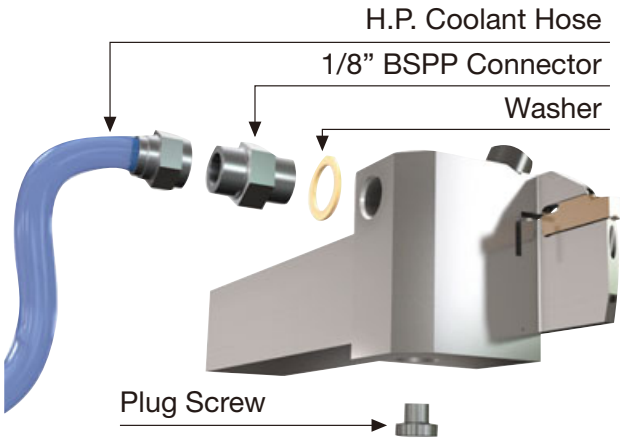
Metric	øD	ød	W
CHP-COPPER-SEAL1/8	15	10	1
CHP-COPPER-SEAL5/16	11.9	8.15	1.35
CHP-COPPER-SEAL5/16-2.5	9.4	8	2.5

Connector elbow





Metric	CNT	CND	CXT	CXD
CHP-ELBOW-90-G1/8-7/16UNF	7/16"-20 UNF	4.4	1/8"-28 BSPP	4
CHP-ELBOW-90-5/16-7/16UNF	7/16"-20 UNF	4.4	5/16"-24 UNF	4



Miniature Machining



Miniature Machining - Content structure

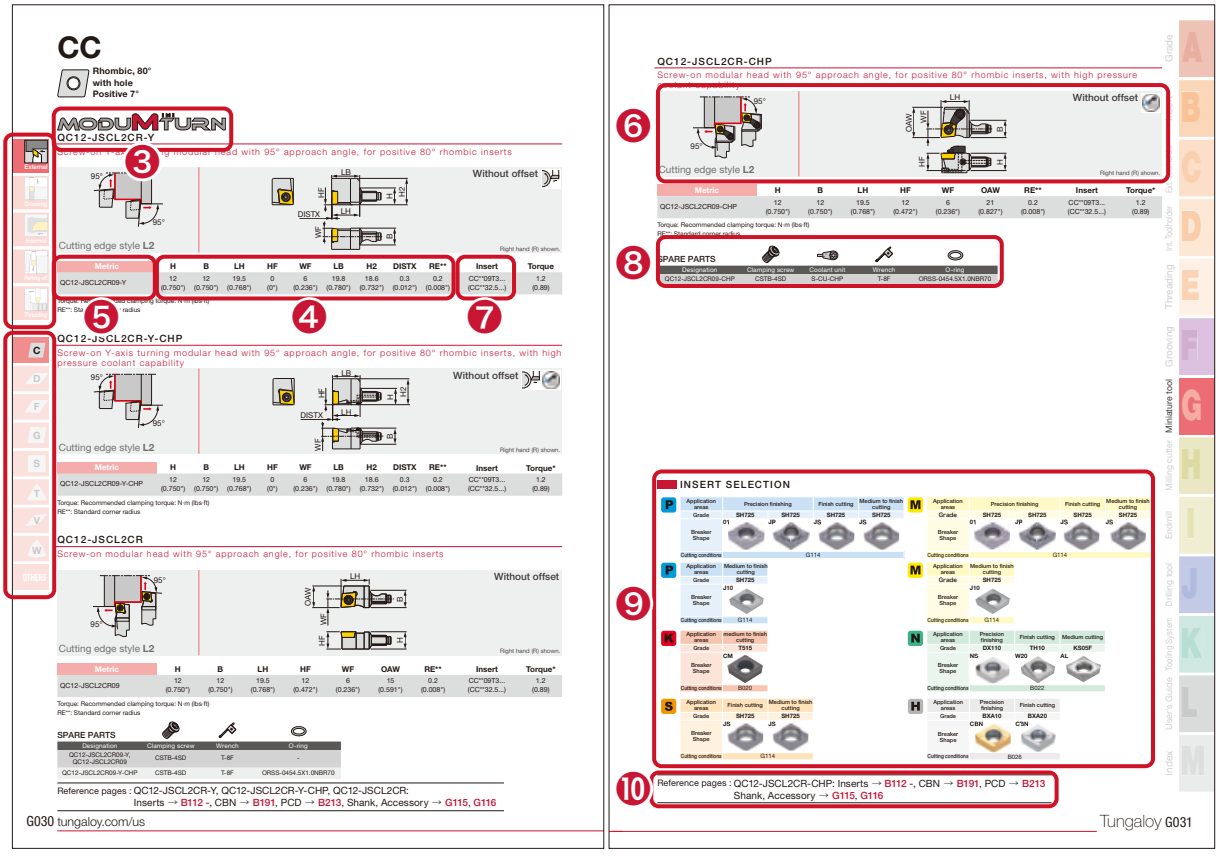
- Products are listed by application.
- In the same application, products are listed by insert shape.
- Items are listed by product series.
- Toolholders in the catalog are our standard items.

How to use the page

Method ① Select the application and the insert shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❼) and (❾).

Method ② Select the series name on G003 and check the details on each page.

Method ③ Select an item from Quick Guide on G004 - G025.



❶ : Application
❷ : Insert shape
❸ : Tool series name
❹ : Dimension table
❺ : Toolholder designation
e.g. right-hand, 0.5 inch square shank

→ **JSDJ2X R 082 X-CHP**

❻ : Dimension drawing (conforming to ISO13399)
❼ : Applicable insert
❽ : Spare parts
❾ : Insert selection
❿ : Reference page

When ordering
- Please specify the designation and quantity.

e.g. **JSWL2XR082X-CHP** ... 1 (one toolholder per package)
* Inserts are not included. Please order those separately.

Main products



MODUMINITURN
Modular head turning toolholder system
G026



MINIVLOCKGROOVE
High precision grooving and threading tool series for CNC automatic lathes
G014, G020, G083 -, G168 -



MINIFORCETURN
Economical double-sided inserts with excellent sharpness
G029



J-SERIES
Toolholders for small-part machining
G004 -, G032 -
G106 -, G182 -



TETRAMINICUT
Unique insert pocket geometry for grooving with high quality and precision
CW = 0.013" - 0.125"
G014 -
G016 -, G020 -
G086 -, G137 -, G170 -



TETRAFORCECUT
4-cornered insert with good clamping rigidity for highly precise grooving and parting
CW = 0.02" - 0.125"
G014, G099 -



DUOFORCECUT
New flexible turning tool series for CNC automatic lathes and cam-driven lathes
CW = 0.02" - 0.039"
G074, G140 -



DUOJUSTCUT
Innovative clamping system for high rigidity in parting
CW = 0.024" - 0.079"
G018 -, G022 -
G142 -, G176 -



TUNGCUT
Multi-functional tool series for various grooving operations
CW = 0.047" - 0.157"
G018 -, G148 -

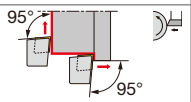
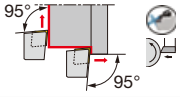
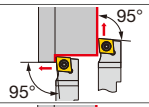
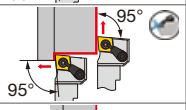
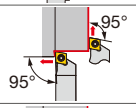
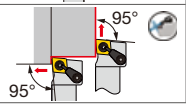


TINYMINITURN
Solid boring bar for turning small diameters with high precision
G024 -, G123 -



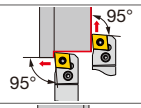
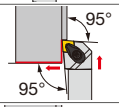
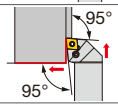
TUNGHEAVYGROOVE
Highly rigid clamping for wide grooving and profiling in one pass
CW = 0.394" - 1.000"
G016, G112 -

CC** inserts

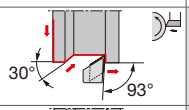
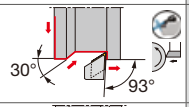
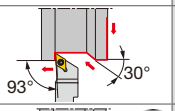
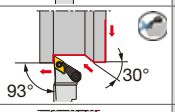
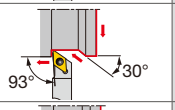
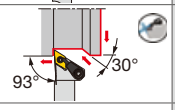
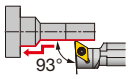
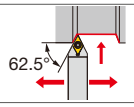
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in)					Holder			Clamping style		Offset	Page
				0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	MODUMTURN (Modular head)	Y-axis feed	TUNGTJET (Through-coolant)	Screw-on	Back-clamp		
95°		QC-JSCL2CR-Y	CC**3...		○	○			○	○		✓		without*	G030
		QC-JSCL2CR-Y-CHP	CC**3...		○	○			○	○	○	✓		without*	G030
		QC-JSCL2CR	CC**3...		○	○			○			✓		without*	G030
		QC-JSCL2CR-CHP	CC**3...		○	○			○		○	✓		without*	G031
		JSCL2CR/L	CC**2...	○	○		○					✓		without	G032
		JSCL2CR-CHP	CC**3...		○		○				○	✓		without	G033

* When using stepped-head shank, the “Offset” will be “with”.

CN** inserts

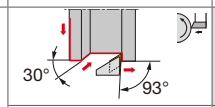
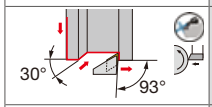
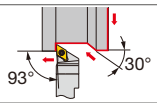
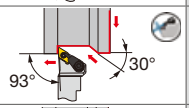
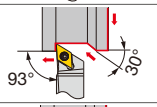
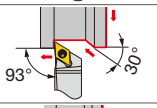
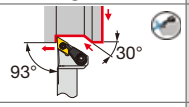
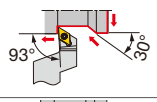
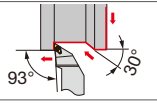
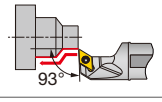
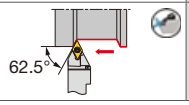
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in)		Holder	Clamping style				Offset	Page
				0.625 x 0.625	0.750 x 0.750	TUNGTJET (Through-coolant)	Screw-on	Back-clamp	Lever-lock	Double-clamp		
95°		PCLNR/L	C/GN**33		○		✓				with	G036
		ACLNR/L	C/GN**33/43		○			✓			with	C019
		PCLNR/L-CHP	C/GN**33		○	○			✓		with	C023

DC** inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	Cylindrical shank (shank dia.) ø0.625	ø0.750	Holder MODUMTURN (Modular head)	Y-axis feed	TUNGTJET (Through-coolant)	Clamping style Screw-on	Back-clamp	Offset	Page
93°		**QC-JSDJ2CR-Y**	DC**2		○	○				○	○		✓		without*	G037
		**QC-JSDJ2CR-Y-CHP**	DC**2		○	○				○	○	○	✓		without*	G038
		**QC-JSDJ2CR**	DC**2/3		○	○				○			✓		without*	G038
		**QC-JSDJ2CR-CHP**	DC**2/3		○	○				○		○	✓		without*	G038
		**JSDJ2CR/L**	DC**2/3	○	○		○						✓		without	G039
		**JSDJ2CR/L-CHP**	DC**2/3		○		○					○	✓		without	G040 G041
		**JS-SDUCL**	DC**2/3						○				✓		-	G043
62.5°		**JSDNCN**	DC**2	○	○		○						✓		with	G044

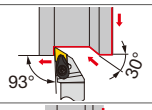
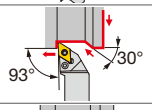
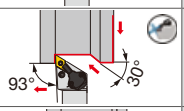
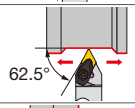
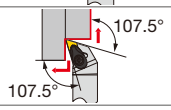
* When using stepped-head shank, the “Offset” will be “with”.

DX*U inserts

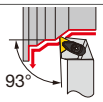
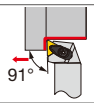
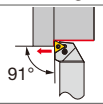
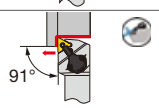
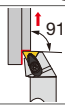
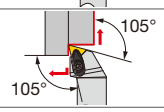
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in)						Cylindrical shank (shank dia.)		Holder			Clamping style		Offset	Page
				0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.625 x 0.750	0.750 x 0.750	ø0.625	ø0.750	MODULMTURN (Modular head)	Y-axis feed	TUNGTJET (Through-coolant)	Screw-on	Back-clamp		
93°		QC-JSDJ2XR-Y	DX*U		○	○						○	○		✓		without*	G046
		QC-JSDJ2XR-Y-CHP	DX*U		○	○						○	○	○	✓		without*	G046
		QC-JSDJ2XR	DX*U		○	○						○			✓		without*	G046
		QC-JSDJ2XR-CHP	DX*U		○	○						○		○	✓		without*	G047
		JSDJ2XR/L	DX*U	○	○		○								✓		without	G047
		JPDJ2XR/L	DX*U	○	○		○									✓	without	G048
		JSDJ2XR/L-CHP	DX*U		○		○							○	✓		without	G048
		JSDJXR-F	DX*U			○		○							✓		with	G049
		JSDJXR/L	DX*U						○						✓		with	C057
		JS-SDUXL	DX*U							○	○				✓		-	G050
62.5°		QC-JSDNXR-CHP	DX*U		○	○						○		○	✓		without*	G051

* When using stepped-head shank, the “Offset” will be “with”.

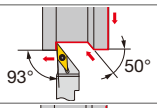
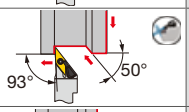
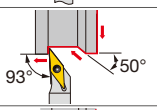
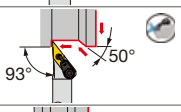
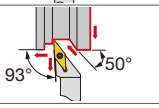
DN** inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.625 x 0.625	Size of square shanks (in) 0.750 x 0.750	Holder TUNGTJET (Through-coolant)	Clamping style Lever-lock	Clamping style Double-clamp	Offset	Page
93°		**ADJNR/L**	DN**33/43/44		○			✓	with	C036
		**PDJNR/L**	DN**33/43/44	○	○		✓		with	G052
		**PDJNR/L-CHP**	DN**33/43/44		○	○	✓		with	C039
62.5°		**ADPNN**	DN**43		○			✓	with	C049
107.5°		**ADQNR/L**	DN**33/43/44		○			✓	with	C045

TN** inserts

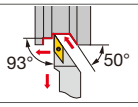
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.625 x 0.625	Size of square shanks (in) 0.750 x 0.750	Holder TUNGTJET (Through-coolant)	Clamping style Lever-lock	Clamping style Double-clamp	Offset	Page
93°		**ATJNR/L**	TN**33		○			✓	with	C088
91°		**ATGNR/L**	TN**33		○			✓	with	C091
		**PTGNR/L**	TN**23		○		✓		with	C092
		**PTGNR/L-CHP**	TN**23/33		○	○	✓		with	C093
		**ATFNR/L**	TN**33		○			✓	with	C094
105°		**ATQNR/L**	TN**33		○			✓	with	C096

VB** inserts

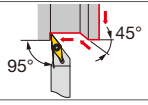
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.625 x 0.750	0.750 x 0.750	Holder MODUMTURN (Modular head)	Holder TUNGTJET (Through-coolant)	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
93°		**QC-JSVJ2BR**	VB**22		○	○				○		✓		without*	G058
		**QC-JSVJ2BR-CHP**	VB**22		○	○				○	○	✓		without*	G058
		**JSVJ2BR/L**	VB**22	○	○		○					✓		without	G058
		**JSVJ2BR/L-CHP**	VB**22		○		○				○	✓		without	G059
		**JSVJBR/L**	VB**22						○			✓		with	G060

* When using stepped-head shank, the “Offset” will be “with”.

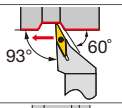
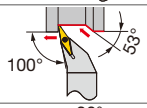
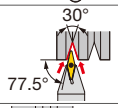
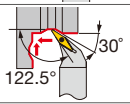
VC** inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.625 x 0.625	0.750 x 0.750	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
93°		**SVJCR**	VB**33	○	○	✓		with	C113

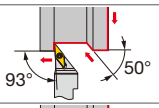
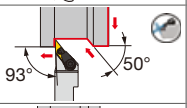
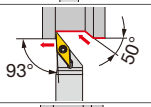
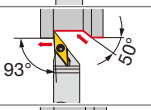
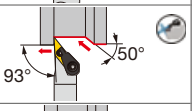
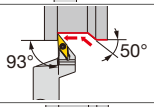
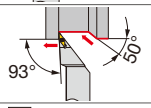
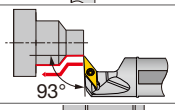
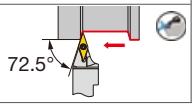
VP** inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
93°		**JSVL2PR/L**	VP**22	○	○		✓		without	G062

YWMT inserts

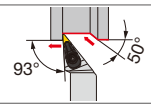
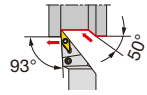
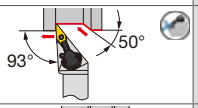
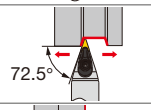
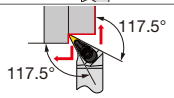
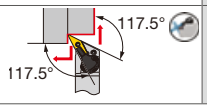
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.625 x 0.625	Size of square shanks (in) 0.750 x 0.750	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
93°		**SYJBR/L**	YWMT16		○	✓		with	C130
100°		**SYHBR/L**	YWMT16		○	✓		with	C132
77.5°		**SYIBN**	YWMT16		○	✓		with	C131
122.5°		**SYQBR/L**	YWMT16		○	✓		with	C131

VXGU inserts

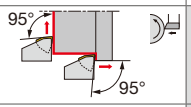
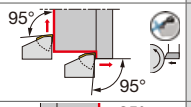
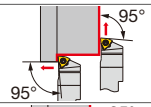
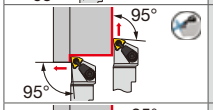
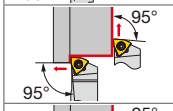
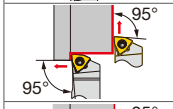
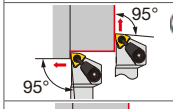
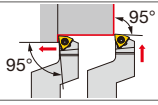
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.625 x 0.750	0.750 x 0.750	Cylindrical shank (shank dia.) ø0.625	ø0.750	ø1.000	Holder MODULTURN (Modular head)	Holder TUNGTJET (Through-coolant)	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
93°		**QC-JSVJ2XR**	VXGU		○	○							○		✓		without*	G064
		**QC-JSVJ2XR-CHP**	VXGU		○	○							○	○	✓		without*	G064
		**JSVJ2XR/L**	VXGU	○	○		○								✓		without	G065
		**JPVJ2XR/L**	VXGU	○	○		○									✓	without	G065
		**JSVJ2XR/L-CHP**	VXGU		○		○							○	✓		without	G066
		**JSVJXR-F**	VXGU			○		○							✓		with	G067
		**JSVJXR/L**	VXGU						○						✓		with	C119
		**JS-SVUXL**	VXGU							○	○	○			✓		–	C120
72.5°		**QC-JSVVXR-CHP**	VXGU		○	○							○	○	✓		without*	G067

* When using stepped-head shank, the “Offset” will be “with”.

V/YN** inserts

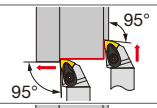
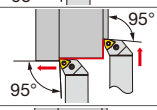
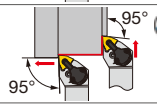
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.625 x 0.625	Size of square shanks (in) 0.750 x 0.750	Holder TUNGTJET (Through-coolant)	Clamping style Lever-lock	Clamping style Double-clamp	Offset	Page
93°		**AVJNR/L**	VN**2.33, V/YN**33		○			✓	with	C103
		**PVJNR/L**	VN**2.33	○			✓		with	C104
		**PVJNR/L-CHP**	VN**2.33, V/YN**33		○	○	✓		with	C105
72.5°		**AVVNN**	VN**2.33, V/YN**33		○			✓	with	C107
117.5°		**AVQNR/L**	VN**2.33, V/YN**33		○			✓	with	C110
		**PVQNR/L-CHP**	V/YN**33		○	○	✓		with	C112

WXGU inserts

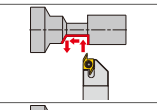
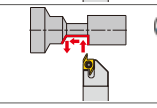
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.625 x 0.750	0.750 x 0.750	Holder MODUMTURN (Modular head)	Holder Y-axis feed	Holder TUNGTJET (Through-coolant)	Clamping style Screw-on	Clamping style Back-clamp	Offset	Page
95°		**QC-JSWL2XR-Y**	WXGU		○	○				○	○		✓		without*	G069
		**QC-JSWL2XR-Y-CHP**	WXGU		○	○				○	○	○	✓		without*	G069
		**QC-JSWL2XR**	WXGU		○	○				○			✓		without*	G070
		**QC-JSWL2XR-CHP**	WXGU		○	○				○		○	✓		without*	G070
		**JSWL2XR/L**	WXGU	○	○		○						✓		without	G071
		**JPWL2XR/L**	WXGU	○	○		○							✓	without	G071
		**JSWL2XR/L-CHP**	WXGU		○		○					○	✓		without	G072
		**JSWLXR-F**	WXGU			○		○					✓		with	G073

* When using stepped-head shank, the “Offset” will be “with”.

WN** inserts

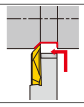
Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.500 x 0.500	0.500 x 0.625	0.750 x 0.750	Holder MODUMTURN (Modular head)	TUNGTJET (Through-coolant)	Clamping style Lever-lock	Double-clamp	Offset	Page
95°		**AWLNR/L**	WN**43/33			○				✓	with	C121
		**PWLNR/L**	WN**33			○			✓		with	C123
		**PWLNR/L-CHP**	WN**43/33			○		○	✓		with	C124

J10E inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.500 x 0.500	0.500 x 0.625	0.750 x 0.750	Holder MODUMTURN (Modular head)	TUNGTJET (Through-coolant)	Clamping style Screw-on	Back-clamp	Offset	Page
Back turning		**QC-JSEGR**	J10ER...	○	○		○		✓		without*	G078
		**QC-JSEGR-CHP**	J10ER...	○	○		○	○	✓		without*	G078

* When using stepped-head shank, the “Offset” will be “with”.

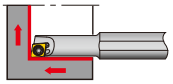
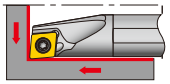
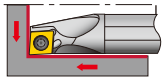
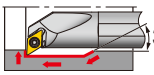
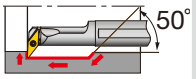
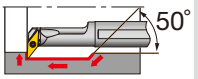
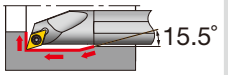
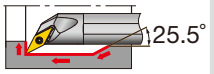
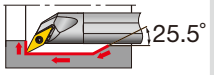
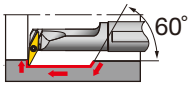
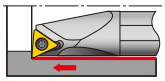
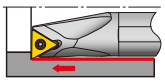
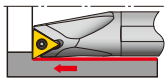
JTB inserts

Cutting edge angle	Application	Designation	Insert	Size of square shanks (in) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	Clamping style Screw-on	Back-clamp	Offset	Page
Back turning		**JSTBR/L**	JTBR/L30	○	○	○	✓		without	G081

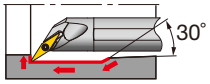
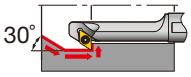
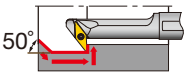
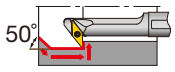
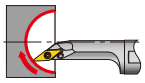
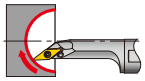
Miniature Internal Turning - Quick Guide

Positive type

StreamJet-Bar

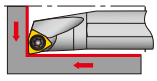
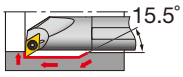
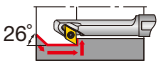
Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	Y-PRO	Min. bore diameter DMIN (in) 0 0.125 0.250 0.375 0.500 0.625 0.750 0.875 1.000 1.250	Page
Boring & Internal facing		**SEXPR/L**	EP...	Steel Carbide	○	✓		ø0.250" ø0.250"	D048
		**SCLCR/L**	CC...	Steel Carbide	○	✓		ø0.375" ø1.250" ø0.500" ø1.250"	D018
		**SCLPR/L**	CP...	Steel Carbide	○	✓		ø0.500" ø0.875" ø0.500" ø0.875"	D022
Boring & internal profiling		**SDUCR/L**	DC...	Steel Carbide	○	✓		ø0.625" ø1.000" ø0.625" ø1.000"	D032
		**SVUCR/L**	VC...	Steel	○	✓		ø0.875" ø1.000"	D072
		**SVUBR/L**	VB...	Steel	○	✓		ø1.000"	D068
		**SDQCR/L**	DC...	Steel	○	✓		ø0.625" ø0.875"	D035
		**SVQCR/L**	VC...	Steel	○	✓		ø0.688" ø1.000"	D074
		**SVQBR/L**	VB...	Steel	○	✓		ø1.000"	D069
		**SYUBR/L**	YW...	Steel Carbide	○		✓	ø1.000" ø0.875" ø1.000"	D088
Boring		**STUPR/L**	TP...	Steel Carbide	○	✓		ø0.438" ø1.250" ø0.438" ø0.875"	D060
Blind hole boring		**STFPR/L**	TP...	Carbide	○	✓		ø0.500" ø1.000"	D057
		**STFCR/L**	TC...	Carbide	○	✓		ø0.500" ø1.000"	D056

StreamJet-Bar

Appli-cation	Style	Designation	Insert	Material	Through coolant	ISO Insert	Y-PRO	Min. bore diameter DMIN (in) 0 0.125 0.250 0.375 0.500 0.625 0.750 0.875 1.000	Page
Internal undercut & profiling		**SYQBR/L**	YW...	Steel Carbide	○		✓	ø0.750" ø0.875" ø0.750" ø0.875"	D089
Back boring		**SDZCR/L**	DC...	Steel	○	✓		ø0.875"	D037
		**SVZCR/L**	VC...	Steel	○	✓		ø0.750" ø1.000"	D076
		**SVZBR/L**	VB...	Steel	○	✓		ø1.000"	D071
Internal sphere cutting		**SVJCR/L**	VC...	Steel	○	✓		ø1.000"	D075
		**SVJBR/L**	VB...	Steel	○	✓		ø1.000	D070

Double-sided insert with positive cutting edges

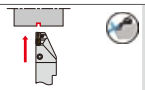
MiniForce-Turn

Appli-cation	Style	Designation	Insert	Material	Through coolant	MINIFORCE-TURN	Min. bore diameter DMIN (in) 0 0.125 0.250 0.375 0.500 0.625 0.750 0.875 1.000	Page
Boring & internal facing		**SWLXR/L**	WX*U...	Steel Carbide	○	✓	ø0.500" ø1.000" ø0.500" ø1.000"	D081
Boring & internal profiling		**SDXXR/L**	DX*U...	Steel Carbide	○	✓	ø0.625" ø1.000"	D040
Back boring		**SDZXR/L**	DX*U...	Steel	○	✓	ø0.625" ø0.875"	D041

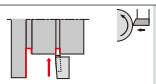
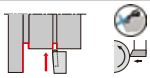
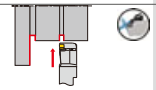
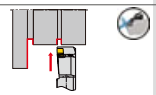
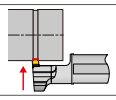
Miniature Grooving - Quick Guide

External Grooving

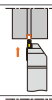
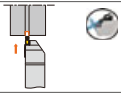
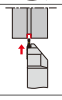
MiniVLockGroove

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	Holder ModuMiniTurn (Modular head)	TungTJet (Through-coolant)	Direct connection	Groove width (in) 0	0.0313	0.0938	Max. groove depth (in)	Page
	**QC12-SVER/L-CHP** Modular head	VGP...		○	○		○	○	○	0.013"		0.039"	0.079" - 0.157"	G083
	**SVER/L**	VGP...	○	○						0.020"		0.039"	0.098" - 0.157"	G083
	**SVER/L-CHP**	VGP...		○				○	○	0.020"		0.039"	0.098" - 0.157"	G084

TetraMini-Cut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.375 x 0.500	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	Cylindrical shank (shank dia.) ø0.500	ø0.625	ø0.750	ø1.000	Holder ModuMiniTurn (Modular head)	Y-axis feed	TungTJet (Through-coolant)	Direct connection
	**QC12-STCR/L-Y** Modular head	TC*18R/L...			○	○							○	○		
	**QC12-STCR/L-Y-CHP** Modular head	TC*18R/L...			○	○							○	○	○	○
	**QC12-STCR/L** Modular head	TC*18R/L...			○	○							○			
	**QC12-STCR/L-CHP** Modular head	TC*18R/L...			○	○							○		○	○
	**STCR/L-18**	TC*18R/L...	○		○		○	○								
	**STCR/L-18-CHP**	TC*18R/L...			○	○									○	○
	**JS-STCL18**	TC*18R/L...								○	○	○				

TetraForce-Cut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Holder ModuMiniTurn (Modular head)	TungTJet (Through-coolant)	Direct connection	Groove width (in) 0	0.0313	0.0625	0.0938	0.1250	0.1563	0.1875
	**STCR/L-27**	TC*27...	○	○	○	○				0.020"				0.125"		
	**STCR/L-27-CHP**	TC*27...		○		○		○	○	0.020"				0.125"		
	**STCR/L-38**	TCL38...				○						0.059"			0.157"	

Groove width (in)							Max. groove depth (in)	Page
0	0.0313	0.0625	0.0938	0.1250	0.1563	0.1875		
0.013"				0.125"			0.0315" - 0.138"	G086
0.013"				0.125"			0.0315" - 0.138"	G086
0.013"				0.125"			0.0315" - 0.138"	G087
0.013"				0.125"			0.0315" - 0.138"	G087
0.013"				0.125"			0.0315" - 0.138"	G088
0.013"				0.125"			0.0315" - 0.138"	G088 G089
0.013"				0.125"			0.0315" - 0.138"	G089

Max. groove depth (in)	Page
0.039" - 0.252"	G099
0.039" - 0.252"	G099 G100
0.354" - 0.394"	G105

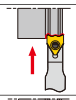
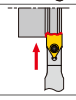
Miniature Grooving - Quick Guide

External Grooving

GTGN

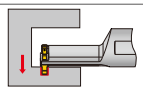
Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Groove width (in) 0 0.0313 0.0625 0.0938 0.1250 0.1563 0.1875
	**CER/L**	GTGN-16E...				○	0.039" — 0.089"

TungHeavyGroove

Application	Designation	Insert	Square shank (height x width) 0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Groove width (in) 0 0.394 0.787 1.181 1.575 1.969	Max. groove depth (in)	Page
	**FPGN**	PSGB...	○	○	○	0.394" — 0.984"	-	G111
	**SPGN**	PSGB...	○	○	○	0.394" — 0.984"	-	G112

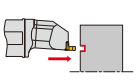
Internal Grooving

AddInternalCut

Application	Designation	Insert	Cylindrical shank ø0.500	ø0.625	Groove width (in)	Max. groove depth (in)	Through coolant
	**A/E-STCIR/L**	TCIG10/12...	○	○	0.020" - 0.118"	0.039" - 0.118"	○

Face Grooving

TetraMini-Cut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	Cylindrical shank ø0.625	ø0.750	Groove width (in)	Max. groove depth (in)
	**JS-STCFL18**	TCF18L...				○	○	0.020" - 0.118"	0.039" - 0.118"
	**STCFVR-18**	TCF18L...	○	○	○			0.020"- 0.118"	0.039" - 0.118"

	Max. groove depth (in)	Page
	0.049" - 0.071"	F105

Min. bore diameter DMIN (in)

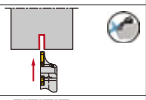
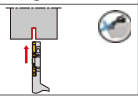
0	0.125	0.250	0.375	0.625	0.750	0.875	1.000	Page
		ø0.438"				ø0.813"		G117

Min. face groove outside diameter (in)

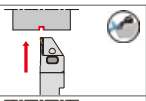
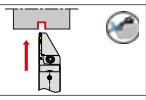
0	0.125	0.250	0.375	0.625	0.750	0.875	1.000	Page
	ø0.236"							G137
	ø0.236"							G137

Parting

DuoJustCut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Groove width (in)	Holder TUNGTJET (Through-coolant)
	**JSXXR/L**	JXP...	○	○	○	○	0.024" - 0.079"	
	**JSXXR/L-CHP**	JXP...		○	○		0.024" - 0.079"	○
	**JSXXR/L-S**	JXP...	○	○			0.024" - 0.079"	
	**JSXXR/L-S-CHP**	JXP...		○	○		0.024" - 0.079"	○

TungCut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	Groove width (in)	Holder MODUMTURN (Modular head)	TUNGTJET (Through-coolant)	Direct connection
	**QC12-JTTER/L-CHP** Modular head	DG.../ SG...		○	○			0.047" - 0.079"	○	○	○
	**J*TER/L**	DG.../ SG...		○		○		0.079" - 0.118"			
	**JCTER/L-CHP**	DG.../ SG...		○		○	○	0.079"		○	○
	**CHGP**	DG.../ SG...					○	0.079" - 0.157"			
	**CGP**	DG.../ SG...					○	0.055" - 0.315"			

AddForceCut

Application	Designation	Insert	Square shank 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	Groove width (in)	Holder MODUMTURN (Modular head)	TUNGTJET (Through-coolant)	Direct connection
	**QSG**	QG...					○	0.079" - 0.157"			
	**QSP**	QG...					○	0.079" - 0.157"			

Max. parting diameter (in)

0 0.250 0.500 0.750 1.000 1.250 1.500 1.750 2.000	Page
ø0.236" ø0.787"	G142
ø0.236" ø0.787"	G143
ø0.236" ø0.787"	G142
ø0.236" ø0.787"	G143

Max. parting diameter (in)

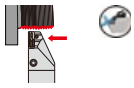
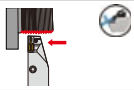
0 0.625 1.250 1.875 2.500 3.125 3.750 4.375 5.000	Page
ø0.787"	G148
ø0.945" ø1.260"	G149 G150
ø0.980" ø1.260"	G151
ø2.047" ø3.228"	G152
ø1.024" ø4.724"	G152

Max. parting diameter (in)

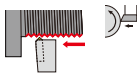
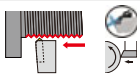
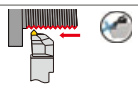
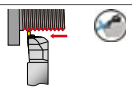
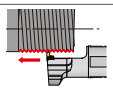
0 0.625 1.250 1.875 2.500 3.125 3.750 4.375 5.000	Page
ø2.047" ø3.228"	G164
ø2.047" ø4.724"	G163

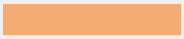
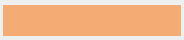
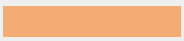
External Threading

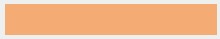
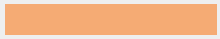
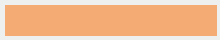
MiniVLockGroove

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	Corner R (in)	Holder MODUMTURN (Modular head)	TUNGTJET (Through-coolant)	Direct connection
	**QC12-SVER/L-CHP** Modular head	VGT10F...		○	○	0.020" - 0.039"	○		○
	**SVER/L**	VGT10F...	○	○		0.020" - 0.039"			
	**SVER/L-CHP**	VGT10F...		○		0.020" - 0.039"			○

TetraMini-Cut

Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.375 x 0.500	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	Cylindrical shank (shank dia.) ø0.500	ø0.625	ø0.750	ø1.000	Corner R (in)
	**QC12-STCR/L-Y** Modular head	TCT18R/L...			○	○							0.002" - 0.008"
	**QC12-STCR/L-Y-CHP** Modular head	TCT18R/L...			○	○							0.002" - 0.008"
	**QC12-STCR/L** Modular head	TCT18R/L...			○	○							0.002" - 0.008"
	**QC12-STCR/L-CHP** Modular head	TCT18R/L...			○	○							0.002" - 0.008"
	**STCR/L-18**	TCT18R/L...	○		○		○	○					0.002" - 0.008"
	**STCR/L-18-CHP**	TCT18R/L...			○	○							0.002" - 0.008"
	**JS-STCL18**	TCT18R/L...								○	○	○	0.002" - 0.008"

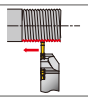
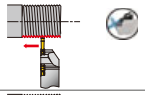
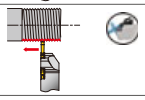
	Threads per inch										
	0	16	32	48	64	80	96	112	128	144	Page
	12				64						G168
	12				64						G168
	12				64						G168

	Holder				Threads per inch										
	MODULMTURN (Modular head)	Y-axis feed	TUNGTJET (Through-coolant)	Direct connection	0	16	32	48	64	80	96	112	128	144	Page
	○	○			8				64						G170
	○	○	○	○	8				64						G170
	○				8				64						G171
	○		○	○	8				64						G171
					8				64						G172
			○	○	8				64						G172 G173
					8				64						G173

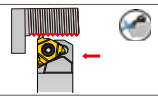
Miniature Threading - Quick Guide

External Threading

DuoJust-Cut

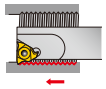
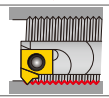
Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	Corner R (in)	Holder TUNGTJET (Through-coolant)	Holder Direct connection
	**JSXXR/L**	JXTG12...	○	○	○	○	0.002" - 0.004"		
	**JSXXR/L-CHP**	JXTG12...		○	○		0.002" - 0.004"	○	○
	**JSXXR/L-S**	JXTG12...	○	○			0.002" - 0.004"		
	**JSXXR/L-S-CHP**	JXTG12...		○	○		0.002" - 0.004"	○	○

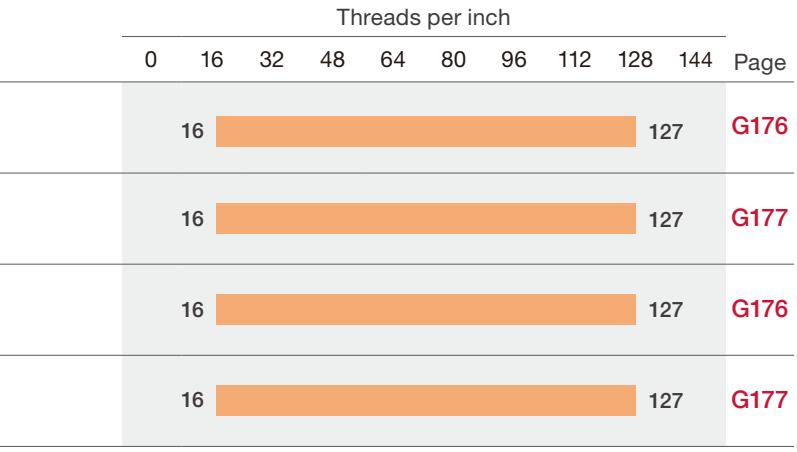
TungThread

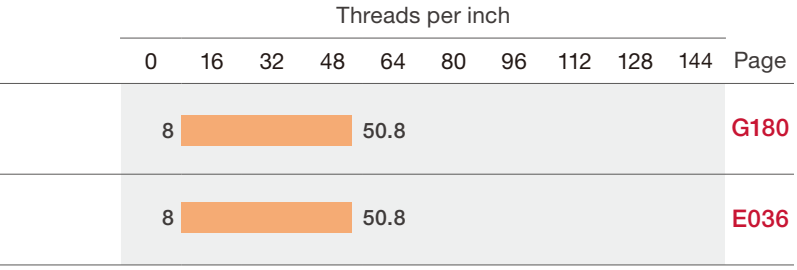
Application	Designation	Insert	Square shank (height x width) 0.375 x 0.375	0.500 x 0.500	0.500 x 0.625	0.625 x 0.625	0.750 x 0.750	Corner R (in)	Holder MODUMTURN (Modular head)	Holder TUNGTJET (Through-coolant)	Holder Direct connection
	**JSE2R16-CHP**	16ER...		○		○		0.002" - 0.009"		○	○
	**CER/L**	16ER/L...					○	0.002" - 0.009"		○	○

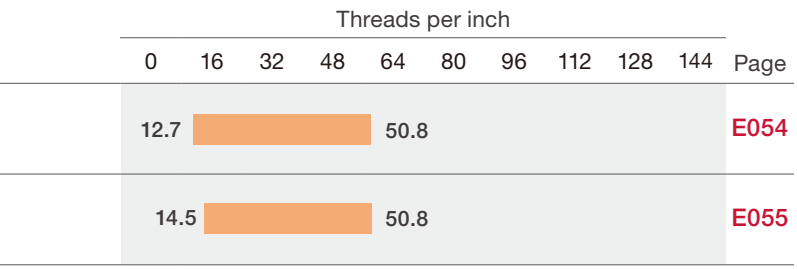
Internal Threading

TungThread

Application	Designation	Insert	Min. bore diameter DMIN (in)	Corner R (in)
	**SIR**	6/8IR...	ø0.640" - ø1.800"	0.002" - 0.007"
	**SNR**	6IR...	ø0.750"	0.002" - 0.004"


Threads per inch
0 16 32 48 64 80 96 112 128 144
Page
16 127
G176
16 127
G177
16 127
G176
16 127
G177

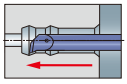
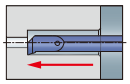
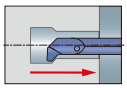
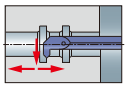
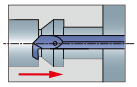
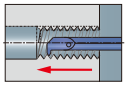
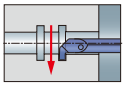
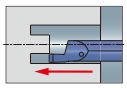
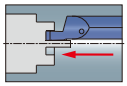
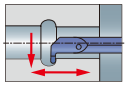

Threads per inch
0 16 32 48 64 80 96 112 128 144
Page
8 50.8
G180
8 50.8
E036


Threads per inch
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Page
12.7 50.8
E054
14.5 50.8
E055

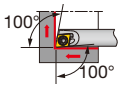
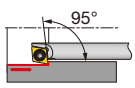
Miniature Internal Turning - Quick Guide

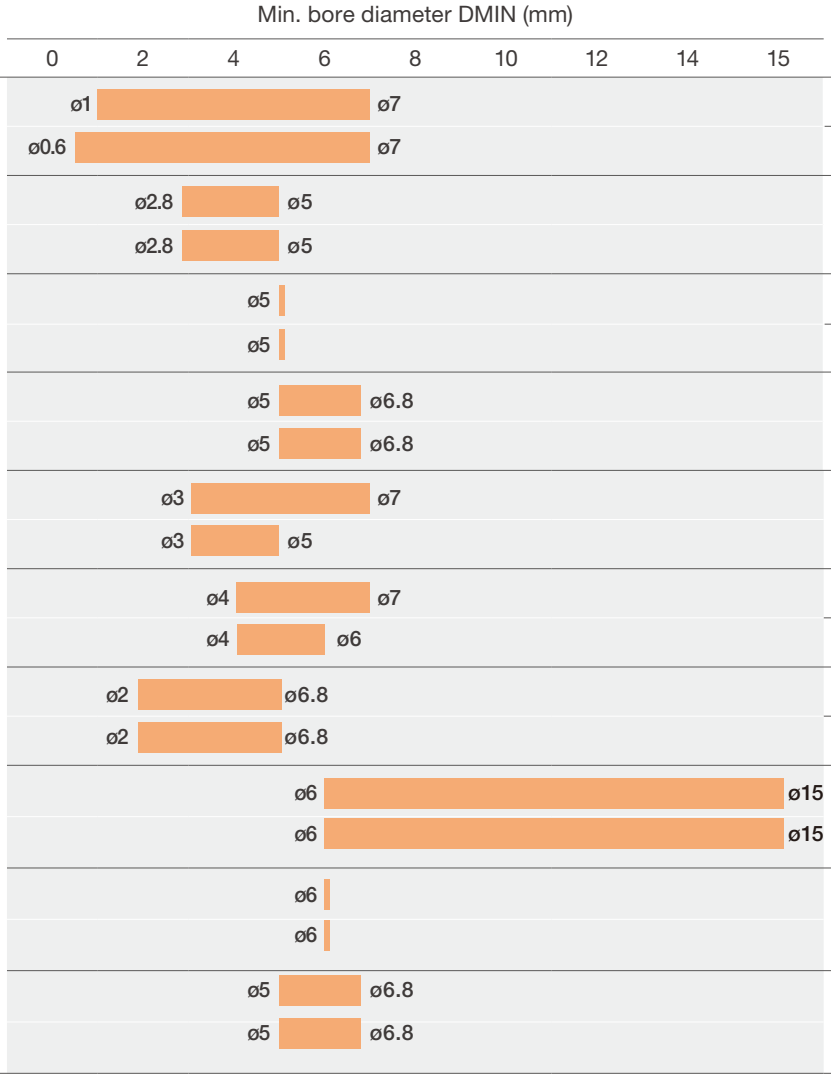
TinyMini-Turn

Solid carbide tools for small diameters turning

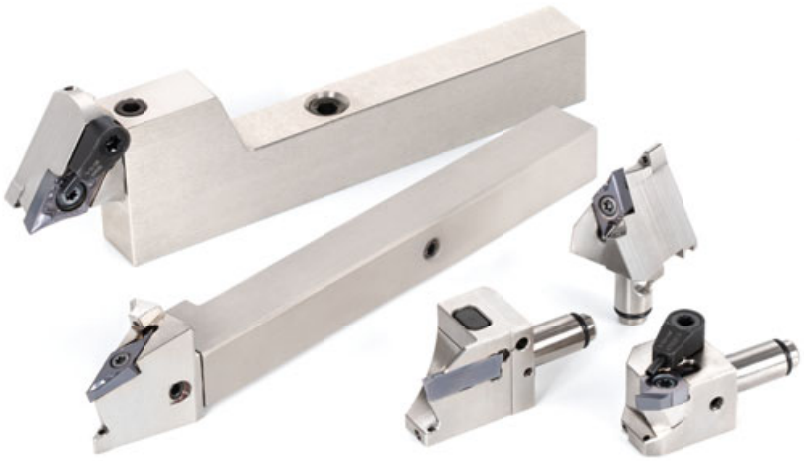
Application		Description	Material	Through coolant	Cylindrical shank ø4	Cylindrical shank ø7	Groove width
Boring, profiling & chamfering		**TBT**	Carbide		○	○	-
		JBT	Carbide	○	○	○	
Internal, Face grooving		**TBP**	Carbide		○	○	-
		JBP	Carbide	○	○	○	
Back boring & chamfering		**TBU**	Carbide			○	-
		JBU	Carbide	○		○	
Boring & 45°chamfering		**TBC**	Carbide			○	-
		JBC	Carbide	○		○	
Back boring		**TBB**	Carbide		○	○	-
		JBB	Carbide	○	○	○	
Threading (Metric thread)		**TBI**	Carbide		○	○	-
		JBI	Carbide	○	○	○	
Internal Grooving		**TBG**	Carbide		○	○	0.5 - 2
		JBG	Carbide	○	○	○	
Face grooving		**TBF**	Carbide			○	1 - 3
		JBF	Carbide	○		○	
Face grooving (for shaft)		**TBS**	Carbide			○	2
		JBS	Carbide	○		○	
Boring & profiling (full radius type)		**TBR**	Carbide			○	1
		JBR	Carbide	○		○	

Indexable tools for small diameters turning

Application		Description	Cylindrical shank ø7	Through coolant	Min. bore diameter DMIN (mm) 0 2 4 6 8 10	Page
Boring & internal facing		**SEXPR**	○	○	ø5 ø6	G133
Back boring		**SEZPR**	○	○	ø5.5	G133


Min. bore diameter DMIN (mm)
0
2
4
6
8
10
12
14
15
Page
ø1
ø7
G125
ø0.6
ø7
G123, G124
ø2.8
ø5
G126
ø2.8
ø5
ø5
G126
ø5
G127
ø5
ø6.8
G127
ø5
ø6.8
ø3
ø7
G128
ø3
ø5
ø4
ø7
G128
ø4
ø6
G129
ø2
ø6.8
G129
ø2
ø6.8
G130
ø6
ø15
G131
ø6
ø15
ø6
G132
ø6
ø5
ø6.8
G132
ø5
ø6.8

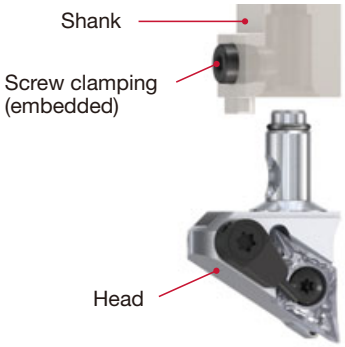
MODUMINI TURN

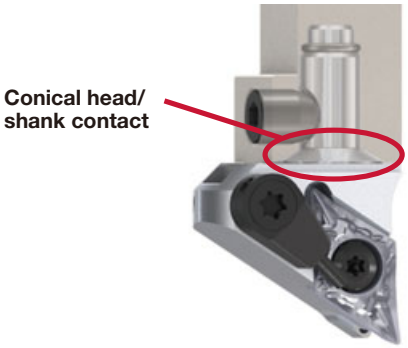


Modular style Swiss turning tool system facilitates tool changes with high repeatability

Unique coupling design

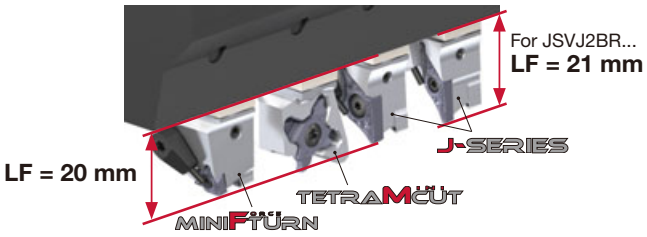
Simply loosen the clamping screw for easy tool exchanges.
Unique coupling design allows extremely high repeatability.





Benefits of Y-axis feed

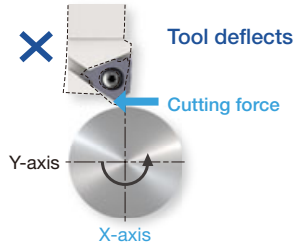
Designed with common functional lengths (LF), the cutting heads allow easy tool changes without removing the shank from the tool post.

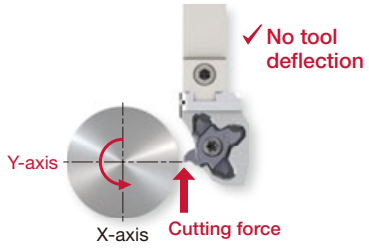


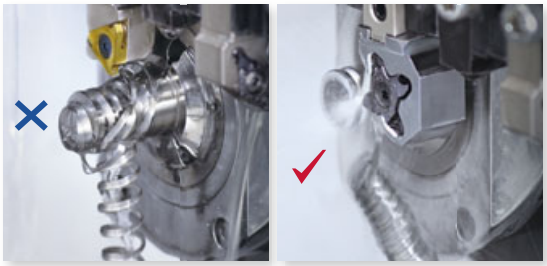
Benefits of Y-axis feed

No chip entanglements — Chips are directed downward and away from the cutting zone

Conventional X-axis feed	Y-axis feed	Conventional X-axis feed	Y-axis feed







Reference pages : G030 -, G083 -, G148, G168 -
Shank, Accessory : G115, G116

TUNGTURN TJET



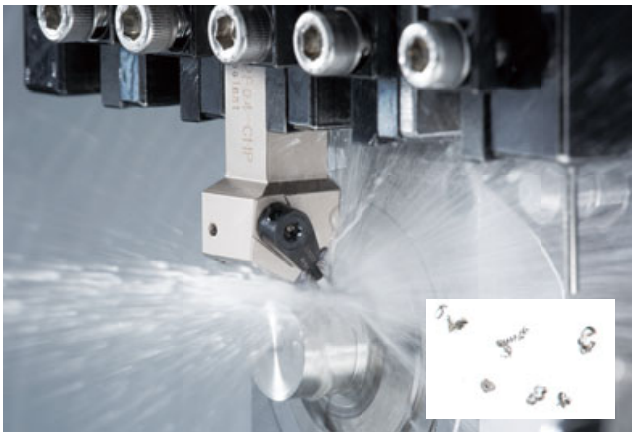
Thru-coolant holder system

High pressure coolant is supplied through the holder to facilitate smooth chip evacuation, improved chip breaking and reduced machine down-time

External coolant supply at normal pressure



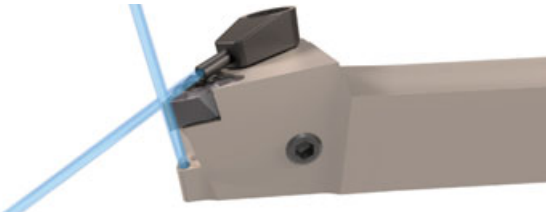
High pressure coolant (7 MPa)

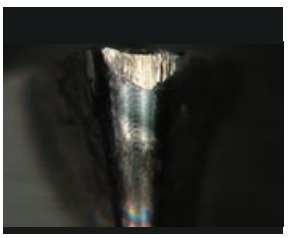


Coolant jets from two outlets ensure high cutting efficiency and extended tool life

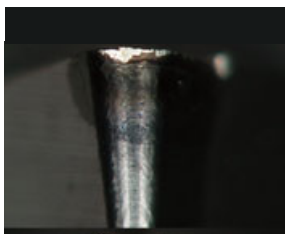
Directly to the cutting edge

Reliable chip control
Reduces crater and notch wears

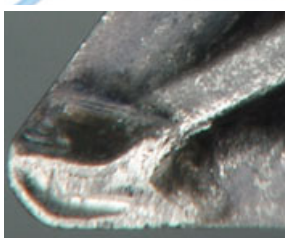




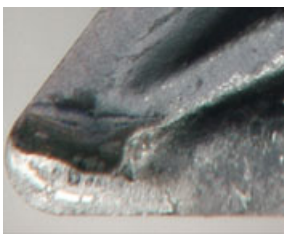
Excessive wear with external coolant supply (at normal pressure)



High pressure coolant (7 MPa)



Excessive crater wear with external coolant supply (at normal pressure)

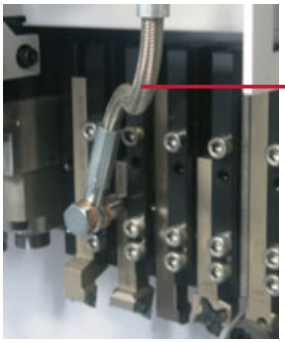


High pressure coolant (7 MPa)

Reference pages: G030 -, G083 -, G143 -, G168 -

Tube-free design streamlines tool setup.
Through-coolant supply enables high productivity

Conventional

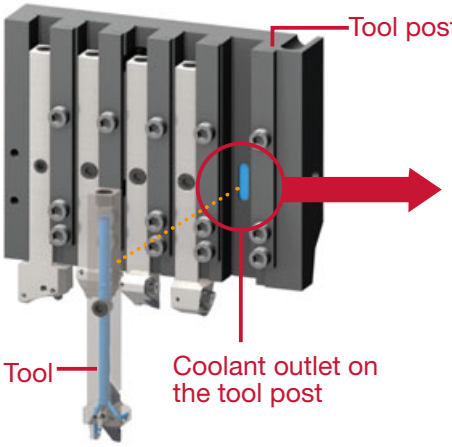


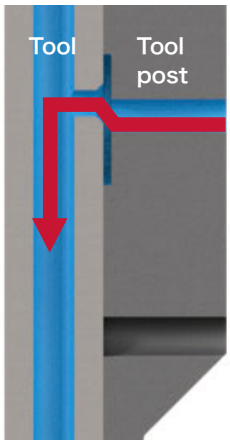
DirectTung-Jet system

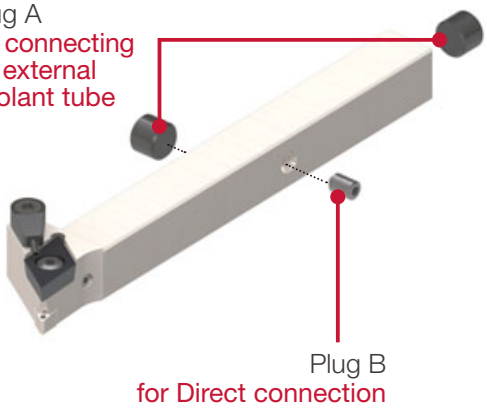


No need for coolant tube setup. Eliminates chip entanglement on tubes and streamlines tool replacement.

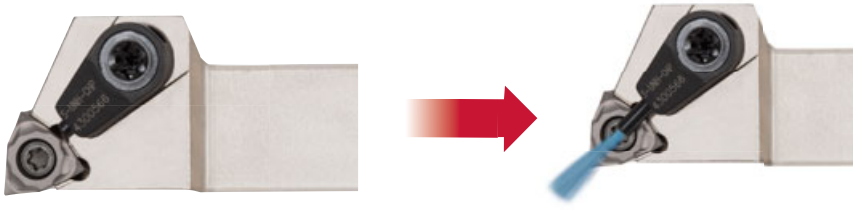
Coolant is supplied from the tool post directly to the tools.





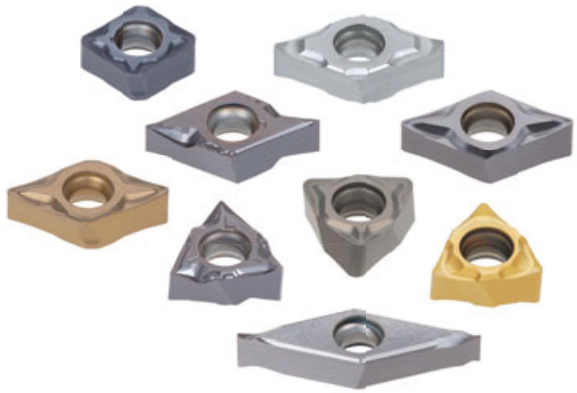


Use a non-coolant-through tool when a coolant supply is not needed through the tool.



Nozzle tube delivers coolant directly to the cutting edge

MINIFORCE TURN





Economical double-sided positive insert

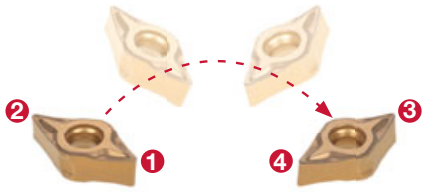
Innovative geometry and seat interface ensures stability and high performance.

Insert

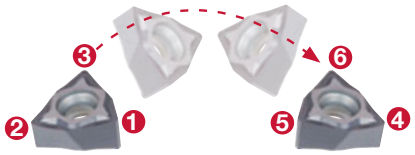
CXMU0603... 4 edges, rhombic 80°



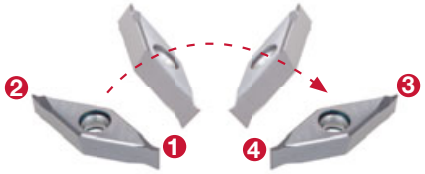
DXM/GU0703... 4 edges, rhombic 55°



WXGU0403... 6 positive cutting edges



VXGU09T2... 4 positive cutting edges



High rake angle

WXGU0403...

External turning



External turning

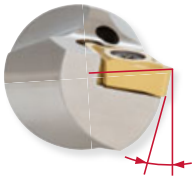


DXGU0703...

Internal turning



Internal turning



Reference pages : G046 -, G064 -, G069 -

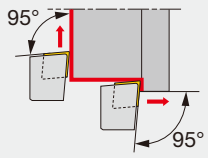
CC

Rhombic, 80°
with hole
Positive 7°

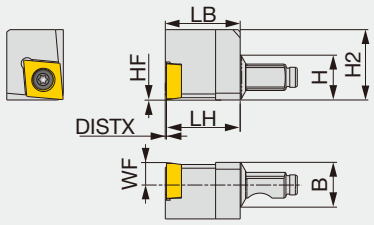
MODUMINI TURN

QC12-JSCL2CR-Y

Screw-on Y-axis turning modular head with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**



Without offset

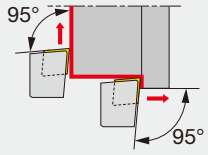
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque
QC12-JSCL2CR09-Y	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.780")	18.6 (0.732")	0.3 (0.012")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)

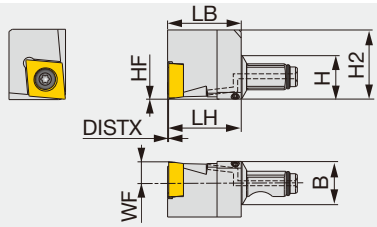
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC12-JSCL2CR-Y-CHP

Screw-on Y-axis turning modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

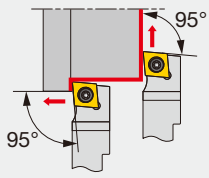
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSCL2CR09-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.780")	18.6 (0.732")	0.3 (0.012")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)

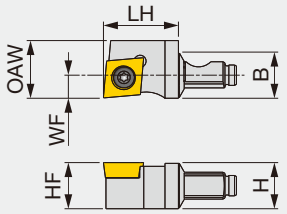
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC12-JSCL2CR

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSCL2CR09	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

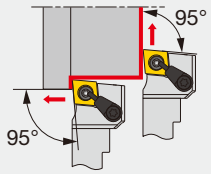
SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-JSCL2CR09-Y, QC12-JSCL2CR09	CSTB-4SD	T-8F	-
QC12-JSCL2CR09-Y-CHP	CSTB-4SD	T-8F	ORSS-0454.5X1.0NBR70

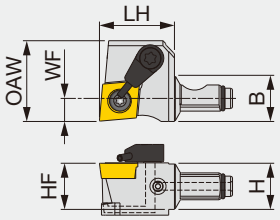
Reference pages : QC12-JSCL2CR-Y, QC12-JSCL2CR-Y-CHP, QC12-JSCL2CR:
Inserts → B112 -, CBN → B191, PCD → B213, Shank, Accessory → G115, G116

QC12-JSCL2CR-CHP

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSCL2CR09-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	21 (0.827")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSCL2CR09-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

K

Application areas	medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX110	TH10	KS05F
Breaker Shape	NS	W20	AL
Cutting conditions	B022		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : QC12-JSCL2CR-CHP: Inserts → B112 -, CBN → B191, PCD → B213
Shank, Accessory → G115, G116

CC

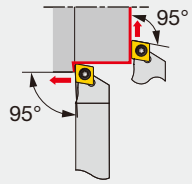


Rhombic, 80°
with hole
Positive 7°

J-SERIES

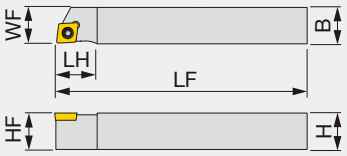
JSCL2CR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

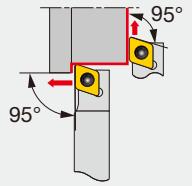
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCL2CR/L062	0.375	0.375	5.000	0.438	0.375	0.375	0.008	CC**21.5...	0.89
JSCL2CR/L082	0.500	0.500	5.000	0.438	0.500	0.500	0.008	CC**21.5...	0.89
JSCL2CR/L103	0.625	0.625	5.000	0.625	0.625	0.625	0.008	CC**32.5...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	1.2
JSCL2CR/L1212F06	12	12	85	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212X06	12	12	120	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

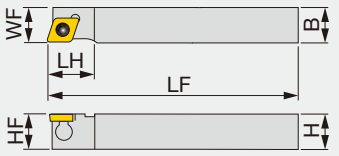
JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	0.9
JTCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS







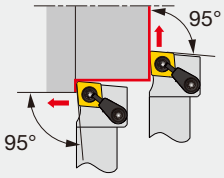

Designation	Clamping screw	Clamp	Clamping screw	Wrench	Wrench 1	Wrench 2 (Optional)
JSCL2CR/L062/082, JSCL2CR/L**06	CSTB-2.5	-	-	-	T-8F	(T-8L)
JSCL2CR/L103, JSCL2CR/L**09	CSTB-4SD	-	-	-	T-8F	(T-8L)
JTCL2CR/L**06	-	JCP-2	JDS-3525	P-2F	-	-
JTCL2CR/L**09	-	JCP-3	JDS-5040	P-2.5F	-	-

Reference pages : JSCL2CR/L, JTCL2CR/L : Inserts → B112 -, CBN → B191, PCD → B213

JSCL2CR-CHP

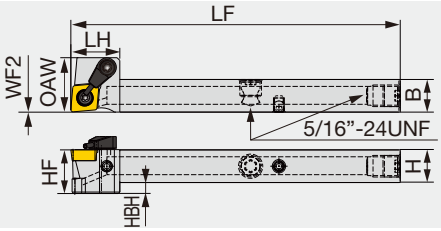
Direct connection

Screw-on toolholder without offset, 95° approach angle for positive 80° rhombic inserts, high pressure coolant compatible



Cutting edge style **L2**





Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	HBH	WF2	OAW	RE	Insert	Torque
JSCL2CR083X-CHP	0.500	0.500	4.750	0.709	0.500	0.031	0	0.787	0.008	CC** 32.5...	0.89
JSCL2CR103X-CHP	0.625	0.625	4.750	0.709	0.625	-	0	0.787	0.008	CC** 32.5...	0.89

Metric	H	B	LF	LH	HF	HBH	WF2	OAW	RE	Insert	Torque*
JSCL2CR1212X09B-CHP	12	12	120	18	12	1.5	0	20	0.2	CC**09T3...	1.2
JSCL2CR1616X09-CHP	16	16	120	18	16	-	0	20	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius

SPARE PARTS









Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench 1	DirectJet plug	Wrench 2
JSCL2CR**-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

INSERT SELECTION

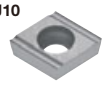
P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01 	JP 	JS 	JS 
Cutting conditions	G114			

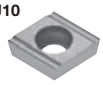
M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01 	JP 	JS 	JS 
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10 
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10 
Cutting conditions	G114

K

Application areas	medium to finish cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B020

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX110	TH10	KS05F
Breaker Shape	NS 	W20 	AL 
Cutting conditions	B022		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS 	JS 
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN 	CBN 
Cutting conditions	B026	

Reference pages : JSCL2CR-CHP: Inserts → B112 -, CBN → B191, PCD → B213

CC

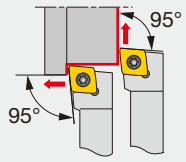


Rhombic, 80°
with hole
Positive 7°

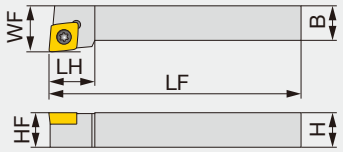
J-SERIES

JSCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



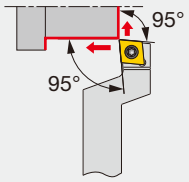
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCLCR/L0808H06	8	8	100	12	8	10	0.4	CC**0602...	1.2
JSCLCR/L1010H06	10	10	100	12	10	12	0.4	CC**0602...	1.2
JSCLCR/L1212H09	12	12	100	16	12	16	0.8	CC**09T3...	1.2
JSCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

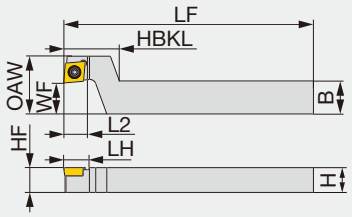
Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JSCLCR-F

Screw-on stepped-head toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSCLCR1216F09-F15	12	16	85	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1216X09-F15	12	16	120	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1620X09-F15	16	20	120	12	27	12.5	16	15	28	0.2	CC**09T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS



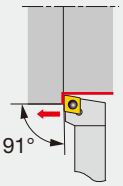


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSCLCR/L**H06	CSTB-2.5	T-8F	-
JSCLCR/L**H09	CSTB-4SD	T-8F	-
JSCLCR**F15	CSTB-4SD	T-8F	(T-8L)

Reference pages : JSCLCR/L, JSCLCR-F: Inserts → B112 -, CBN → B191, PCD → B213

JSCGCR/L

Screw-on toolholder with 91° approach angle, for positive 80° rhombic inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCGCR/L1212H06	12	12	100	12	12	16	0.4	CC**0602...	1.2
JSCGCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS





Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSCGCR/L1212H06	CSTB-2.5	T-8F	(T-8L)
JSCGCR/L1616H09	CSTB-4SD	T-8F	(T-8L)

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

K

Application areas	medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX110	TH10	KS05F
Breaker Shape	NS	W20	AL
Cutting conditions	B022		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : JSCGCR/L: Inserts → B112 -, CBN → B191, PCD → B213

CN



Rhombic, 80° with hole

GN

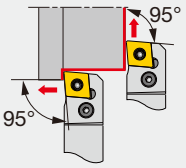


Rhombic, 70° with hole

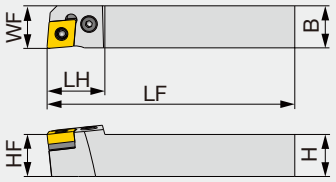
J-SERIES

PCL2NR

Lever-lock toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L2**



Without offset

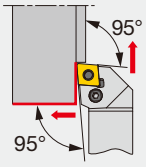
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCL2NR2020H12	20	20	100	26	20	20	0.8	CN**/GNGA1204...	3

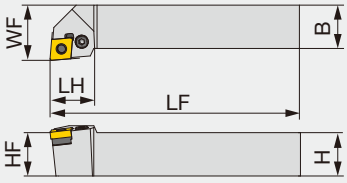
Torque*: Recommended clamping torque (N·m) RE**: Standard corner radius

PCLNR/L

Lever-lock toolholder with 95° approach angle, for negative 80°/70° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L1233	0.750	0.750	4.500	0.813	0.750	1.000	0.031	CN**/GNMG 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR2020H12	20	20	100	26	20	25	0.8	CN**/GNGA1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCLNR/L1233	LSC317	LCS3	LCL33	LSP3	P-2.5
PCL**2020H12	LSC42	LCS4	LCL4	LSP4	P-3

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application areas	Finish cutting	Medium cutting	
Grade	DX110	TH10	KS05F
Breaker Shape	DIA	P	28
Cutting conditions	B010		

S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application areas	Precision finishing
Grade	BXA10
Breaker Shape	HP
Cutting conditions	B014

Reference pages : PCL2NR, PCLNR/L: Inserts → B054 -, CBN → B168 -, PCD → B211

DC

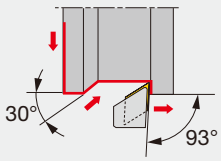


Rhombic, 55°
with hole
Positive 7°

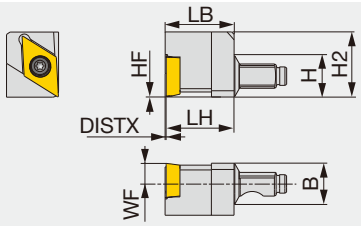
MODUMINI TURN

QC12-JSDJ2CR-Y

Screw-on Y-axis turning modular head with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSDJ2CR11-Y	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.78")	18.7 (0.736")	0.3 (0.012")	0.2 (0.008")	DC**11T3... (DC**32.5...)	1.2 (0.89)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
QC12-JSDJ2CR11-Y	CSTB-4SD	T-8F

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX110	KS05F
Breaker Shape	NS	AL
Cutting conditions	B022	

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : QC12-JSDJ2CR-Y : Inserts → B121 -, CBN → B193 -, PCD → B214
Shank, Accessory → G115, G116

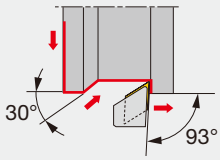
DC

Rhombic, 55°
with hole
Positive 7°

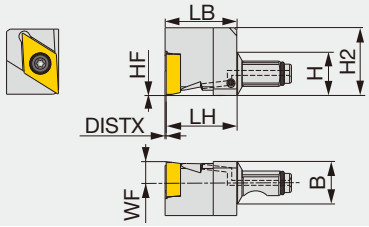
MODUMINI TURN

QC12-JSDJ2CR-Y-CHP

Screw-on Y-axis turning modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

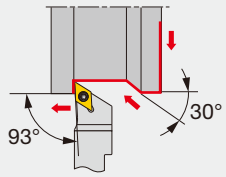
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSDJ2CR11-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.78")	18.7 (0.736")	0.3 (0.012")	0.2 (0.008")	DC**11T3... (DC**32.5...)	1.2 (0.89)

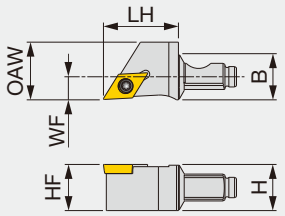
Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC12-JSDJ2CR

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset

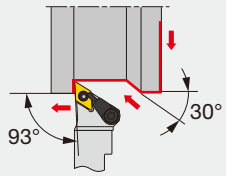
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2CR07	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	DC**0702... (DC**21.5...)	1.2 (0.89)
QC12-JSDJ2CR11	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	DC**11T3... (DC**32.5...)	1.2 (0.89)

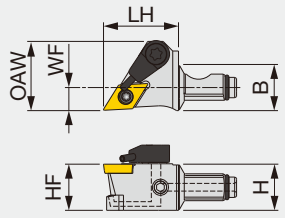
Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC12-JSDJ2CR-CHP

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2CR07-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	18 (0.709")	0.2 (0.008")	DC**0702... (DC**21.5...)	1.2 (0.89)
QC12-JSDJ2CR11-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	21 (0.827")	0.2 (0.008")	DC**11T3... (DC**32.5...)	1.2 (0.89)

Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

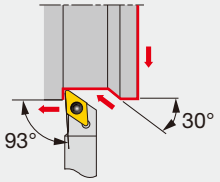
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSDJ2CR11-Y-CHP	CSTB-4SD	-	T-8F	ORSS-0454.5X1.0NBR70
QC12-JSDJ2CR07	CSTB-2.5	-	T-8F	-
QC12-JSDJ2CR07-CHP	CSTB-2.5	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70
QC12-JSDJ2CR11-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70

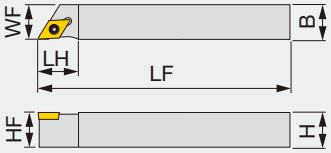
J-SERIES

JSDJ2CR/L

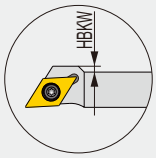
Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset



JSDJ2CR/L1010X11
JSDJ2CR/L1212F11
JSDJ2CR/L1212X11

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque
JSDJ2CR/L062	0.375	0.375	5.000	0.563	0.375	0.380	-	0.008	DC**21.5...	0.89
JSDJ2CR/L082	0.500	0.500	5.000	0.563	0.500	0.500	-	0.008	DC**21.5...	0.89
JSDJ2CR/L103	0.625	0.625	5.000	0.813	0.625	0.630	-	0.008	DC**32.5...	0.89

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JSDJ2CR/L0808F07	8	8	85	14	8	8	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X11	10	10	120	20	10	10	4	0.2	DC**11T3...	1.2
JSDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSDJ2CR/L062/082, JSDJ2CR/L**07	CSTB-2.5	T-8F	(T-8L)
JSDJ2CR/L103, JSDJ2CR/L**11	CSTB-4SD	T-8F	(T-8L)

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX110	KS05F
Breaker Shape	NS	AL
Cutting conditions	B022	

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : QC12-JSDJ2CR-Y-CHP, QC12-JSDJ2CR, QC12-JSDJ2CR-CHP, JSDJ2CR/L
: Inserts → B121 -, CBN → B193 -, PCD → B214, Shank, Accessory → G115, G116

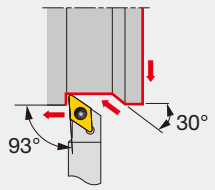
DC

Rhombic, 55°
with hole
Positive 7°

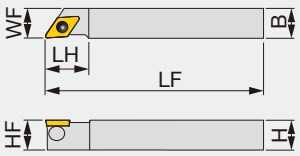
J-SERIES

JTDJ2CR/L

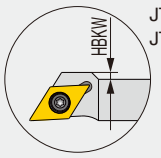
Back-clamp toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset
JTDJ2CR/L1212F11
JTDJ2CR/L1212X11



Right hand (R) shown.

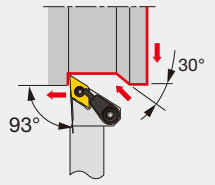
Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JTDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JSDJ2CR-CHP

Direct connection

Screw-on toolholder without offset, 93° approach angle for positive 55° rhombic inserts, high pressure coolant compatible



Cutting edge style **J2**

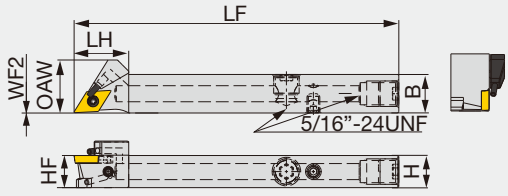


Fig.1

Without offset

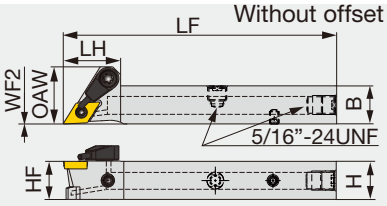


Fig.2

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque	Fig.
JSDJ2CR083X-CHP	0.500	0.500	4.750	0.748	0.500	0	0.807	0.008	DC**32.5...	0.89	-
JSDJ2CR103X-CHP	0.625	0.625	4.750	0.748	0.625	0	0.807	0.008	DC**32.5...	0.89	-

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*	Fig.
JSDJ2CR1012H07-CHP	10	12	100	17	10	0	16.4	0.2	DC**0702	1.2	1
JSDJ2CR1212X11-CHP	12	12	120	19	12	0	20.5	0.2	DC**11T3	1.2	2
JSDJ2CR1616X11-CHP	16	16	120	19	16	0	20.5	0.2	DC**11T3	1.2	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS



Designation	Clamping screw	Clamp	Clamping screw
JTDJ2CR/L**07	JCP-2	JDS-3525	P-2F
JTDJ2CR/L**11	JCP-3	JDS-5040	P-2.5F

SPARE PARTS



Designation	Clamping screw	Coolant nozzle	Nozzle retainer screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSDJ2CR1012H07-CHP	CSTB-2.5	NZ-1.10-7-CHP	SSHM4-4-TB	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2



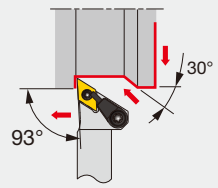
Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSDJ2CR**X-CHP, JSDJ2CR**11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Reference pages : JTDJ2CR/L, JSDJ2CR-CHP: Inserts → B121 -, CBN → B193 -, PCD → B214

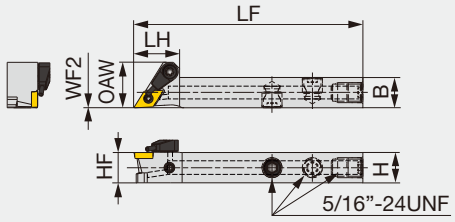
JSDJ2CR/L-CHP

Tube connection

Screw-on toolholders without offset – 93° approach angle. For positive 55° rhombic insert. High-pressure coolant capability.



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE	Insert	Torque
JSDJ2CR/L082-CHP	0.500	0.500	3.344	0.710	0.500	0.500	0.710	0.2	DC**21.5...	0.89

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*
JSDJ2CR/L1212F07-CHP	12	12	85	18	12	0	18	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11-CHP	12	12	85	19	12	0	20.5	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS






Designation	Clamping screw	Coolant unit	Wrench 1	Wrench 2 (Optional)
JSDJ2CR/L082-CHP, JSDJ2CR/L1212F07-CHP	CSTB-2.5	S-CU-CHP	T-8F	-
JSDJ2CR/L1212F11-CHP	CSTB-4SD	S-CU-CHP	T-8F	-

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX110	KS05F
Breaker Shape	NS	AL
Cutting conditions	B022	

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : JSDJ2CR/L-CHP: Inserts → B121 -, CBN → B193 -, PCD → B214

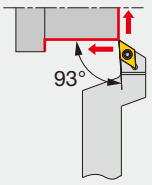
DC

Rhombic, 55°
with hole
Positive 7°

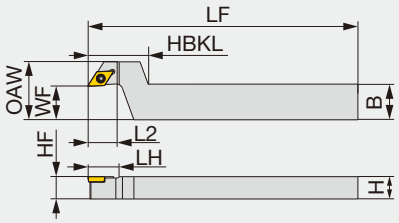
J-SERIES

JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



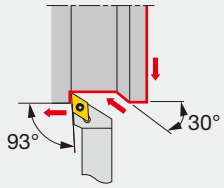
Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJCR1016X07-F15	10	16	120	12.5	27	14	10	15	26	0.2	DC**0702...	1.2
JSDJCR1216F07-F15	12	16	85	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216X07-F15	12	16	120	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216F11-F15	12	16	85	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1216X11-F15	12	16	120	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1620X11-F15	16	20	120	12.5	27	20	16	15	28	0.2	DC**11T3...	1.2

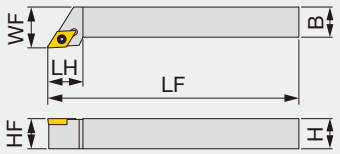
Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JSDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJCR/L0808H07	8	8	100	14	8	10	0.4	DC**0702...	1.2
JSDJCR/L1010H11	10	10	100	18	10	12	0.8	DC**11T3...	1.2
JSDJCR/L1212H07	12	12	100	14	12	16	0.4	DC**0702...	1.2
JSDJCR/L1212H11	12	12	100	18	12	16	0.8	DC**11T3...	1.2
JSDJCR/L1616H11	16	16	100	18	16	20	0.8	DC**11T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS



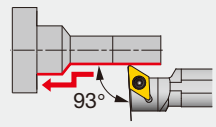


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSDJC**H07, JSDJCR**07-F15	CSTB-2.5	T-8F	(T-8L)
JSDJC**H11, JSDJCR**11-F15	CSTB-4SD	T-8F	(T-8L)

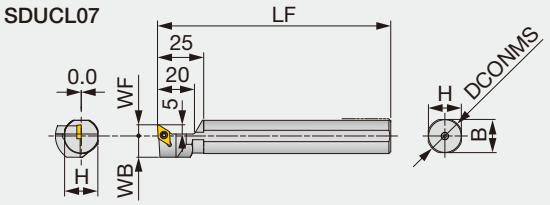
Reference pages : JSDJCR-F, JSDJCR/L: Inserts → B121 -, CBN → B193 -, PCD → B214

JS-SDUCL

Screw-on round-shank toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS19K-SDUCL07	19.05	6	125	18	18	11.5	0.4	DC**0702...	1.2
JS20K-SDUCL07	20	6	125	19	19	11.5	0.4	DC**0702...	1.2
JS22K-SDUCL07	22	6	125	21	21	11.5	0.4	DC**0702...	1.2
JS19K-SDUCL11	19.05	10	125	18	18	11.5	0.8	DC**11T3...	1.2
JS20K-SDUCL11	20	10	125	19	19	11.5	0.8	DC**11T3...	1.2
JS22K-SDUCL11	22	11	125	21	21	11.5	0.8	DC**11T3...	1.2
JS25K-SDUCL11	25	12	125	24	24	12.5	0.8	DC**11T3...	1.2
JS254K-SDUCL11	25.4	12	125	24	24	12.7	0.8	DC**11T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JS**K-SDUCL07	CSTB-2.5	T-8F
JS**K-SDUCL11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	01
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX110	KS05F
Breaker Shape	NS	AL
Cutting conditions	B022	

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	CBN	CBN
Cutting conditions	B026	

Reference pages : JS-SDUCL: Inserts → B121 -, CBN → B193 -, PCD → B214

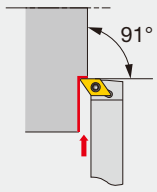
DC

Rhombic, 55°
with hole
Positive 7°

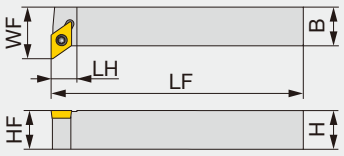
J-SERIES

JSDFCR/L

Screw-on toolholder for facing with 91° approach angle, for positive 55° rhombic inserts



Cutting edge style **F**



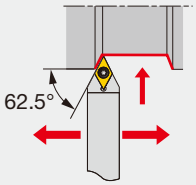
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDFCR/L1212H07	12	12	100	8	12	16	0.4	DC**0702...	1.2
JSDFCR/L1616H11	16	16	100	10.5	16	22	0.8	DC**11T3...	1.2

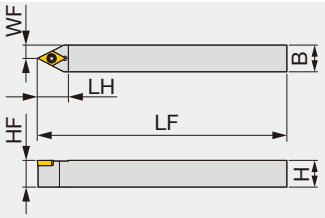
Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JSDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **N**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDNCN062	0.375	0.375	5.000	0.563	0.375	0.188	0.008	DC**21.5...	0.89
JSDNCN082	0.500	0.500	5.000	0.563	0.500	0.250	0.008	DC**21.5...	0.89
JSDNCN103	0.625	0.625	5.000	0.813	0.625	0.313	0.008	DC**21.5...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDNCN1010X07	10	10	120	15	10	5	0.2	DC**0702...	1.2
JSDNCN1010X11	10	10	120	21	10	5	0.2	DC**11T3...	1.2
JSDNCN1212F07	12	12	85	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212X07	12	12	120	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212F11	12	12	85	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1212X11	12	12	120	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1616X11	16	16	120	21	16	8	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

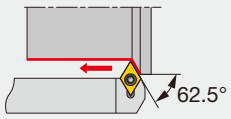
SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSDFCR/L1212H07, JSDNCN**07 JSDNCN062, 082, 103	CSTB-2.5	T-8F	(T-8L)
JSDNCN**11, JSDFCR/L1616H11	CSTB-4SD	T-8F	(T-8L)

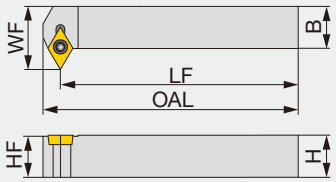
Reference pages : JSDFCR/L, JSDNCN: Inserts → B121 -, CBN → B193 -, PCD → B214

JSDN3CR

Screw-on toolholder with 62.5° approach angle (N3-style), for positive 55° rhombic inserts



Cutting edge style **N3**



Right hand (R) shown.

Metric	H	B	OAL	LF	HF	WF	RE**	Insert	Torque*
JSDN3CR1212H07	12	12	105	100	12	18	0.4	DC**0702...	1.2
JSDN3CR1616H11	16	16	107	100	16	25	0.8	DC**11T3...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSDN3CR1212H07	CSTB-2.5	T-8F	(T-8L)
JSDN3CR1616H11	CSTB-4SD	T-8F	(T-8L)

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX110	DX140	KS05F
Breaker Shape	NS	DIA	AL
Cutting conditions	B022		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA20
Breaker Shape	HP	CBN
Cutting conditions	B026	

Reference pages : JSDN3CR: Inserts → B121 -, CBN → B193 -, PCD → B214

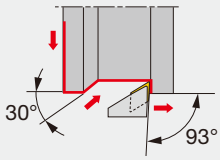
DX

Rhombic, 55° with hole

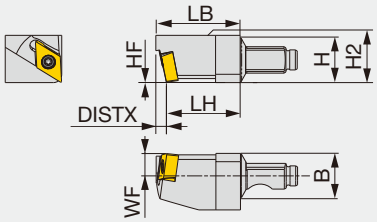
MINIFORCE TURN

QC12-JSDJ2XR-Y

Screw-on Y-axis turning modular head with 93° approach angle, for DX*U inserts



Cutting edge style **J2**



Without offset

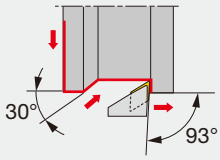
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSDJ2XR07-Y	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	22.3 (0.878")	12.5 (0.492")	2.8 (0.110")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

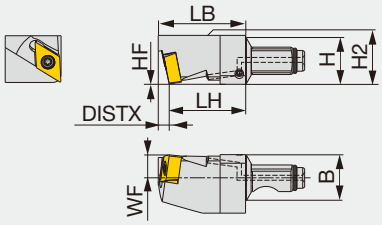
Torque: Recommended clamping torque: N·m (lbs·ft) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSDJ2XR-Y-CHP

Screw-on Y-axis turning modular head with 93° approach angle, for DX*U inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

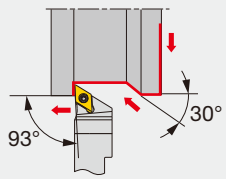
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSDJ2XR07-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	22.3 (0.878")	12.5 (0.492")	2.8 (0.110")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

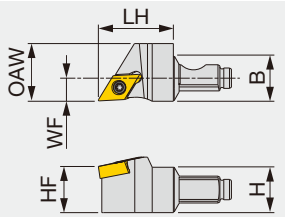
Torque: Recommended clamping torque: N·m (lbs·ft) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSDJ2XR

Screw-on modular head with 93° approach angle, for DX*U inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2XR07	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

Torque: Recommended clamping torque: N·m (lbs·ft) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

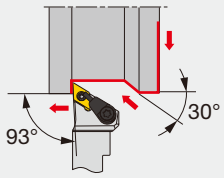
SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-JSDJ2XR07-Y	SR34-514	T-7F	-
QC12-JSDJ2XR07-Y-CHP, QC12-JSDJ2XR07	SR34-514	T-7F	ORSS-0454.5X1.0NBR70

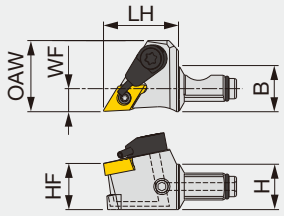
Reference pages : QC12-JSDJ2XR-Y, QC12-JSDJ2XR-Y-CHP, QC12-JSDJ2XR: Inserts → B126 - Shank, accessory → G115, G116, Standard cutting conditions → G114

QC12-JSDJ2XR-CHP

Screw-on modular head with 93° approach angle, for DX*U inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

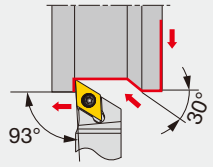
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDJ2XR07-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	18.4 (0.724")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

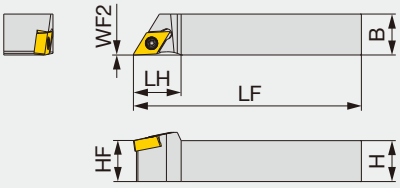
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DX*U22**L/R...	0.66
JSDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DX*U22**L/R...	0.66
JSDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DX*U22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DX*U0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DX*U0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS






Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC12-JSDJ2XR07-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70
JSDJ2XR/L...	SR34-514	-	T-7F	-

INSERT SELECTION

for Swiss lathes

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

for Small CNC lathes

P

Application areas	Finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	SS	TS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	G114	

N

Application areas	Medium to finish cutting	
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	B022	

Reference pages : QC12-JSDJ2XR-CHP, JSDJ2XR/L: Inserts → B126 -
Shank, accessory → G115, G116, Standard cutting conditions → G114

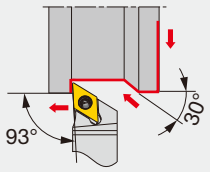
DX

Rhombic, 55° with hole

MINIFORCE TURN

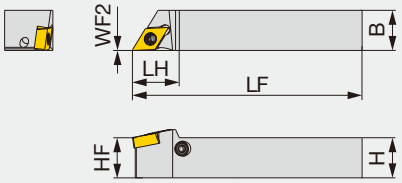
JPDJ2XR/L

Lever-lock toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

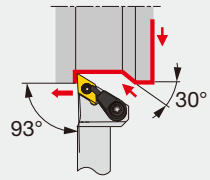
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DX*U22**L/R...	0.66
JPDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DX*U22**L/R...	0.66
JPDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DX*U22**L/R...	0.66
Metric	**H**	**B**	**LF**	**LH**	**HF**	**WF2**	**RE****	**Insert**	**Torque***
JPDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DX*U0703**L/R...	0.9
JPDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DX*U0703**L/R...	0.9
JPDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DX*U0703**L/R...	0.9
JPDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DX*U0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

JSDJ2XR-CHP

Direct connection

Screw-on toolholder without offset, 93° approach angle, for DX*U inserts, high pressure coolant compatible



Cutting edge style **J2**

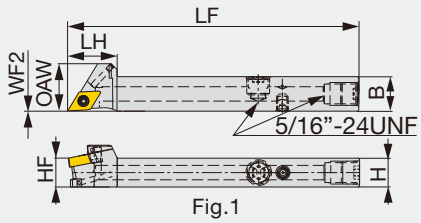


Fig.1

Without offset

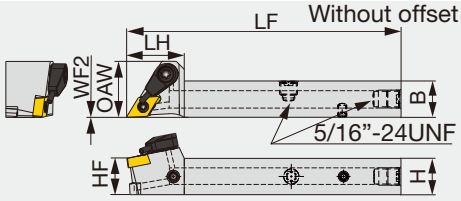
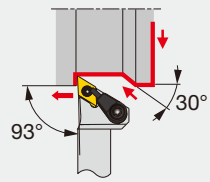


Fig.2

Right hand (R) shown.

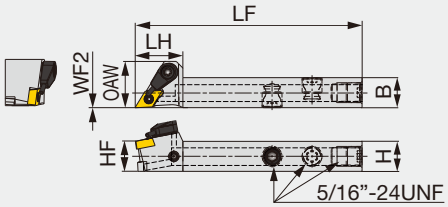
Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.
JSDJ2XR082X-CHP	0.500	0.500	4.750	0.748	0.500	0	0.728	0.008	DX*U22**L/R...	0.66	2
JSDJ2XR102X-CHP	0.625	0.625	4.750	0.748	0.625	0	0.728	0.008	DX*U22**L/R...	0.66	2
Metric	**H**	**B**	**LF**	**LH**	**HF**	**WF2**	**OAW**	**RE****	**Insert**	**Torque***	**Fig.**
JSDJ2XR1012H07-CHP	10	12	100	17	10	0	14.7	0.2	DX*U0703**L	0.9	1
JSDJ2XR1212X07-CHP	12	12	120	19	12	0	18.5	0.2	DX*U0703**L	0.9	2
JSDJ2XR1616X07-CHP	16	16	120	19	16	0	18.5	0.2	DX*U0703**L	0.9	2

Tube connection



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJ2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.730	0.008	DXGU0703**L/R...	0.66
Metric	**H**	**B**	**LF**	**LH**	**HF**	**WF2**	**OAW**	**RE ****	**Insert**	**Torque***
JSDJ2XR/L1212F07-CHP	12	12	85	19	12	0	18.5	0.2	DX*U0703**L/R...	0.9

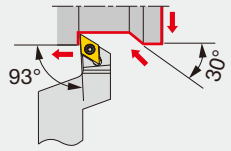
Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Right-hand toolholders (R) are used with left-hand inserts (L). Left-hand toolholders (L) are used with right-hand inserts (R).

SPARE PARTS

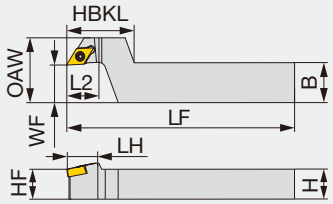
Designation	Lever	Pin	Clamping screw 1	Wrench 1	Clamping screw 2	Coolant unit	Wrench 2	Coolant plug	Wrench 3	DirectJet plug	Wrench 4
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED	-	-	-	-	-	-	-
JSDJ2XR1012H07-CHP	-	-	-	-	SR34-514	-	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSDJ2XR**07-CHP	-	-	-	-	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSDJ2XR/L1212F07-CHP	-	-	-	-	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	-	-
JSDJXR**-F15	-	-	-	-	SR34-514	-	T-7F	-	-	-	-

JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJXR082-F10	0.500	0.625	4.750	0.500	1.130	0.625	0.500	0.625	1.000	0.008	DX*U22**L/R...	0.66
JSDJXR102-F10	0.625	0.750	4.750	0.500	1.130	0.625	0.625	0.625	1.000	0.008	DX*U22**L/R...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJXR1016X07-F15	10	16	120	12	27	14	10	15	26	0.2	DX*U0703**L...	0.9
JSDJXR1216F07-F15	12	16	85	12	27	14	12	15	26	0.2	DX*U0703**L...	0.9
JSDJXR1216X07-F15	12	16	120	12	27	14	12	15	26	0.2	DX*U0703**L...	0.9
JSDJXR1620X07-F15	16	20	120	12	27	14	16	15	26	0.2	DX*U0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJXR**-F...	SR34-514	T-7F

INSERT SELECTION

for Swiss lathes

P	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS	JS
	Cutting conditions	G114	

M	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS	JS
	Cutting conditions	G114	

for Small CNC lathes

P	Application areas	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS	TS
	Cutting conditions	G114	

M	Application areas	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS	TS
	Cutting conditions	G114	

N	Application areas	Medium to finish cutting	
	Grade	KS05F	KS05F
	Breaker Shape	SS	TS
	Cutting conditions	B022	

Reference pages : JPDJ2XR/L, JSDJ2XR-CHP, JSDJXR-F : Inserts → B126 -
Standard cutting conditions → G114

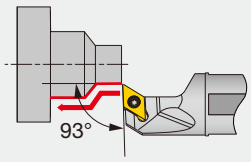
DX

Rhombic, 55° with hole

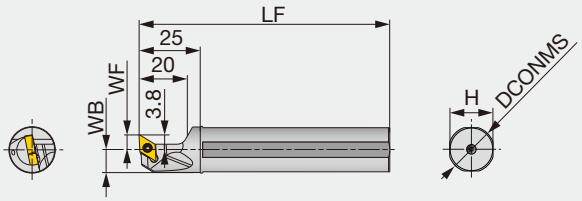
MINIFORCE TURN

JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DX*U inserts



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	WF	LF	H	WB	RE**	Insert	Torque*
JS14H-SDUXL07	14	6	100	13	6.75	0.2	DX*U0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	7.687	0.2	DX*U0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	7.75	0.2	DX*U0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	9.275	0.2	DX*U0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	9.275	0.2	DX*U0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	9.75	0.2	DX*U0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	9.75	0.2	DX*U0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	10.75	0.2	DX*U0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	12.25	0.2	DX*U0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	12.45	0.2	DX*U0703**L...	0.9

Torque*: Recommended clamping torque (N·m) RE**: Standard corner radius
Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

INSERT SELECTION

for Swiss lathes

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

for Small CNC lathes

P

Application areas	Finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	SS	TS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	G114	

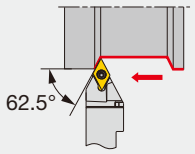
N

Application areas	Medium to finish cutting	
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	B022	

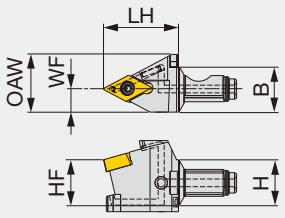
Reference pages : JS-SDUXL: Inserts → B126 -, Standard cutting conditions → G114

QC12-JSDNXR-CHP

Screw-on modular head with 62.5° approach angle, for DX*U inserts, with high pressure coolant capability



Cutting edge style **N**



Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSDNXR07-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-JSDNXR07-CHP	SR34-508	T-7F	ORSS-0454.5X1.0NBR70

INSERT SELECTION

for Swiss lathes

P				M			
Application areas	Finish cutting	Medium to finish cutting		Application areas	Finish cutting	Medium to finish cutting	
Grade	SH725	SH725		Grade	SH725	SH725	
Breaker Shape	JSS	JS		Breaker Shape	JSS	JS	
Cutting conditions	G114			Cutting conditions	G114		

for Small CNC lathes

P				M				N			
Application areas	Finish cutting	Medium cutting		Application areas	Finish cutting	Medium cutting		Application areas	Medium to finish cutting		
Grade	AH725	AH725		Grade	AH8015	AH8015		Grade	KS05F	KS05F	
Breaker Shape	SS	TS		Breaker Shape	SS	TS		Breaker Shape	SS	TS	
Cutting conditions	G114			Cutting conditions	G114			Cutting conditions	B022		

Reference pages : QC12-JSDNXR-CHP: Inserts → B126 -, Shank, Accessory → G115, G116
Standard cutting conditions → G114

DN

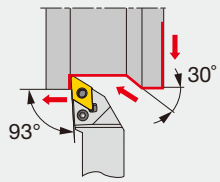
Rhombic, 55° with hole

FN

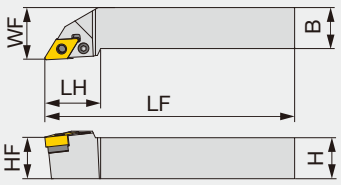
Rhombic, 45° with hole

PDJNR/L

Lever-lock toolholder with 93° approach angle, for negative 55°/45° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L1033	0.625	0.625	4.000	1.125	0.625	0.875	0.031	DN**/FNMG 33...	1.48
PDJNR/L1233	0.750	0.750	4.500	1.125	0.750	1.000	0.031	DN**/FNMG 33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	0.8	DN**/FNMG1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	0.8	DN**/FNMG1104...	2
PDJNR2020H15	20	20	100	32	20	25	0.8	DN**/FNGA1504...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PDJNR/L**33, PDJNR/L**1104	ELSD32	LCS3	LCL33L	LSP3	P-2.5
PDJNR2020H15	LSD42	LCS4	LCL4	LSP4	P-3

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B004			

M

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6215	AH6225	AH6225
Breaker Shape	SF	SM	SH
Cutting conditions	B006		

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

N

Application areas	Precision finishing	Finish cutting	Medium cutting	
Grade	DX110	DX140	TH10	KS05F
Breaker Shape	DIA with rake	DIA	P	28
Cutting conditions	B010			

S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA10
Breaker Shape	HP	HS
Cutting conditions	B014	

Reference pages : PDJNR/L: Inserts → B066 -, CBN → B172 -, PCD → B211

SC

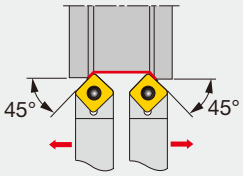
Square with hole Positive 7°

SP

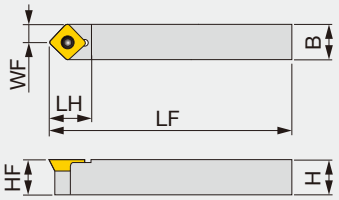
Square with hole Positive 11°

SSDC/PN

Screw-on toolholder with 45° approach angle, for positive square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
SSDCN1010K07	10	10	125	12	10	5	0.4	SC**0702...
SSDPN1010H	10	10	100	12	10	5	0.4	SP*P042...
SSDCN1212K09	12	12	125	15	12	6	0.8	SC**09T3...
SSDPN1212H	12	12	100	12	12	6	0.4	SP*P042...
SSDCN1616H09	16	16	100	15	16	8	0.8	SC**09T3...
SSDPN1616H	16	16	100	14	16	8	0.8	SP*M322...

RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SSDCN1010K07	CSTB-3	-	-	-	T-9F
SSDPN1010H	CSTA-NO3	-	-	-	T-9F
SSDCN1212K09	CSTB-4	-	-	-	T-15F
SSDPN1212H	CSTA-NO3	-	-	-	T-9F
SSDCN1616H09	CSTB-3.5L	DTS5-3.5	SSS32	P-3.5	T-15F
SSDPN1616H	CSTA-NO5	-	-	-	T-9F

INSERT SELECTION

P

Application areas	Medium to finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	PS 	PM 
Cutting conditions	B016	

M

Application areas	Medium cutting
Grade	AH725
Breaker Shape	PM 
Cutting conditions	B018

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B020

Reference pages : SSDC/PN: Inserts → B134 -

TC

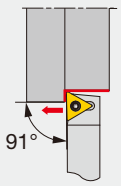


Triangular with hole Positive 7°

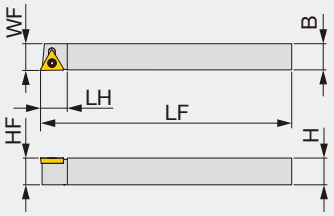
J-SERIES

JSTACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSTACR/L0808K08	8	8	125	10	8	8	0.2	TC**0802...	0.6
JSTACR/L1010K08	10	10	125	10	10	10	0.2	TC**0802...	0.6
JSTACR/L1212K11	12	12	125	12	12	12	0.4	TC**1102...	1.2
JSTACR/L1616H11	16	16	100	12	16	16	0.4	TC**1102...	1.2

Torque*: Recommended clamping torque (N·m) RE**: Standard corner radius

SPARE PARTS





Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSTACR/L**K08	CSTB-2L	T-6F	(T-6L)
JSTACR/L**11	CSTB-2.5	T-8F	(T-8L)

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	DIA with rake	AL
Cutting conditions	B022	

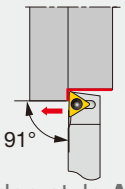
H

Application areas	Finish cutting
Grade	BXA10
Breaker Shape	CBN
Cutting conditions	B026

Reference pages : JSTACR/L: Inserts → B138 -, CBN → B198, PCD → B215 -

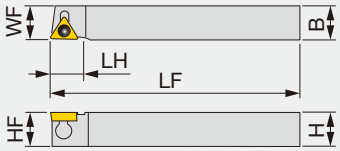
JTTACR/L

Back-clamp toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTACL0810K08	8	10	125	10	8	10	0.2	TC**0802...	0.9
JTTACR/L1212M11	12	12	150	12	12	12	0.4	TC**1102...	0.9
JTTACR/L1616M11	16	16	150	12	16	16	0.4	TC**1102...	0.9

Torque*: Recommended clamping torque (N·m) RE**: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTACL0810K08	JCP-1	JDS-3525	P-2F
JTTACR/L**M11	JCP-2	JDS-3525	P-2F

INSERT SELECTION

P

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

M

Application areas	Precision finishing		Finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	01	JP	JS	JS
Cutting conditions	G114			

P

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

M

Application areas	Medium to finish cutting
Grade	SH725
Breaker Shape	J10
Cutting conditions	G114

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

N

Application areas	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	DIA with rake	AL
Cutting conditions	B022	

H

Application areas	Finish cutting
Grade	BXA10
Breaker Shape	CBN
Cutting conditions	B026

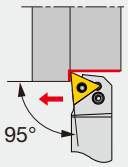
Reference pages : JTTACR/L: Inserts → B138 -, CBN → B198, PCD → B215 -

TN

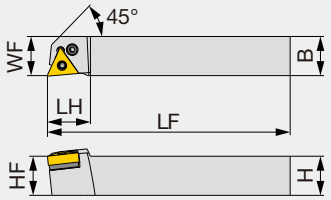
Triangular with hole

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Without offset

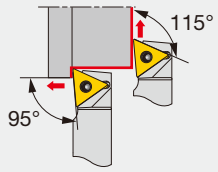
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

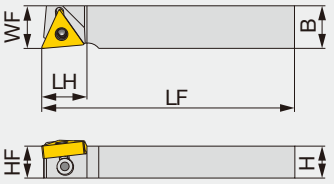
Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTLNR/L1216F16	12	16	85	17	12	16	0.4	TN**1604...	1
JTTLNR/L1216X16	12	16	120	17	12	16	0.4	TN**1604...	1
JTTLNR/L1616X16	16	16	120	17	16	16	0.4	TN**1604...	1

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

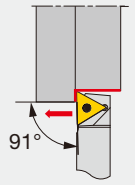
SPARE PARTS

Designation	Clamp	Shim	Clamping screw	Clamping screw 1	Wrench	Wrench 1	Spring pin	Lever
PTL2NR/L...	-	LST317 D30	-	LCS3	-	P-2.5	LSP3	LCL3
JTTLNR/L...	JCP-3N	-	JDS-5040	-	P-2.5F	-	-	-

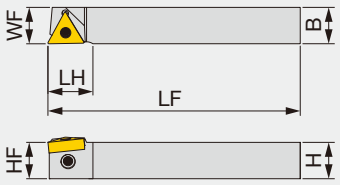
Reference pages : PTL2NR/L, JTTLNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

JTTANR/L

Back-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTANR/L1216K16	12	16	125	19.8	12	16	0.4	TN**1604...	1.2
JTTANR/L1616K16	16	16	125	19.8	16	16	0.4	TN**1604...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTANR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting		Medium cutting
Grade	SH725	SH725	GT9530	T9215
Breaker Shape	01	JRP	TSF	TM
Cutting conditions	G114			B004

P

Application areas	Medium to heavy cutting
Grade	T9215
Breaker Shape	TH
Cutting conditions	B004

N

Application areas	Precision finishing	Finish cutting	Medium cutting	
Grade	DX110	DX140	TH10	KS05F
Breaker Shape	DIA with rake	DIA	P	28
Cutting conditions	B010			

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA10
Breaker Shape	HP	HS
Cutting conditions	B014	

M

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	SH725	SH725	AH6225
Breaker Shape	01	JRP	SM
Cutting conditions	G114		B006

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B008		

S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	CBN	HRF	HRM
Cutting conditions	B012		

Reference pages : JTTANR/L: Inserts → B087 -, CBN → B182 -, PCD → B212

VB

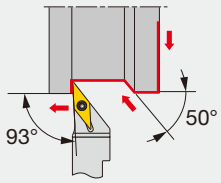


Rhombic, 35°
with hole
Positive 5°

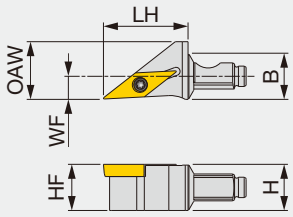
MODUMINI TURN

QC12-JSVJ2BR

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J2**



Without offset

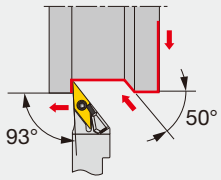
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2BR11	12 (0.750")	12 (0.750")	22 (0.866")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	VB**1103... (VB**22...)	1.2 (0.89)

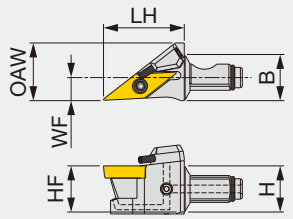
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC12-JSVJ2BR-CHP

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

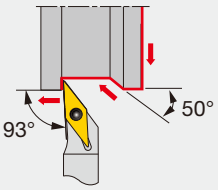
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2BR11-CHP	12 (0.750")	12 (0.750")	21 (0.827")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	VB**1103... (VB** 22...)	1.2 (0.89)

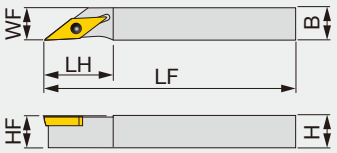
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

JSVJ2BR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2BR/L062	0.375	0.375	5.000	0.813	0.375	0.375	0.008	VB** 22...	0.89
JSVJ2BR/L082	0.500	0.500	5.000	0.813	0.500	0.500	0.008	VB** 22...	0.89
JSVJ2BR/L102	0.625	0.625	5.000	0.813	0.625	0.625	0.008	VB** 22...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2BR/L1010X11	10	10	120	21	10	10	0.2	VB**1103...	1.2
JSVJ2BR/L1212F11	12	12	85	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1212X11	12	12	120	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1616X11	16	16	120	21	16	16	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS





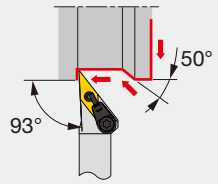



Designation	Clamping screw	Wrench 1	O-ring	Coolant nozzle	Screw	Wrench 2
QC12-JSVJ2BR11, JSVJ2BR/L...	CSTB-2.5	T-8F	-	-	-	-
QC12-JSVJ2BR11-CHP	CSTB-2.5	T-8F	ORSS-0454.5X1.0NBR70	NZ-1.10-7-CHP	SSHM4-4-TB	P-2

JSVJ2BR/L-CHP

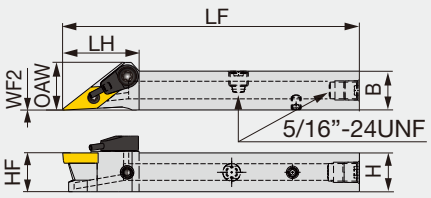
Direct connection

Screw-on toolholder without offset, 93° approach angle for positive 35° rhombic inserts, high pressure coolant compatible



Cutting edge style **J2**



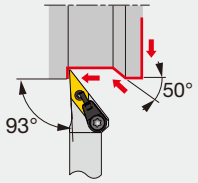


Without offset

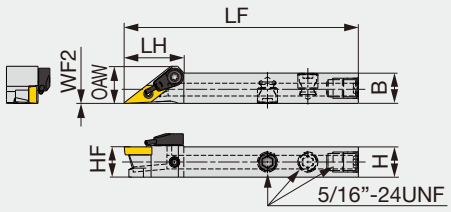
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF2	OAW	RE	Insert	Torque*
JSVJ2BR1212X11-CHP	12	12	120	23.6	12	0	14.7	0.2	VB**1103	1.2
JSVJ2BR1616X11-CHP	16	16	120	23.6	16	0	16	0.2	VB**1103	1.2

Tube connection



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2BR/L082-CHP	0.500	0.500	3.344	0.930	0.500	0	0.610	0.008	VB** 22...	0.89

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*
JSVJ2BR/L1212F11-CHP	12	12	85	23.6	12	0	14.7	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS









Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSVJ2B**X11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSVJ2BR/L082-CHP, JSVJ2B**F11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	-	-

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	JP	JS	JS	J10
Cutting conditions	G114			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	JP	JS	JS	J10
Cutting conditions	G114			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA10
Breaker Shape	HP	CBN
Cutting conditions	B026	

Reference pages : QC12-JSVJ2BR, QC12-JSVJ2BR-CHP, JSVJ2BR/L, JSVJ2BR/L-CHP:
Inserts → B150 -, CBN → B207 - , Shank, Accessory → G115, G116

VB

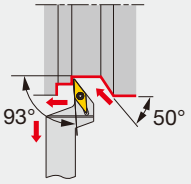


Rhombic, 35°
with hole
Positive 5°

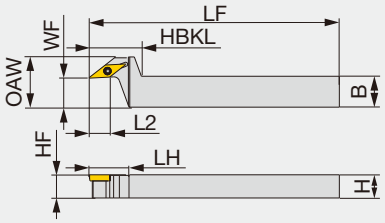
J-SERIES

JSVJBR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



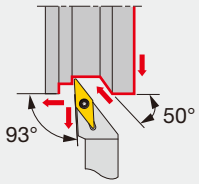
Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJBR1216F11-F15	12	16	85	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1216X11-F15	12	16	120	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1620X11-F15	16	20	120	12.6	27	21	16	15	26	0.2	VB**1103...	1.2

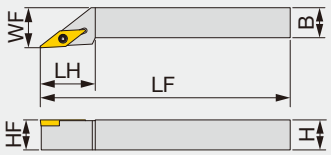
Torque*: Recommended clamping torque (N·m) RE**: Standard corner radius

JSVJBR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
SVJBR/L122	0.750	0.750	4.500	1.063	0.750	1.000	0.0160	VB**22...	0.89
SVJBR/L123	0.750	0.750	4.500	1.181	0.750	1.000	0.0320	VB**33...	0.89
SVJBR/L163	1.000	1.000	6.000	1.575	1.000	1.250	0.0320	VB**33...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJBR/L1010H11	10	10	100	20	10	12	0.4	VB**1103...	1.2
JSVJBR/L1212H11	12	12	100	22	12	16	0.4	VB**1103...	1.2
JSVJBR/L1616H11	16	16	100	22	16	20	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius

SPARE PARTS



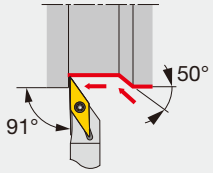


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVJBR**-F15, JSVJBR/L...	CSTB-2.5	T-8F	(T-8L)

Reference pages : JSVJBR-F, JSVJBR/L: Inserts → B150 -, CBN → B207 -

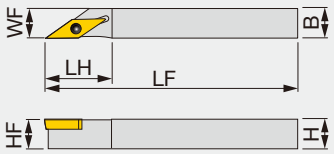
JSVABL

Screw-on toolholder with 91° approach angle, for positive 35° rhombic inserts



Cutting edge style **A**

Without offset



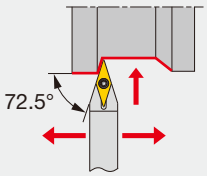
Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVABL1010K11	10	10	125	21	10	10	0.2	VB**1103...	1.2
JSVABL1212K11	12	12	125	21	12	12	0.2	VB**1103...	1.2

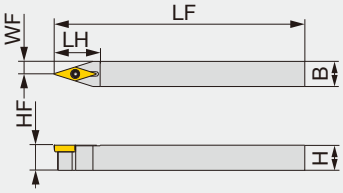
Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

JSVNBN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **N**



Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVNBN1010X11	10	10	120	22	10	5	0.2	VB**1103...	1.2
JSVNBN1212F11	12	12	85	22	12	6	0.2	VB**1103...	1.2
JSVNBN1212X11	12	12	120	22	12	6	0.2	VB**1103...	1.2
JSVNBN1616X11	16	16	120	22	16	8	0.2	VB**1103...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVNB...	CSTB-2.5	T-8F	(T-8L)

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	JP	JS	JS	J10
Cutting conditions	G114			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	SH725	SH725
Breaker Shape	JP	JS	JS	J10
Cutting conditions	G114			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B020

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing	Finish cutting
Grade	BXA10	BXA10
Breaker Shape	HP	CBN
Cutting conditions	B026	

Reference pages : JSVABL, JSVNBN: Inserts → B150 -, CBN → B207 -

VP

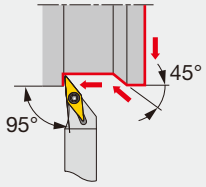
Rhombic, 35°
with hole
Positive 11°



J-SERIES

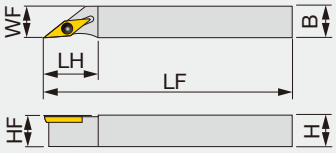
JSVL2PR/L

Screw-on toolholder with 95° approach angle, for positive 35° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVL2PR/L082	0.500	0.500	5.000	0.813	0.500	0.500	0.008	VP**63...	0.89
JSVL2PR/L102	0.625	0.625	5.000	0.813	0.625	0.625	0.008	VP**63...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVL2PR/L1010X08	10	10	120	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1010K08	10	10	125	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1212F08	12	12	85	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212F11	12	12	85	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212X08	12	12	120	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212X11	12	12	120	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212K08	12	12	125	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1616X08	16	16	120	16	16	16	0.2	VP**0802...	0.6
JSVL2PL1616K08	16	16	125	16	16	16	0.2	VP**0802...	0.6
JSVL2PR/L1616X11	16	16	120	21	16	16	0.2	VP**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

SPARE PARTS





Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVL2PR/L082/102	CSTB-2.5	T-8F	(T-8L)
JSVL2PR/L**08	CSTB-2L	T-6F	(T-6L)
JSVL2PR/L**11	CSTB-2.5	T-8F	(T-8L)

INSERT SELECTION

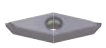
P

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

M

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

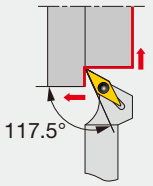
S

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

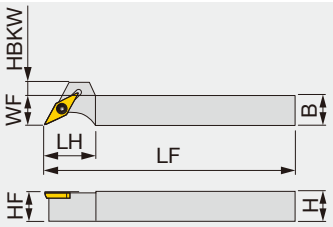
Reference pages : JSVL2PR/L: Inserts → B154

JSVP2PR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **P2**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JSVP2PR/L1010K08	10	10	125	16	10	10	4	0.2	VP**0802...	0.6
JSVP2PR/L1010K11	10	10	125	20	10	10	8	0.2	VP**1103...	1.2
JSVP2PR/L1212K08	12	12	125	16	12	12	2	0.2	VP**0802...	0.6
JSVP2PR/L1212K11	12	12	125	20	12	12	6	0.2	VP**1103...	1.2
JSVP2PR/L1616K08	16	16	125	16	16	16	2	0.2	VP**0802...	0.6
JSVP2PR/L1616K11	16	16	125	20	16	16	6	0.2	VP**1103...	1.2

Torque*: Recommended clamping torque (N·m)
RE**: Standard corner radius

SPARE PARTS

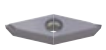




Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVP2PR/L**08	CSTB-2L	T-6F	(T-6L)
JSVP2PR/L**11	CSTB-2.5	T-8F	(T-8L)

INSERT SELECTION

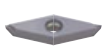
P

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

M

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

S

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JSP 
Cutting conditions	G114	

Reference pages : JSVP2PR/L: Inserts → B154

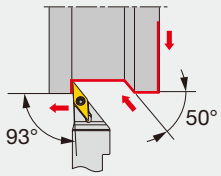
VX

Rhombic, 35° with hole

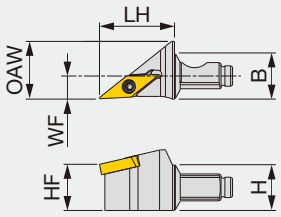
MINIFORCE TURN

QC12-JSVJ2XR

Screw-on modular head with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

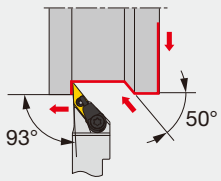
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2XR09	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	VXGU09T2**L... (VXGU73.5**L...)	0.9 (0.66)

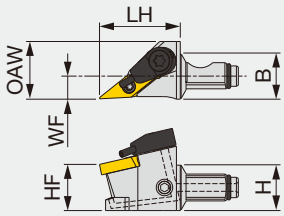
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSVJ2XR-CHP

Screw-on modular head with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2XR09-CHP	12 (0.750")	12 (0.750")	21 (0.827")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	VXGU09T2**L... (VXGU73.5**L...)	0.9 (0.66)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

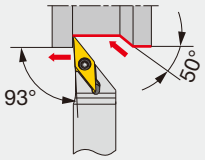
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring	Lever	Pin	Clamping screw	Wrench
QC12-JSVJ2XR09	SR34-508	-	T-7F	-	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED
QC12-JSVJ2XR09-CHP	SR34-508	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70	-	-	-	-

Reference pages : QC12-JSVJ2XR, QC12-JSVJ2XR-CHP: Inserts → B155, Shank, Accessory → G115, G116
Standard cutting conditions → G114

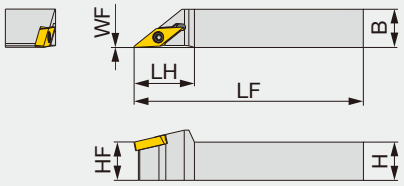
JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

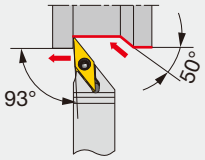
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU73*L/R...	0.66
JSVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU73*L/R...	0.66
JSVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU73*L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).
Use left-hand toolholders (L) with right-hand inserts (R).

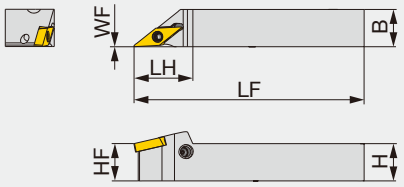
JPVJ2XR/L

Lever-lock toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU73*L/R...	0.66
JPVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU73*L/R...	0.66
JPVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU73*L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2XR/L1010X09	10	10	120	19	10	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).
Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Pin	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F	-	-	-	-
JPVJ2XR/L...	-	-	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JS 
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JS 
Cutting conditions	G114	

Reference pages : JSVJ2XR/L, JPVJ2XR/L: Inserts → B155, Standard cutting conditions → G114

VX

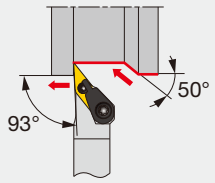
Rhombic, 35° with hole

MINIFORCE TURN

JSVJ2XR/L-CHP

Direct connection

Screw-on toolholder without offset, 93° approach angle, for VXGU inserts, high pressure coolant compatible



Cutting edge style **J2**

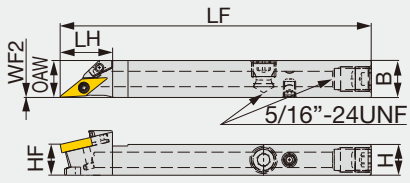


Fig.1

Without offset

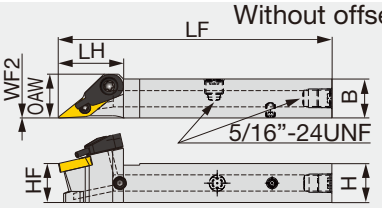


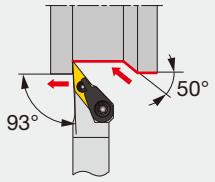
Fig.2

Right hand (R) shown.

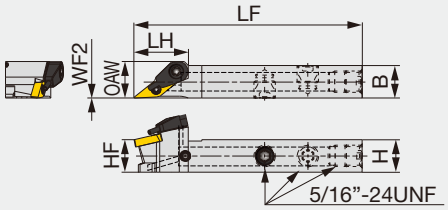
Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.
JSVJ2XR087X-CHP	0.500	0.500	4.750	0.768	0.500	0	0.528	0.008	VXGU73*L...	0.66	-
JSVJ2XR107X-CHP	0.625	0.625	4.750	0.768	0.625	0	0.625	0.008	VXGU73*L...	0.66	-

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*	Fig.
JSVJ2XR1012H09-CHP	10	12	100	17	10	0	12	0.2	VXGU09T2**L	0.9	1
JSVJ2XR1212X09-CHP	12	12	120	19.5	12	0	13.4	0.2	VXGU09T2**L	0.9	2
JSVJ2XR1616X09-CHP	16	16	120	19.5	16	0	16	0.2	VXGU09T2**L	0.9	2

Tube connection



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2XR/L087-CHP	0.500	0.500	4.750	0.748	0.500	0	0.020	0.008	VXGU73*L...	0.66

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*
JSVJ2XR/L1212F09-CHP	12	12	85	20	12	0	13.5	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Right-hand toolholders (R) are used with left-hand inserts (L). Left-hand toolholders (L) are used with right-hand inserts (R).

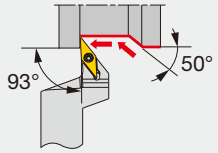
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSVJ2XR1012H09-CHP	SR34-508	-	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSVJ2XR**X-CHP, JSVJ2XR**X09-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSVJ2XR/L087-CHP JSVJ2XR/L1212F09-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	-	-

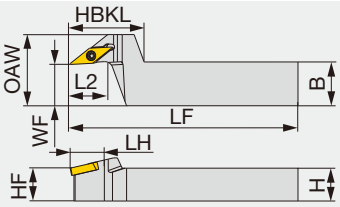
Reference pages : JSVJ2XR/L-CHP: Inserts → B155, Standard cutting conditions → G114

JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

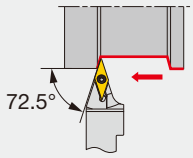
Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJXR087-F10	0.500	0.625	4.750	0.500	1.130	0.750	0.500	0.625	1.000	0.008	VXGU73**L...	0.66
JSVJXR107-F10	0.625	0.750	4.750	0.500	1.130	0.750	0.625	0.625	1.000	0.008	VXGU73**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJXR1016X09-F15	10	16	120	12	27	19	10	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216F09-F15	12	16	85	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216X09-F15	12	16	120	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1620X09-F15	16	20	120	12	27	19	16	15	26	0.2	VXGU09T2**L...	0.9

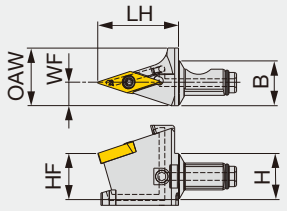
Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSVVXR-CHP

Screw-on modular head with 72.5° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **V**



Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVVXR09-CHP	12 (0.750")	12 (0.750")	21 (0.827)	12 (0.472)	6 (0.236)	15 (0.591)	0.2 (0.008)	VXGU09T2**L... (VXGU73**L...)	0.9 (0.66)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
JSVJXR**-F...	SR34-508	T-7F	-
QC12-JSVVXR09-CHP	SR34-508	T-7F	ORSS-0454.5X1.0NBR70

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JS
Cutting conditions	G114	

Reference pages : JSVJXR-F, QC12-JSVVXR-CHP: Inserts → B155,
Shank, Accessory → G115, G116, Standard cutting conditions → G114

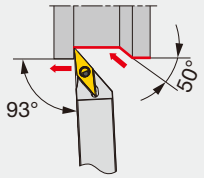
VN

Rhombic, 35°
with hole

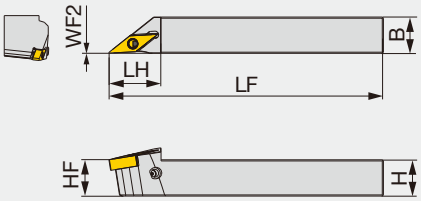
ISOTURN

JPVJ2NR/L

Back-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPVJ2NR082.33	0.500	0.500	4.75	0.900	0.500	0	0.0078	VN**2.33...	0.66
JPVJ2NR102.33	0.625	0.625	4.75	0.900	0.625	0	0.0078	VN**2.33...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JPVJ2NR/L1212X1204	12	12	120	23	12	0	0.2	VN**1204...	0.9
JPVJ2NR/L1616X1204	16	16	120	23	16	0	0.2	VN**1204...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: The holder measurements are true with this insert radius

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2NR/L***.33 JPVJ2NR/L**1204	SLLV-4	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B004	

M

Application	Finishing	Medium cutting
Grade	AH6225	AH6225
Chipbreaker shape	SS	SM
Cutting conditions	B006	

Reference pages : JPVJ2NR/L: Inserts → B098 -

WX

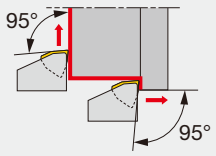


Trigon, 80°
with hole

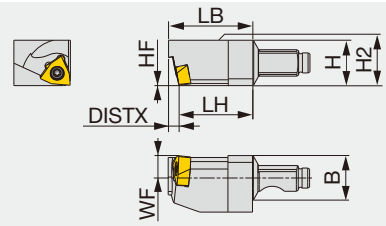
MINIFORCE TURN

QC12-JSWL2XR-Y

Screw-on Y-axis turning modular head with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

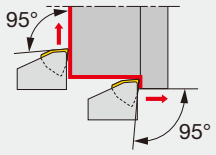
Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque
QC12-JSWL2XR04-Y	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	22.3 (0.878")	12 (0.472")	2.8 (0.11")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)

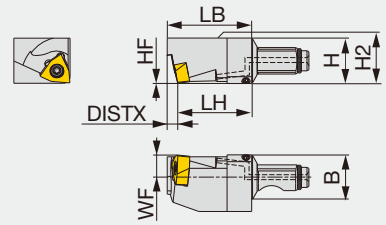
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSWL2XR-Y-CHP

Screw-on Y-axis turning modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque
QC12-JSWL2XR04-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	22.3 (0.878")	12 (0.472")	2.8 (0.11")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-JSWL2XR04-Y	SR34-514	T-7F	-
QC12-JSWL2XR04-Y-CHP	SR34-514	T-7F	ORSS-0454.5X1.0NBR70

INSERT SELECTION

For Swiss lathes

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing
Grade	BXA10
Breaker Shape	HP
Cutting conditions	B026

For Small CNC lathes

P

Application areas	Finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	SS	TS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	G114	

N

Application areas	Medium to finish cutting	
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	B022	

Reference pages : QC12-JSWL2XR-Y, QC12-JSWL2XR-Y-CHP: Inserts → B157 -, CBN → B210
Shank, Accessory → G115, G116, Standard cutting conditions → G114

WX

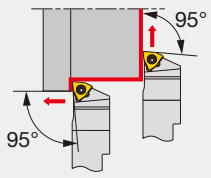


Trigon, 80°
with hole

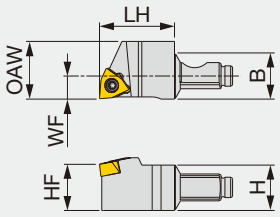
MINIFORCE TURN

QC12-JSWL2XR

Screw-on modular head with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

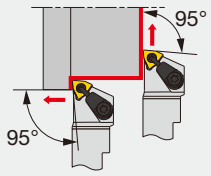
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSWL2XR04	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)

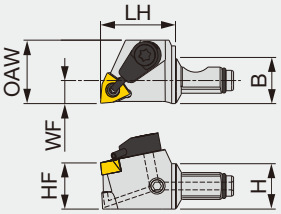
Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

QC12-JSWL2XR-CHP

Screw-on modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC12-JSWL2XR04-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	16.5 (0.650")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)

Torque: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

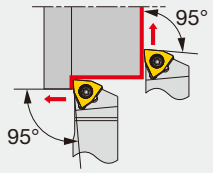
SPARE PARTS

Designation	Clamping screw 1	Coolant unit	Wrench 1	O-ring
QC12-JSWL2XR04	SR34-514	-	T-7F	-
QC12-JSWL2XR04-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70

Reference pages : QC12-JSWL2XR, QC12-JSWL2XR-CHP: Inserts → B157 -, CBN → B210
Shank, Accessory → G115, G116, Standard cutting conditions → G114

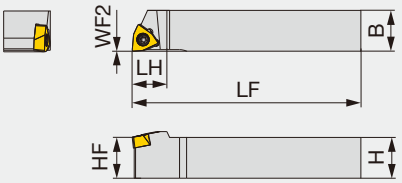
JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

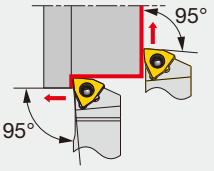
Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU22**L/R...	0.66
JSWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU22**L/R...	0.66
JSWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

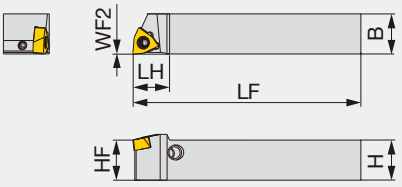
JPWL2XR/L

Lever-lock toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU22**L/R...	0.66
JPWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU22**L/R...	0.66
JPWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	RE**	Insert	Torque*
JPWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw 1	Lever	Pin	Clamping screw 2	Wrench 1	Wrench 2
JSWL2XR/L...	SR34-514	-	-	-	T-7F	-
JPWL2XR/L...	-	SLLV-2	SL-PI-2	SR10400611	-	HW2.0/5RED

INSERT SELECTION

For Swiss lathes

P			M			H		
Application areas	Finish cutting	Medium to finish cutting	Application areas	Finish cutting	Medium to finish cutting	Application areas	Precision finishing
Grade	SH725	SH725	Grade	SH725	SH725	Grade	BXA10
Breaker Shape	JSS	JS	Breaker Shape	JSS	JS	Breaker Shape	HP
Cutting conditions	G114		Cutting conditions	G114		Cutting conditions	B026

For Small CNC lathes

P			M			N		
Application areas	Finish cutting	Medium cutting	Application areas	Finish cutting	Medium cutting	Application areas	Medium to finish cutting	
Grade	AH725	AH725	Grade	AH8015	AH8015	Grade	KS05F	KS05F
Breaker Shape	SS	TS	Breaker Shape	SS	TS	Breaker Shape	SS	TS
Cutting conditions	G114		Cutting conditions	G114		Cutting conditions	B022	

Reference pages : JSWL2XR/L, JPWL2XR/L: Inserts → B157 -, CBN → B210
Standard cutting conditions → G114

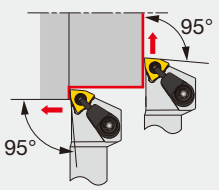
WX

Trigon, 80°
with hole

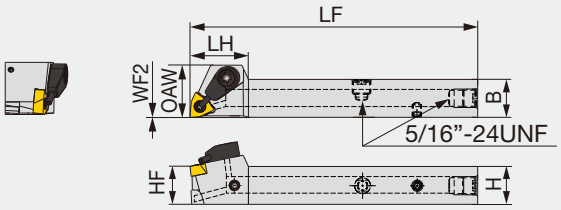
MINIFORCE TURN
JSWL2XR/L-CHP

Direct connection

Screw-on toolholder without offset, 95° approach angle, for WXGU inserts, high pressure coolant compatible



Cutting edge style **L2**



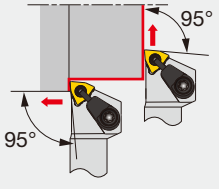
Without offset

Right hand (R) shown.

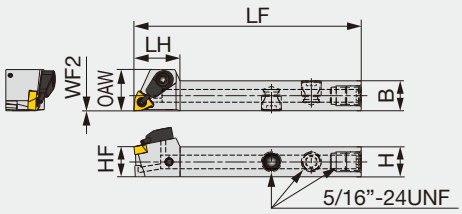
Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSWL2XR082X-CHP	0.500	0.500	4.750	0.728	0.500	0	0.650	0.008	WXGU22**L...	0.66
JSWL2XR102X-CHP	0.625	0.625	4.750	0.728	0.625	0	0.650	0.008	WXGU22**L...	0.66

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*
JSWL2XR1212X04-CHP	12	12	120	18.5	12	0	16.5	0.2	WXGU0403**L	0.9
JSWL2XR1616X04-CHP	16	16	120	18.5	16	0	16.5	0.2	WXGU0403**L	0.9

Tube connection



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSWL2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.650	0.008	WXGU22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF2	OAW	RE**	Insert	Torque*
JSWL2XR/L1212F04-CHP	12	12	85	18	12	0	16.5	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius
Note: Right-hand toolholders (R) are used with left-hand inserts (L). Left-hand toolholders (L) are used with right-hand inserts (R).

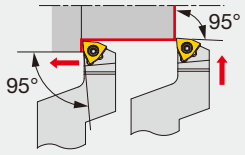
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSWL2XR**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSWL2XR/L**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	-	-

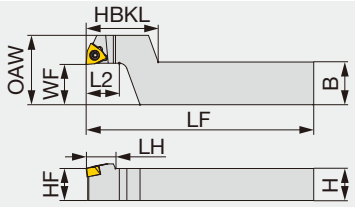
Reference pages : JSWL2XR/L-CHP: Inserts → B157 -, CBN → B210
Standard cutting conditions → G114

JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSWLXR082-F10	0.500	0.625	4.750	0.500	1.100	0.500	0.500	0.625	1.000	0.008	WXGU22**L...	0.66
JSWLXR102-F10	0.625	0.750	4.750	0.500	1.100	0.500	0.625	0.625	1.000	0.008	WXGU22**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWLXR1016X04-F15	10	16	120	12	27	11	10	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216F04-F15	12	16	85	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216X04-F15	12	16	120	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1620X04-F15	16	20	120	12	27	11	16	15	26	0.2	WXGU0403**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) RE**: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSWLXR**-F10, JSWLXR**-F15	SR34-514	T-7F

INSERT SELECTION

For Swiss lathes

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JSS	JS
Cutting conditions	G114	

H

Application areas	Precision finishing
Grade	BXA10
Breaker Shape	HP
Cutting conditions	B026

For Small CNC lathes

P

Application areas	Finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	SS	TS
Cutting conditions	G114	

M

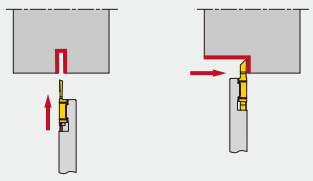
Application areas	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	G114	

N

Application areas	Medium to finish cutting	
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	B022	

Reference pages : JSWLXR-F: Inserts → B157 -, CBN → B210, Standard cutting conditions → G114

Parting-off and front turning toolholders



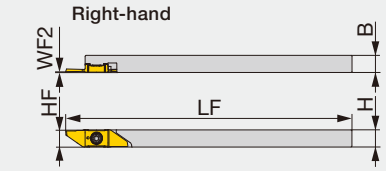


Fig. 1

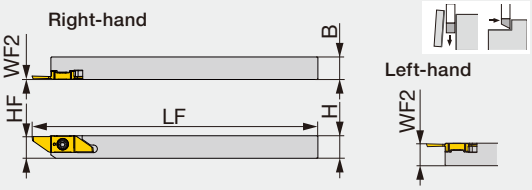


Fig. 2

Metric	H	B	LF	HF	WF2(1)	Insert	Torque*	Fig.
JSXXL0606X05	6	6	120	5.6	5.8	JV*N..., JVN...	1.3	1
JSXXR/L0707X05	7	7	120	6.6	0.2/6.8	JV*N..., JVN...	1.3	1
JSXXR/L0808F05	8	8	85	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L0808H05	8	8	100	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L1010H05	10	10	100	9.7	0.2/9.8	JV*N..., JVN...	1.3	2

SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...05	CSTB-2.5L054DL	T-7F
JSXXL...05	CSTB-2.5L054DR	T-7F

Torque*: Recommended clamping torque (N·m)
(1) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Use the right-hand insert (JV****R...) for a right-hand holder (JSXXR...); the left-hand insert (JV****L...) for a left-hand holder (JSXXL...).

INSERT

JVFN45R/L (For front turning)



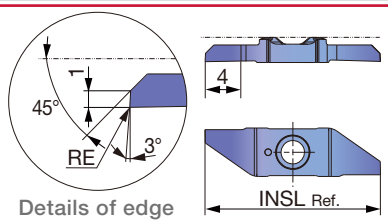


Fig. 1 Details of edge

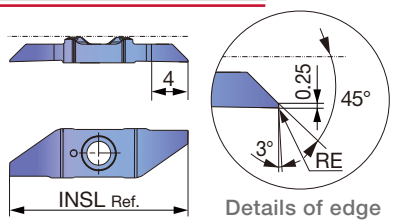


Fig. 2 Details of edge

P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	RE	Coated SH725	INSL (in)	Fig.
JVFN45R0310F	R	0	●	0.827	1
JVFN45L0302FL	L	0	●	0.827	2

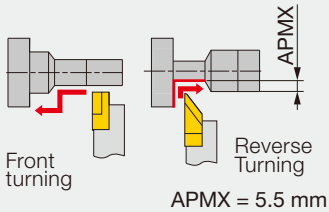
● : Line up

STANDARD CUTTING CONDITIONS

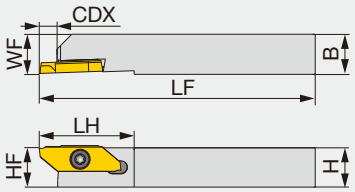
ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0012
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0012
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0012
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0012
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0012
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0012
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0012
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0012

JSXGR/L

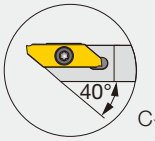
Screw-on toolholder for front/reverse turning and external grooving



APMX = 5.5 mm



Without offset



C-type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXGR/L1010K8-C	10	10	125	29	6.7	10	10	JXFR/L8..., JXRR/L8...
JSXGR/L1212K8-C	12	12	125	29	6.7	12	12	JXFR/L8..., JXRR/L8...
JSXGR/L1616K8	16	16	125	29	6.5	16	16	JXFR/L8..., JXRR/L8...
JSXGR/L2020K8	20	20	125	29	6.5	20	20	JXFR/L8..., JXRR/L8...
JSXGR/L2525K8	25	25	125	29	6.5	25	25	JXFR/L8..., JXRR/L8...

Can be used with JXG insert for parting and grooving.
Can be wrenched also from the back with a double-head screw.

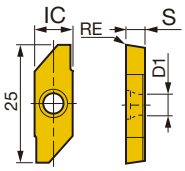
SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSXGR/L...	CSTB-4SD	T-8F	(T-8L)

INSERT

JXF (For front turning)





P	Steel	★						
M	Stainless	★						
K	Cast iron							
N	Non-ferrous	★						
S	Superalloys	★						
H	Hard materials							

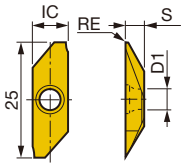
★ : First choice

Designation	HAND	RE	Coated	Uncoated	IC	S	D1
			J740	TH10			
JXFR8000F	R	0.001	●	●	0.315	0.156	0.173
JXFR8010F	R	0.004	●	●	0.315	0.156	0.173

● : Line up

JXR (For reverse turning)





P	Steel	★						
M	Stainless	★						
K	Cast iron							
N	Non-ferrous	★						
S	Superalloys	★						
H	Hard materials							

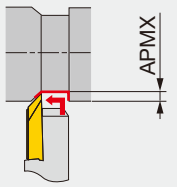
★ : First choice

Designation	HAND	RE	Coated	Uncoated	IC	S	D1
			J740	TH10			
JXRR8000F	R	0.001	●	●	0.315	0.156	0.173
JXRR8010F	R	0.004	●	●	0.315	0.156	0.173

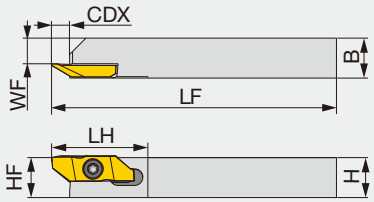
● : Line up

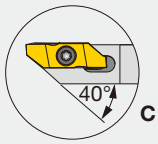
JSXBR/L

Screw-on toolholder for back turning and threading



APMX = 5.5 mm





C type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR/L1010K8-C	10	10	125	29	6.7	10	5.7	JXBR/L8..., JXT*R...
JSXBR/L1212K8-C	12	12	125	29	6.7	12	7.7	JXBR/L8..., JXT*R...
JSXBR/L1616K8	16	16	125	29	6.4	16	11.7	JXBR/L8..., JXT*R...
JSXBR/L2020K8	20	20	125	29	6.4	20	15.7	JXBR/L8..., JXT*R...
JSXBR/L2525K8	25	25	125	29	6.4	25	20.7	JXBR/L8..., JXT*R...

Can be used with JXT insert for threading.
Can be wrenched also from the back with a double-head screw.

SPARE PARTS



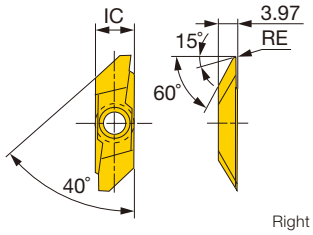


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSXBR/L...	CSTB-4SD	T-8F	(T-8L)

INSERT

JXB (Sharp edge)





Right hand (R) shown.

		Coated		Uncoated	
P	Steel	★			
M	Stainless	★			
K	Cast iron	★		☆	
N	Non-ferrous			★	
S	Superalloys	☆		★	
H	Hard materials			★	

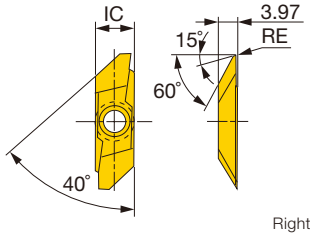
★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated J740	Uncoated TH10	IC (mm)	Max. depth of cut (mm)
JXBR8000F	R	0.03	●	●	8	5.5
JXBL8000F	L	0.03	●	●	8	5.5
JXBR8005F	R	0.05	●	●	8	5.5
JXBL8005F	L	0.05	●	●	8	5.5
JXBR8010F	R	0.1	●	●	8	5.5
JXBL8010F	L	0.1	●	●	8	5.5
JXBR8015F	R	0.15	●	●	8	5.5
JXBL8015F	L	0.15	●	●	8	5.5

● : Line up

JXB (Honed edge)





Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated J740	IC (mm)	Max. depth of cut (mm)
JXBR/L8005	R	0.05	●	8	5.5
JXBR/L8005	L	0.05	●	8	5.5
JXBR/L8010	R	0.1	●	8	5.5
JXBR/L8010	L	0.1	●	8	5.5
JXBR/L8015	R	0.15	●	8	5.5
JXBR/L8015	L	0.15	●	8	5.5

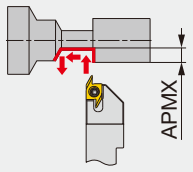
● : Line up

STANDARD CUTTING CONDITIONS (JXB type insert)

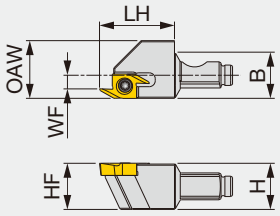
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	General steel 1045, etc.	J740	33 - 328	0.0004 - 0.0012	0.0008 - 0.004
P	Free-cutting steel	J740	33 - 328	0.0004 - 0.0012	0.0008 - 0.004
M	Stainless steel 303, etc.	J740	33 - 328	0.0004 - 0.0008	0.0008 - 0.003
N	Aluminium alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	164 - 656	0.0004 - 0.0020	0.0008 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.0008	0.0008 - 0.002

QC12-JSEGR

Screw-on modular head for back turning



APMX =0.118"



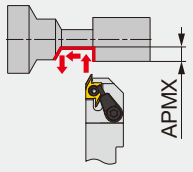
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	Insert	Torque*
QC12-JSEGR10	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	3.5 (0.138")	15 (0.591")	J10ER...	1.2 (0.89)

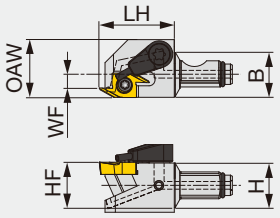
Torque* : Recommended clamping torque: N·m (lbs·ft)

QC12-JSEGR-CHP

Screw-on modular head for back turning, with high pressure coolant capability



APMX =0.118"



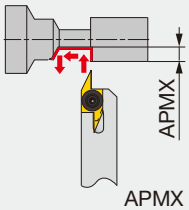
Right hand (R) shown.

Metric	H	B	LH	HF	WF	OAW	Insert	Torque*
QC12-JSEGR10-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	3.5 (0.138")	15 (0.591")	J10ER...	1.2 (0.89)

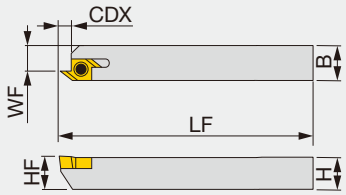
Torque* : Recommended clamping torque: N·m (lbs·ft)

JSEGR/L

Screw-on toolholder for back turning



APMX = 3 mm



Metric	H	B	LF	CDX	HF	WF	Insert	Torque*
JSEGR/L1010K10	10	10	125	3.3	10	7.5	J10ER/L...	1.2
JSEGR/L1212K10	12	12	125	3.3	12	9.5	J10ER/L...	1.2
JSEGR/L1616K10	16	16	125	3.3	16	13.5	J10ER/L...	1.2

Torque*: Recommended clamping torque (N·m)

SPARE PARTS

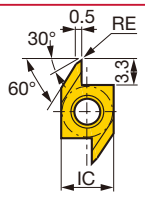
Designation	Clamping screw	Coolant unit	Wrench	Wrench 2 (Optional)	O-ring
QC12-JSEGR10	CSTB-2.5		T-8F		
QC12-JSEGR10-CHP	CSTB-2.5	S-CU-CHP	T-8F		ORSS-0454.5X1.0NBR70
JSEGR/L...	CSTB-2.5		T-8F	(T-8L)	

Reference pages : QC12-JSEGR, QC12-JSEGR-CHP, JSEGR/L: Inserts→ G079
Shank, Accessory → G115, G116, Standard cutting conditions → G080

INSERT

J10E (Sharp edge)





Right hand (R) shown.

P	Steel	★	☆			★					
M	Stainless	★	☆								
K	Cast iron	★				☆			☆		
N	Non-ferrous								★		
S	Superalloys	☆							★		
H	Hard materials								★		

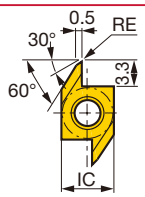
★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated				Cermet				Uncoated				IC (mm)	Max. depth of cut (mm)
			SH725	J740			NS9530				TH10					
J10ER/L005BF	R	0.05	●	●							●				6.35	3
J10ER/L005BF	L	0.05	●	●							●				6.35	3
J10ER/L010BF	R	0.1	●	●							●				6.35	3
J10ER/L010BF	L	0.1	●	●							●				6.35	3
J10ER/L015BF	R	0.15	●				●								6.35	3
J10ER/L015BF	L	0.15	●				●								6.35	3

● : Line up

J10E (Honed edge)





Right hand (R) shown.

P	Steel	★			★						
M	Stainless	★									
K	Cast iron	★			☆						
N	Non-ferrous										
S	Superalloys	☆									
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated			Coated cermet								IC (mm)	Max. depth of cut (mm)
			J740			J9530									
J10ER005B	R	0.05	●			●								6.35	3
J10EL005B	L	0.05	●											6.35	3
J10ER010B	R	0.1	●			●								6.35	3
J10EL010B	L	0.1	●											6.35	3

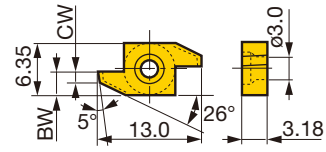
● : Line up

STANDARD CUTTING CONDITIONS (J10E type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
N	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

INSERT

10E (Insert blank)



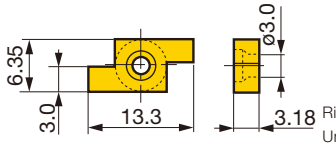
Right hand (R) shown.
Unit: mm

Designation	HAND	Uncoated TH10		
10ER100B	R	●		
10EL100B	L	●		
10ER150B	R	●		
10EL150B	L	●		

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...) and left hand holder (JSEGL...) use left hand insert (10EL...)

10E (Insert blank)



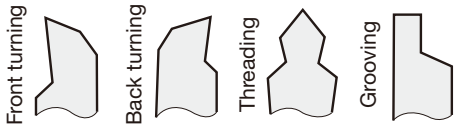
Right hand (R) shown.
Unit: mm

Designation	HAND	Uncoated TH10		
10ER300	R	●		
10EL300	L	●		

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...) and left hand holder (JSEGL...) use left hand insert (10EL...)

Formed examples of insert blanks



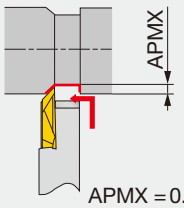
Notes:
- Front relief angle, side relief angle, edge width can be ground depending on the application.
- Insert blanks can be formed to a profiling tool which has a width up to 0.118".

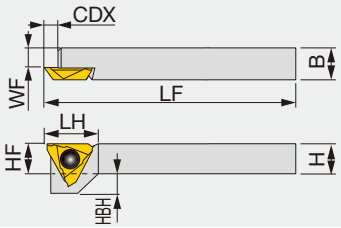
Standard cutting conditions

Operations			Carbon steel	Stainless steel	Brass
Lateral feed (external turning)	Cutting speed (sfm)		~ 330	~ 160	~ 650
	Feed (ipr)	Roughing	~ 0.002	~ 0.001	~ 0.004
		Medium	~ 0.001	~ 0.001	~ 0.002
		Finishing	~ 0.0007	~ 0.0006	~ 0.0016
Parting-off Grooving Forming	Cutting speed (sfm)		~ 260	~ 100	~ 500
	Feed (ipr)	Roughing	~ 0.0007	~ 0.0006	~ 0.002
		Medium	~ 0.0006	~ 0.0004	~ 0.001
		Finishing	~ 0.0004	~ 0.0003	~ 0.0006

JSTBR/L

Screw-on toolholder for back turning





Right hand (R) shown.

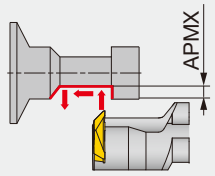
Inch	H	B	LF	LH	CDX	HF	WF	HBH	Insert	Torque
JSTBR/L063	0.375	0.375	5.000	0.625	0.197	0.375	0.219	0.250	JTBR/L3...	0.89
JSTBR/L083	0.500	0.500	5.000	0.625	0.197	0.500	0.313	0.125	JTBR/L3...	0.89
JSTBR/L103	0.625	0.625	5.000	0.625	0.197	0.625	0.469	-	JTBR/L3...	0.89

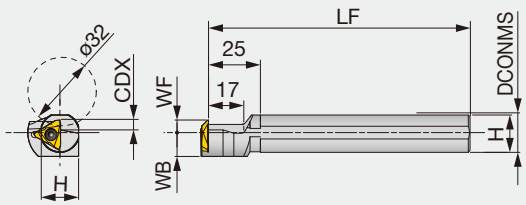
Metric	H	B	LF	LH	CDX	HF	WF	HBH	Insert	Torque*
JSTBR/L1010X3	10	10	120	15	5	10	6	5	JTBR/L3...	1.2
JSTBL1010K3	10	10	125	15	5	10	6	5	JTBR/L3...	1.2
JSTBR/L1212F3	12	12	85	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1212X3	12	12	120	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1616X3	16	16	120	15	5	16	12	-	JTBR/L3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)

JS-TBL3

Screw-on toolholder for back turning





Metric	H	H	LF	CDX	WF	WB	Insert	Torque*
JS19K-TBL3	19.05	18	125	4.5	6	11.5	JTBR3...	3
JS20K-TBL3	20	19	125	4.5	6	11.5	JTBR3...	3
JS22K-TBL3	22	21	125	4.5	6	11.5	JTBR3...	3
JS25K-TBL3	25.4	24	125	4.5	10	12.7	JTBR3...	3

Torque*: Recommended clamping torque (N·m)

SPARE PARTS



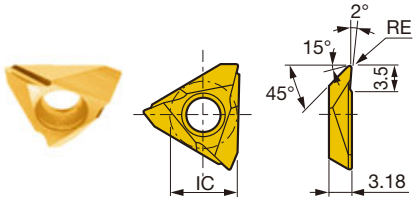


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSTBR/L...	CSTB-4SD	T-8F	(T-8L)
JS**-TBL3	CSTB-4S	T-15F	-

Reference pages : JSTBR/L, JS-TBL3: Inserts, Standard cutting conditions → G082

INSERT

JTB (Sharp edge)



Right hand (R) shown.

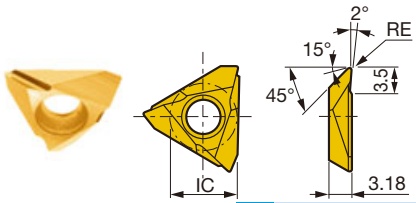
P	Steel	★ ☆ ★
M	Stainless	★ ☆
K	Cast iron	★ ☆ ☆
N	Non-ferrous	★
S	Superalloys	☆ ☆ ★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated		Cermet	Uncoated	IC (mm)	Max. depth of cut (mm)
			SH725	J740	NS9530	TH10		
JTBR3000F	R	0.001	●	●		●	9.438	2.5
JTBL3000F	L	0.001	●	●		●	9.438	2.5
JTBR3005F	R	0.002	●	●		●	9.438	2.5
JTBL3005F	L	0.002	●	●		●	9.438	2.5
JTBR3010F	R	0.004	●	●	●	●	9.438	2.5
JTBL3010F	L	0.004	●	●	●	●	9.438	2.5
JTBR3015F	R	0.006	●	●			9.438	2.5
JTBL3015F	L	0.006	●				9.438	2.5

● : Line up

JTBR/L (Honed edge)



Right hand (R) shown.

P	Steel	★ ★
M	Stainless	★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated	Coated cermet	IC (mm)	Max. depth of cut (mm)
			J740	J9530		
JTBR3005	R	0.002	●	●	9.438	2.5
JTBL3005	L	0.002	●		9.438	2.5
JTBR3010	R	0.004	●	●	9.438	2.5
JTBL3010	L	0.004	●		9.438	2.5

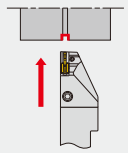
● : Line up

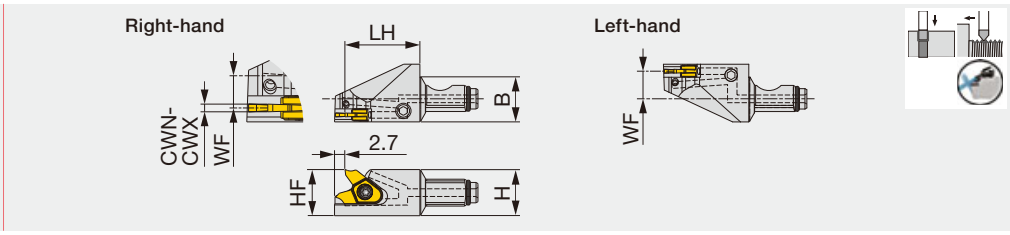
STANDARD CUTTING CONDITIONS (JTB type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
N	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

QC12-SVER/L-CHP

Modular head for external grooving and threading, with high pressure coolant capability





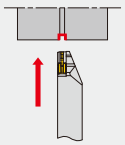
Metric	CWN	CWX	H	B	LH	HF	WF (1)	Insert	Torque
QC12-SVER/L10-CHP	0.5 (0.020")	1 (0.039")	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	4.19/7.19 (0.165"/0.283")	VG*10...	1.3 (0.96)

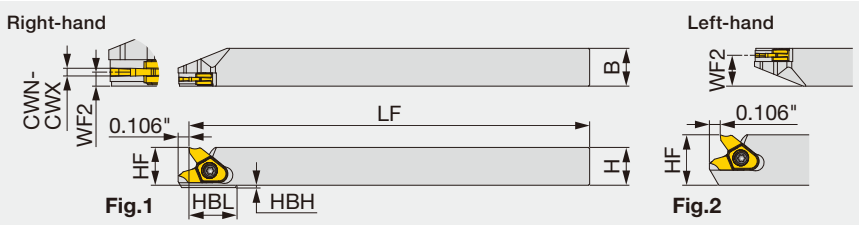
Torque: Recommended clamping torque: N·m (lbs·ft)

(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

SVER/L

External grooving and threading toolholder





Inch	CWN	CWX	H	B	LF	HF	WF2 (1)	HBL	HBH	Insert	Torque	Fig.
SVER/L06-10	0.020	0.039	0.375	0.375	4.750	0.375	0.070/0.304	0.472	0.024	VG*10...	0.96	1
SVER/L08-10	0.020	0.039	0.500	0.500	4.750	0.500	0.070/0.430	-	-	VG*10...	0.96	2

Metric	CWN	CWX	H	B	LF	HF	WF2 (1)	HBL	HBH	Insert	Torque*	Fig.
SVER/L0808H08	0.33	1	8	8	100	8	1.23/6.78	-	-	VGP08...	1.1	2
SVER/L1010H10	0.5	1	10	10	100	10	1.78/8.23	-	-	VG*10...	1.3	1
SVER/L1212X10	0.5	1	12	12	120	12	1.78/10.23	-	-	VG*10...	1.3	1

Torque: Recommended clamping torque: lbs·ft (*N·m)

(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

SPARE PARTS



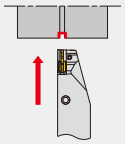


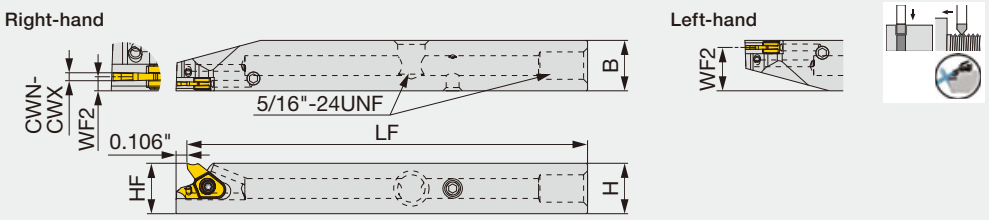
Designation	Clamping screw	Wrench	O-ring
QC12-SVER10-CHP	CSTB-2.5L054DL	T-7F	ORSS-0454.5X1.0NBR70
QC12-SVEL10-CHP	CSTB-2.5L054DR	T-7F	ORSS-0454.5X1.0NBR70
SVER0808...	CSTB-2.2L053DL	T-7F	-
SVEL0808...	CSTB-2.2L053DR	T-7F	-
SVER06/08-10, SVER1010/1212...	CSTB-2.5L054DL	T-7F	-
SVEL06/08-10, SVEL1010/1212...	CSTB-2.5L054DR	T-7F	-

Reference pages : QC12-SVER/L-CHP, SVER/L: Inserts → G084
Shank, Accessory → G115, G116, Standard cutting conditions → G085

SVER/L-CHP

External grooving and threading toolholder, with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	HF	WF2 (1)	Insert	Torque
SVER/L08-10-CHP	0.020	0.039	0.500	0.500	4.750	0.500	0.070/0.430	VG*10...	0.96

Metric	CWN	CWX	H	B	LF	HF	WF2 (1)	Insert	Torque*
SVER/L1012H10-CHP	0.5	1	10	12	100	10	1.78/10.23	VG*10...	1.3
SVER/L1212X10-CHP	0.5	1	12	12	120	12	1.78/10.23	VG*10...	1.3

Compatible to the direct internal coolant supply system without the use of external coolant hose.
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

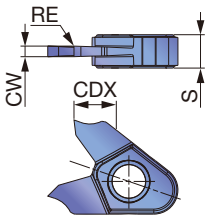
SPARE PARTS

Designation	Clamping screw	Coolant plug	DirectJet plug	Wrench	Wrench 1	Wrench 2
SVER...	CSTB-2.5L054DL	SR5/16UNFTL360	SSHM4-6-TB	T-7F	P-4	P-2
SVEL...	CSTB-2.5L054DR	SR5/16UNFTL360	SSHM4-6-TB	T-7F	P-4	P-2

INSERTS

VGP08/10 (For grooving / sharp edge)





P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX* (in)	CUTDIA (in)	S (in)
VGP08-033F-000	0.33	0.013	0	●	0.079	0.157	0.087
VGP08-050F-000	0.5	0.020	0	●	0.079	0.157	0.087
VGP08-075F-000	0.75	0.030	0	●	0.098	0.197	0.087
VGP08-100F-000	1	0.039	0	●	0.098	0.197	0.087
VGP10-050F-000	0.5	0.020	0	●	0.098	0.197	0.124
VGP10-050F-005	0.5	0.020	0.002	●	0.098	0.197	0.124
VGP10-075F-000	0.75	0.030	0	●	0.118	0.236	0.124
VGP10-075F-005	0.75	0.030	0.002	●	0.118	0.236	0.124
VGP10-100F-000	1	0.039	0	●	0.157	0.315	0.124
VGP10-100F-005	1	0.039	0.002	●	0.157	0.315	0.124

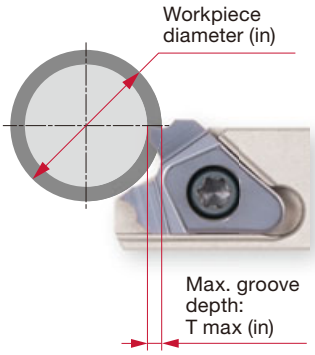
*Max grooving depth varies depending on workpiece diameters.
See below for details.

● : Line up

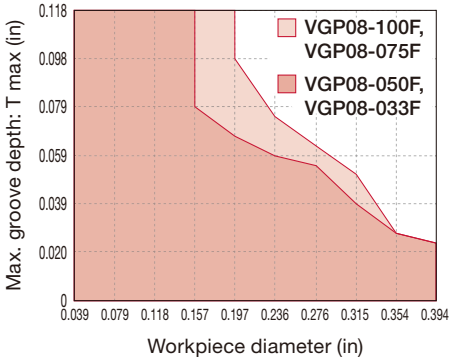
Reference pages : Toolholders → G083 - G084

Note: Max grooving depths vs workpiece diameters

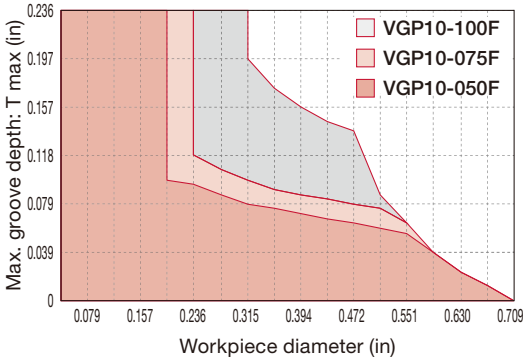
To avoid tool interference with the workpiece, max grooving depths (T max) for the insert used may be smaller than the CDX values listed above depending on the workpiece diameter.



VGP08



VGP10



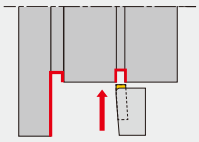
STANDARD CUTTING CONDITIONS

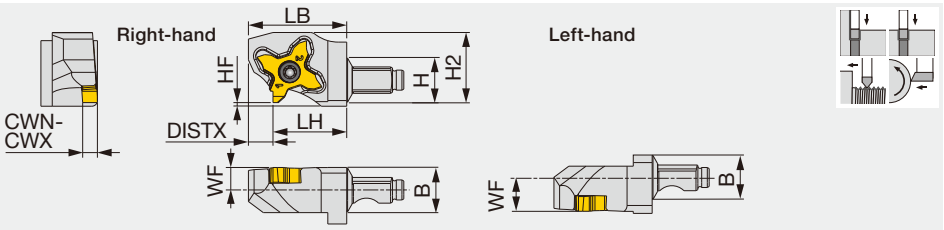
Grooving

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, 1020, etc.	SH725	164 - 492	0.0002 - 0.004
P	Carbon steels, Alloy steels 1055, 4140, etc.	SH725	164 - 492	0.0002 - 0.004
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 492	0.0002 - 0.004
M	Stainless steels 304, etc.	SH725	164 - 328	0.0002 - 0.004
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 722	0.0002 - 0.004
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.0002 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.0002 - 0.004
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.0002 - 0.004

QC12-STCR/L-Y

Y-axis turning modular head for external grooving and threading



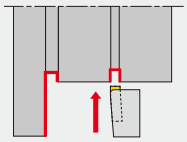


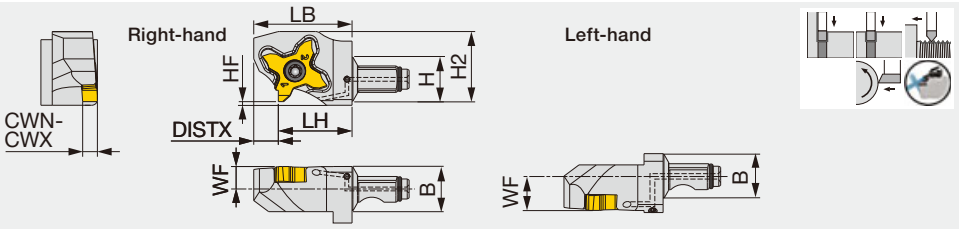
Metric	CWN	CWX	H	B	LH	HF	WF**	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6/9 (0.236" / 0.354")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
WF** : The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

QC12-STCR/L-Y-CHP

Y-axis turning modular head for external grooving and threading, with high pressure coolant capability





Metric	CWN	CWX	H	B	LH	HF	WF**	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y-CHP	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6 (0.236")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
WF** : The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Through-coolant head
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

SPARE PARTS



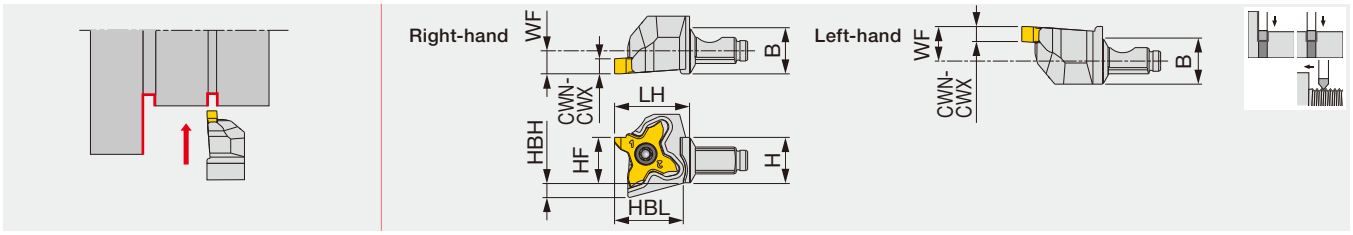


Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-Y, QC12-STCR18	CSTC-4L100DL	T-1008/5	-
QC12-STCL18-Y, QC12-STCL18	CSTC-4L100DR	T-1008/5	-
QC12-STCR18-Y-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-Y-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

Reference pages : QC12-STCR/L-Y, QC12-STCR/L-Y-CHP: Inserts → G091 -
Shank, Accessory → G115, G116, Standard cutting conditions → G097

QC12-STCR/L

Modular head for external grooving and threading

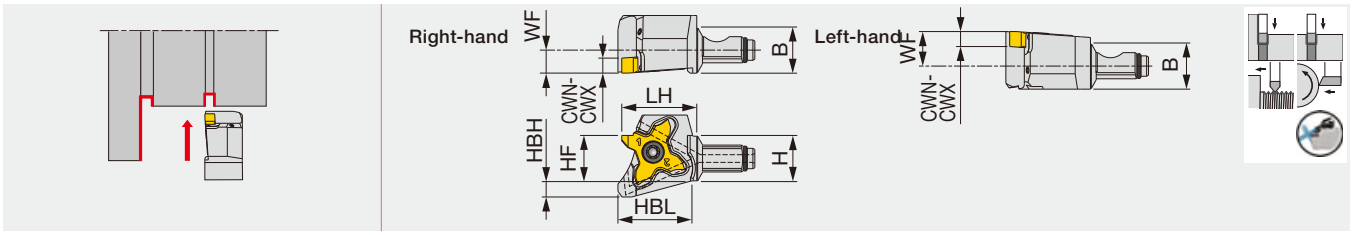


Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	3.9 (0.154")	17.9 (0.705")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	3.9 (0.154")	18.3 (0.720")	9 (0.354")	TC*18L...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
The right hand insert (R) is used for the right hand toolholders (R), and the left hand insert (L) is used for the left hand toolholders (L).

QC12-STCR/L-CHP

Modular head for external grooving and threading, with high pressure coolant capability



Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18-CHP	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	9 (0.354")	TC*18L...	1.2 (0.89)

Torque* : Recommended clamping torque: N·m (lbs·ft)
Through-coolant head
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

SPARE PARTS



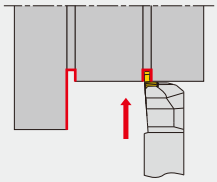


Designation	Clamping screw	Wrench	O-ring
QC12-STCR18	CSTC-4L100DL	T-1008/5	-
QC12-STCL18	CSTC-4L100DR	T-1008/5	-
QC12-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

Reference pages : QC12-STCR/L, QC12-STCR/L-CHP: Inserts → G091 -
Shank, Accessory → G115, G116, Standard cutting conditions → G097

STCR/L-18

External grooving and threading toolholder



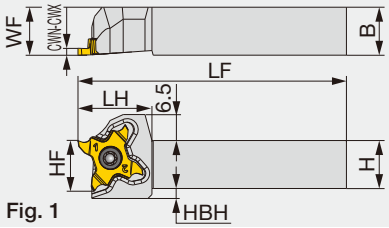


Fig. 1

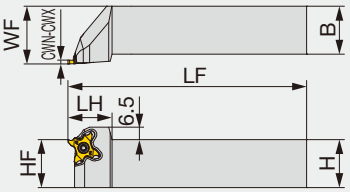
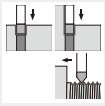


Fig. 2



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.013	0.125	0.375	0.375	4.750	0.730	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.013	0.125	0.500	0.500	4.750	0.730	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.013	0.125	0.625	0.625	4.750	0.730	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.013	0.125	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.013	0.125	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2

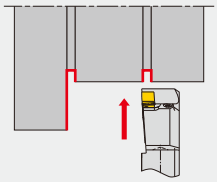
Metric	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*	Fig.
STCR/L1010X18	0.33	3.18	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.33	3.18	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.33	3.18	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.33	3.18	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.33	3.18	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.33	3.18	20	20	120	23	20	25	-	TC*18...	1.2	2

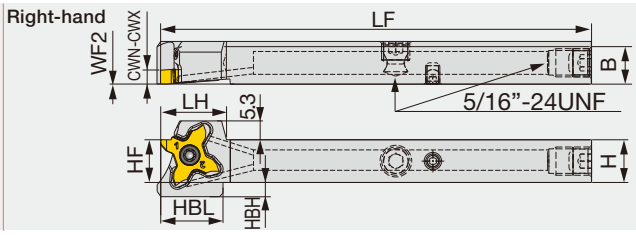
Torque: Recommended clamping torque: lbs·ft (*N·m)
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (STCR...); the left-hand insert (TC*18L...) for a left-hand holder (STCL...).

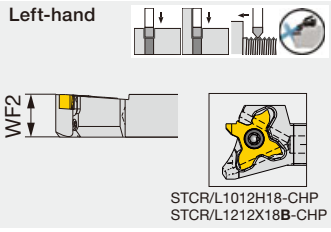
STCR/L-H/X18-CHP

Direct connection

External grooving and threading toolholder, with high pressure coolant capability







STCR/L1012H18-CHP
STCR/L1212X18**B**-CHP

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2	HBH	Insert	Torque
STCR/L08X18-CHP	0.013	0.125	0.500	0.500	4.750	0.728	0.689	0.500	0.500	0.130	TC**18...	0.89
STCR/L10X18-CHP	0.013	0.125	0.625	0.625	4.75	0.728	-	0.625	-	0	TC**18...	0.89

Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2	HBH	Insert	Torque*
STCR/L1012H18-CHP	0.33	3.18	10	12	100	17.1	17.1	10	0/12	4	TC**18...	1.2
STCR/L1212X18B-CHP	0.33	3.18	12	12	120	18.5	17.5	12	0/12	4	TC**18...	1.2
STCR/L1616X18-CHP	0.33	3.18	16	16	120	18.5	-	16	0/16	0	TC**18...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert (TC*18L...) is used for the left hand toolholders (STCL...).

SPARE PARTS








Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR**18	CSTC-4L100DL	T-1008/5	-	-	-	-
STCL**18	CSTC-4L100DR	T-1008/5	-	-	-	-
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

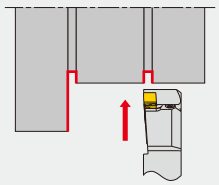
Threading pitch range: 0.8 ~ 3.0 mm

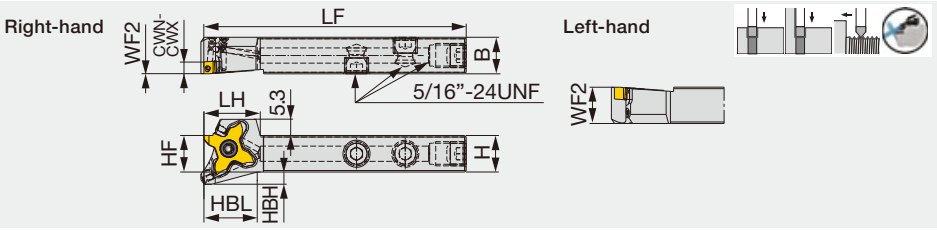
Reference pages : STCR/L-18, STCR/L-H/X18-CHP: Inserts → G091 -, Standard cutting conditions → G097

STCR/L-18-CHP

Tube connection

External grooving and threading toolholder, with high pressure coolant capability





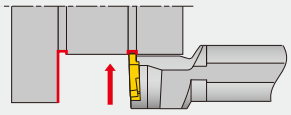
Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2(1)	HBH	Insert	Torque*
STCR/L08F18-CHP	0.013	0.125	0.500	0.500	3.344	0.728	0.689	0.500	0/0.5	0.130	TC**18	0.89

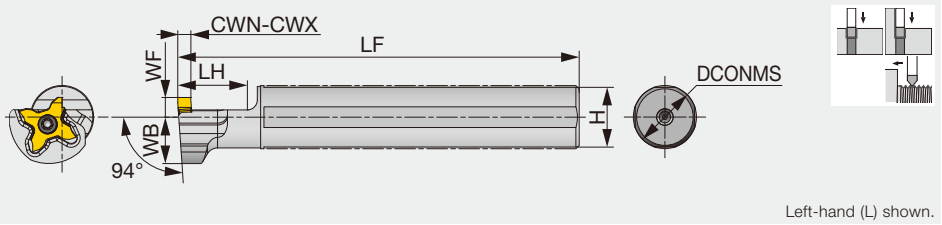
Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2(1)	HBH	Insert	Torque*
STCR/L1212F18B-CHP	0.33	3.18	12	12	85	18.5	17.5	12	0/12	4	TC**18	1.2

The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
WF2(1) : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





Left-hand (L) shown.

Metric	CWN	CWX	DCONMS	LF	LH	H	WB	WF	Insert	Torque*
JS14H-STCL18	0.33	3.18	14	100	20	13	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3.18	15.875	85	20	15	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3.18	16	85	20	15	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3.18	19.05	90	20	18	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3.18	19.05	120	20	18	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3.18	20	90	20	19	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3.18	20	120	20	19	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3.18	22	120	20	21	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3.18	25	100	20	24	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3.18	25.4	120	20	24	12.25	10	TC*18R...	1.2

The left hand toolholder (STCL...) is used with the right hand inserts (TC*18R...)
*Torque: Recommended clamping torque: N·m

SPARE PARTS






Designation	Clamping screw	Wrench	Coolant plug	Wrench
STCL**F18B-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4
STCR**F18B-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
JS...STCL18	CSTC-4L100DL	T-1008/5	-	-

Threading pitch range: 0.8 - 3.0 mm

Reference pages : STCR/L-18-CHP, JS-STCL18: Inserts → G091 -, Standard cutting conditions → G097

Selection guide for TetraMini-Cut inserts

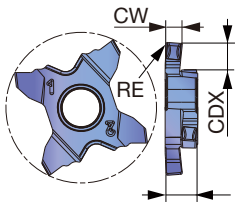
Groove width		Corner rad.		TCL18R/L (G091 page)	TCS18R/L (G091 page -)	TCG18R/L (G093 page -)	TCP18R/L (G095 page)	TCP18R/L-F (G096 page)
CW (in)	CW (mm)	RE (in)	RE (mm)	AH7025	AH7025	AH7025	AH725	SH725
0.013	0.33	0.002	0.05				●	●
0.017	0.43	0.002	0.05				●	●
0.020	0.50	0.002	0.05				●	●
0.030	0.75	0.002	0.05				●	●
0.037	0.95	0.002	0.05				●	●
0.039	1.00	0.002	0.05					●
		0.004	0.1		●	●	●	●
		0.020	0.5			●		
0.047	1.20	0.002	0.05					●
		0.004	0.1		●	●	●	●
0.049	1.25	0.002	0.05					●
		0.004	0.1		●	●	●	●
		0.008	0.2		●	●		
0.051	1.30	0.008	0.2		●	●		
0.055	1.40	0.004	0.1		●	●	●	●
		0.008	0.2		●	●		
0.057	1.45	0.002	0.05					●
		0.004	0.1		●	●	●	●
		0.008	0.2			●		
0.059	1.50	0.002	0.05					●
		0.004	0.1	●	●	●	●	●
		0.008	0.2	●	●	●		
0.062	1.58	0.031	0.79			●		
0.063	1.60	0.008	0.2		●	●		
0.067	1.70	0.008	0.2		●	●		
0.069	1.75	0.002	0.05					●
		0.004	0.1		●	●	●	●
		0.008	0.2	●	●	●		
0.073	1.85	0.008	0.2		●	●		
0.077	1.95	0.008	0.2		●	●		
0.079	2.00	0.002	0.05					●
		0.004	0.1	●	●	●	●	●
		0.008	0.2	●	●	●		
		0.039	1.0			●		
0.089	2.25	0.008	0.2		●	●		
0.091	2.30	0.008	0.2		●	●		
0.094	2.39	0.047	1.2			●		
0.098	2.50	0.004	0.1		●	●	●	●
		0.008	0.2		●	●		
		0.012	0.3	●	●	●		
0.104	2.65	0.012	0.3		●	●		
0.110	2.80	0.012	0.3		●	●		
0.118	3.00	0.004	0.1	●	●	●	●	●
		0.008	0.2	●	●	●		
		0.012	0.3	●	●	●		
		0.059	1.5			●		
0.125	3.18	0.063	1.59			●		

● : Line up

INSERT

TCL18R/L (3D chipbreaker, honed edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCL18R150-010	R	1.5	0.059	0.004	●	0.138
TCL18L150-010	L	1.5	0.059	0.004	●	0.138
TCL18R150-020	R	1.5	0.059	0.008	●	0.138
TCL18L150-020	L	1.5	0.059	0.008	●	0.138
TCL18R175-020	R	1.75	0.069	0.008	●	0.138
TCL18L175-020	L	1.75	0.069	0.008	●	0.138
TCL18R200-010	R	2	0.079	0.004	●	0.138
TCL18L200-010	L	2	0.079	0.004	●	0.138
TCL18R200-020	R	2	0.079	0.008	●	0.138
TCL18L200-020	L	2	0.079	0.008	●	0.138
TCL18R250-030	R	2.5	0.098	0.012	●	0.138
TCL18L250-030	L	2.5	0.098	0.012	●	0.138
TCL18R300-010	R	3	0.118	0.004	●	0.138
TCL18L300-010	L	3	0.118	0.004	●	0.138
TCL18R300-020	R	3	0.118	0.008	●	0.138
TCL18L300-020	L	3	0.118	0.008	●	0.138
TCL18R300-030	R	3	0.118	0.012	●	0.138
TCL18L300-030	L	3	0.118	0.012	●	0.138

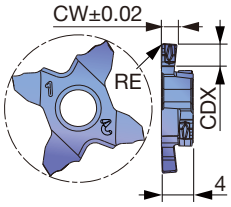
Please see page G098 for precautions of processing.

5 pieces per package

● : Line up

TCS18R (honed edge) (3D chipbreaker, honed edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079
TCS18L100-010	L	1	0.039	0.004	●	0.079
TCS18R120-010	R	1.2	0.047	0.004	●	0.079
TCS18L120-010	L	1.2	0.047	0.004	●	0.079
TCS18R125-010	R	1.25	0.049	0.004	●	0.079
TCS18L125-010	L	1.25	0.049	0.004	●	0.079

Please see page G098 for precautions of processing.

5 pieces per package

● : Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)
					AH7025	
TCS18R125-020	R	1.25	0.049	0.008	●	0.079
TCS18L125-020	L	1.25	0.049	0.008	●	0.079
TCS18R130-020	R	1.3	0.051	0.008	●	0.138
TCS18L130-020	L	1.3	0.051	0.008	●	0.138
TCS18R140-010	R	1.4	0.055	0.004	●	0.138
TCS18L140-010	L	1.4	0.055	0.004	●	0.138
TCS18R140-020	R	1.4	0.055	0.008	●	0.138
TCS18L140-020	L	1.4	0.055	0.008	●	0.138
TCS18R145-010	R	1.45	0.057	0.004	●	0.138
TCS18L145-010	L	1.45	0.057	0.004	●	0.138
TCS18R150-010	R	1.5	0.059	0.004	●	0.138
TCS18L150-010	L	1.5	0.059	0.004	●	0.138
TCS18R150-020	R	1.5	0.059	0.008	●	0.138
TCS18L150-020	L	1.5	0.059	0.008	●	0.138
TCS18R160-020	R	1.6	0.063	0.008	●	0.138
TCS18L160-020	L	1.6	0.063	0.008	●	0.138
TCS18R170-020	R	1.7	0.067	0.008	●	0.138
TCS18L170-020	L	1.7	0.067	0.008	●	0.138
TCS18R175-010	R	1.75	0.069	0.004	●	0.138
TCS18L175-010	L	1.75	0.069	0.004	●	0.138
TCS18R175-020	R	1.75	0.069	0.008	●	0.138
TCS18L175-020	L	1.75	0.069	0.008	●	0.138
TCS18R185-020	R	1.85	0.073	0.008	●	0.138
TCS18L185-020	L	1.85	0.073	0.008	●	0.138
TCS18R195-020	R	1.95	0.077	0.008	●	0.138
TCS18L195-020	L	1.95	0.077	0.008	●	0.138
TCS18R200-010	R	2	0.079	0.004	●	0.138
TCS18L200-010	L	2	0.079	0.004	●	0.138
TCS18R200-020	R	2	0.079	0.008	●	0.138
TCS18L200-020	L	2	0.079	0.008	●	0.138
TCS18R225-020	R	2.25	0.089	0.008	●	0.138
TCS18L225-020	L	2.25	0.089	0.008	●	0.138
TCS18R230-020	R	2.3	0.091	0.008	●	0.138
TCS18L230-020	L	2.3	0.091	0.008	●	0.138
TCS18R250-010	R	2.5	0.098	0.004	●	0.138
TCS18L250-010	L	2.5	0.098	0.004	●	0.138
TCS18R250-020	R	2.5	0.098	0.008	●	0.138
TCS18L250-020	L	2.5	0.098	0.008	●	0.138
TCS18R250-030	R	2.5	0.098	0.012	●	0.138
TCS18L250-030	L	2.5	0.098	0.012	●	0.138
TCS18R265-030	R	2.65	0.104	0.012	●	0.138
TCS18L265-030	L	2.65	0.104	0.012	●	0.138
TCS18R280-030	R	2.8	0.110	0.012	●	0.138
TCS18L280-030	L	2.8	0.110	0.012	●	0.138
TCS18R300-010	R	3	0.118	0.004	●	0.138
TCS18L300-010	L	3	0.118	0.004	●	0.138
TCS18R300-020	R	3	0.118	0.008	●	0.138
TCS18L300-020	L	3	0.118	0.008	●	0.138
TCS18R300-030	R	3	0.118	0.012	●	0.138
TCS18L300-030	L	3	0.118	0.012	●	0.138

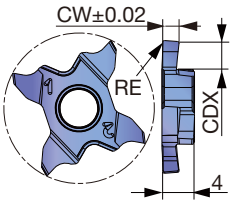
Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

Reference pages : Toolholders → G086 - G089, Standard cutting conditions → G097

TCG18R/L (honed edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCG18R100-010	R	1	0.039	0.004	●	0.079
TCG18L100-010	L	1	0.039	0.004	●	0.079
TCG18R120-010	R	1.2	0.047	0.004	●	0.079
TCG18L120-010	L	1.2	0.047	0.004	●	0.079
TCG18R125-010	R	1.25	0.049	0.004	●	0.079
TCG18L125-010	L	1.25	0.049	0.004	●	0.079
TCG18R125-020	R	1.25	0.049	0.008	●	0.079
TCG18L125-020	L	1.25	0.049	0.008	●	0.079
TCG18R130-020	R	1.3	0.051	0.008	●	0.079
TCG18L130-020	L	1.3	0.051	0.008	●	0.079
TCG18R140-010	R	1.4	0.055	0.004	●	0.138
TCG18L140-010	L	1.4	0.055	0.004	●	0.138
TCG18R140-020	R	1.4	0.055	0.008	●	0.138
TCG18L140-020	L	1.4	0.055	0.008	●	0.138
TCG18R145-010	R	1.45	0.057	0.004	●	0.138
TCG18L145-010	L	1.45	0.057	0.004	●	0.138
TCG18R145-020	R	1.45	0.057	0.008	●	0.138
TCG18L145-020	L	1.45	0.057	0.008	●	0.138
TCG18R150-010	R	1.5	0.059	0.004	●	0.138
TCG18L150-010	L	1.5	0.059	0.004	●	0.138
TCG18R150-020	R	1.5	0.059	0.008	●	0.138
TCG18L150-020	L	1.5	0.059	0.008	●	0.138
TCG18R160-020	R	1.6	0.063	0.008	●	0.138
TCG18L160-020	L	1.6	0.063	0.008	●	0.138
TCG18R170-020	R	1.7	0.067	0.008	●	0.138
TCG18L170-020	L	1.7	0.067	0.008	●	0.138
TCG18R175-010	R	1.75	0.069	0.004	●	0.138
TCG18L175-010	L	1.75	0.069	0.004	●	0.138
TCG18R175-020	R	1.75	0.069	0.008	●	0.138
TCG18L175-020	L	1.75	0.069	0.008	●	0.138
TCG18R185-020	R	1.85	0.073	0.008	●	0.138
TCG18L185-020	L	1.85	0.073	0.008	●	0.138
TCG18R195-020	R	1.95	0.077	0.008	●	0.138
TCG18L195-020	L	1.95	0.077	0.008	●	0.138
TCG18R200-010	R	2	0.079	0.004	●	0.138
TCG18L200-010	L	2	0.079	0.004	●	0.138
TCG18R200-020	R	2	0.079	0.008	●	0.138
TCG18L200-020	L	2	0.079	0.008	●	0.138
TCG18R225-020	R	2.25	0.089	0.008	●	0.138
TCG18L225-020	L	2.25	0.089	0.008	●	0.138
TCG18R230-020	R	2.3	0.091	0.008	●	0.138
TCG18L230-020	L	2.3	0.091	0.008	●	0.138
TCG18R250-010	R	2.5	0.098	0.004	●	0.138
TCG18L250-010	L	2.5	0.098	0.004	●	0.138

Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

Reference pages : Toolholders → G086 - G089, Standard cutting conditions → G097

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

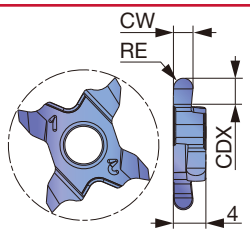
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCG18R250-020	R	2.5	0.098	0.008	●	0.138
TCG18L250-020	L	2.5	0.098	0.008	●	0.138
TCG18R250-030	R	2.5	0.098	0.012	●	0.138
TCG18L250-030	L	2.5	0.098	0.012	●	0.138
TCG18R265-030	R	2.65	0.104	0.012	●	0.138
TCG18L265-030	L	2.65	0.104	0.012	●	0.138
TCG18R280-030	R	2.8	0.110	0.012	●	0.138
TCG18L280-030	L	2.8	0.110	0.012	●	0.138
TCG18R300-010	R	3	0.118	0.004	●	0.138
TCG18L300-010	L	3	0.118	0.004	●	0.138
TCG18R300-020	R	3	0.118	0.008	●	0.138
TCG18L300-020	L	3	0.118	0.008	●	0.138
TCG18R300-030	R	3	0.118	0.012	●	0.138
TCG18L300-030	L	3	0.118	0.012	●	0.138

Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

TCG18R/L (Full R, honed edge)





Right-hand (R) shown.

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)
TCG18R100-050	R	1	0.039	0.020	●	0.079
TCG18L100-050	L	1	0.039	0.020	●	0.079
TCG18R158-079	R	1.58	0.062	0.031	●	0.138
TCG18L158-079	L	1.58	0.062	0.031	●	0.138
TCG18R200-100	R	2	0.079	0.039	●	0.138
TCG18L200-100	L	2	0.079	0.039	●	0.138
TCG18R239-120	R	2.39	0.094	0.047	●	0.138
TCG18L239-120	L	2.39	0.094	0.047	●	0.138
TCG18R300-150	R	3	0.118	0.059	●	0.138
TCG18L300-150	L	3	0.118	0.059	●	0.138
TCG18R318-159	R	3.18	0.125	0.063	●	0.138
TCG18L318-159	L	3.18	0.125	0.063	●	0.138

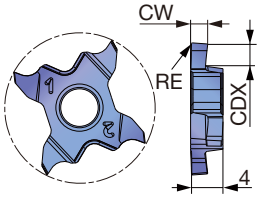
Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

Reference pages : Toolholders → G086 - G089, Standard cutting conditions → G097

TCP18R/L (lightly honed edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)
TCP18R033-005	R	0.33	0.013	0.002	●	0.031
TCP18L033-005	L	0.33	0.013	0.002	●	0.031
TCP18R043-005	R	0.43	0.017	0.002	●	0.047
TCP18L043-005	L	0.43	0.017	0.002	●	0.047
TCP18R050-005	R	0.50	0.020	0.002	●	0.047
TCP18L050-005	L	0.50	0.020	0.002	●	0.047
TCP18R075-005	R	0.75	0.030	0.002	●	0.079
TCP18L075-005	L	0.75	0.030	0.002	●	0.079
TCP18R095-005	R	0.95	0.037	0.002	●	0.079
TCP18L095-005	L	0.95	0.037	0.002	●	0.079
TCP18R100-010	R	1	0.039	0.004	●	0.079
TCP18L100-010	L	1	0.039	0.004	●	0.079
TCP18R120-010	R	1.2	0.047	0.004	●	0.079
TCP18L120-010	L	1.2	0.047	0.004	●	0.079
TCP18R125-010	R	1.25	0.049	0.004	●	0.079
TCP18L125-010	L	1.25	0.049	0.004	●	0.079
TCP18R140-010-35	R	1.4	0.055	0.004	●	0.138
TCP18L140-010-35	L	1.4	0.055	0.004	●	0.138
TCP18R145-010	R	1.45	0.057	0.004	●	0.079
TCP18L145-010	L	1.45	0.057	0.004	●	0.079
TCP18R145-010-35	R	1.45	0.057	0.004	●	0.138
TCP18L145-010-35	L	1.45	0.057	0.004	●	0.138
TCP18R150-010	R	1.5	0.059	0.004	●	0.079
TCP18L150-010	L	1.5	0.059	0.004	●	0.079
TCP18R150-010-35	R	1.5	0.059	0.004	●	0.138
TCP18L150-010-35	L	1.5	0.059	0.004	●	0.138
TCP18R175-010	R	1.75	0.069	0.004	●	0.079
TCP18L175-010	L	1.75	0.069	0.004	●	0.079
TCP18R175-010-35	R	1.75	0.069	0.004	●	0.138
TCP18L175-010-35	L	1.75	0.069	0.004	●	0.138
TCP18R200-010	R	2	0.079	0.004	●	0.098
TCP18L200-010	L	2	0.079	0.004	●	0.098
TCP18R200-010-35	R	2	0.079	0.004	●	0.138
TCP18L200-010-35	L	2	0.079	0.004	●	0.138
TCP18R250-010	R	2.5	0.098	0.004	●	0.098
TCP18L250-010	L	2.5	0.098	0.004	●	0.098
TCP18R250-010-35	R	2.5	0.098	0.004	●	0.138
TCP18L250-010-35	L	2.5	0.098	0.004	●	0.138
TCP18R300-010	R	3	0.118	0.004	●	0.098
TCP18L300-010	L	3	0.118	0.004	●	0.098
TCP18R300-010-35	R	3	0.118	0.004	●	0.138
TCP18L300-010-35	L	3	0.118	0.004	●	0.138

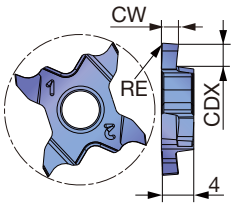
Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

Reference pages : Toolholders → G086 - G089, Standard cutting conditions → G097

TCP18R/L-F (sharp edge)





P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)
					SH725	
TCP18R033F-005	R	0.33	0.013	0.002	●	0.031
TCP18L033F-005	L	0.33	0.013	0.002	●	0.031
TCP18R043F-005	R	0.43	0.017	0.002	●	0.047
TCP18L043F-005	L	0.43	0.017	0.002	●	0.047
TCP18R050F-005	R	0.5	0.020	0.002	●	0.047
TCP18L050F-005	L	0.5	0.020	0.002	●	0.047
TCP18R075F-005	R	0.75	0.030	0.002	●	0.079
TCP18L075F-005	L	0.75	0.030	0.002	●	0.079
TCP18R095F-005	R	0.95	0.037	0.002	●	0.079
TCP18L095F-005	L	0.95	0.037	0.002	●	0.079
TCP18R100F-005	R	1	0.039	0.002	●	0.079
TCP18R100F-010	R	1	0.039	0.004	●	0.079
TCP18L100F-010	L	1	0.039	0.004	●	0.079
TCP18R120F-005	R	1.2	0.047	0.002	●	0.079
TCP18R120F-010	R	1.2	0.047	0.004	●	0.079
TCP18L120F-010	L	1.2	0.047	0.004	●	0.079
TCP18R125F-005	R	1.25	0.049	0.002	●	0.079
TCP18R125F-010	R	1.25	0.049	0.004	●	0.079
TCP18L125F-010	L	1.25	0.049	0.004	●	0.079
TCP18R140F-010-35	R	1.4	0.055	0.004	●	0.138
TCP18R145F-005-35	R	1.45	0.057	0.002	●	0.138
TCP18R145F-010	R	1.45	0.057	0.004	●	0.079
TCP18L145F-010	L	1.45	0.057	0.004	●	0.079
TCP18R145F-010-35	R	1.45	0.057	0.004	●	0.138
TCP18L145F-010-35	L	1.45	0.057	0.004	●	0.138
TCP18R150F-005-35	R	1.5	0.059	0.002	●	0.138
TCP18R150F-010	R	1.5	0.059	0.004	●	0.079
TCP18L150F-010	L	1.5	0.059	0.004	●	0.079
TCP18R150F-010-35	R	1.5	0.059	0.004	●	0.138
TCP18L150F-010-35	L	1.5	0.059	0.004	●	0.138
TCP18R175F-005-35	R	1.75	0.069	0.002	●	0.138
TCP18R175F-010	R	1.75	0.069	0.004	●	0.079
TCP18L175F-010	L	1.75	0.069	0.004	●	0.079
TCP18R175F-010-35	R	1.75	0.069	0.004	●	0.138
TCP18L175F-010-35	L	1.75	0.069	0.004	●	0.138
TCP18R200F-005-35	R	2	0.079	0.002	●	0.138
TCP18R200F-010	R	2	0.079	0.004	●	0.098
TCP18L200F-010	L	2	0.079	0.004	●	0.098
TCP18R200F-010-35	R	2	0.079	0.004	●	0.138
TCP18L200F-010-35	L	2	0.079	0.004	●	0.138
TCP18R250F-010	R	2.5	0.098	0.004	●	0.098
TCP18L250F-010	L	2.5	0.098	0.004	●	0.098
TCP18R250F-010-35	R	2.5	0.098	0.004	●	0.138
TCP18L250F-010-35	L	2.5	0.098	0.004	●	0.138
TCP18R300F-010	R	3	0.118	0.004	●	0.098
TCP18L300F-010	L	3	0.118	0.004	●	0.098
TCP18R300F-010-35	R	3	0.118	0.004	●	0.138
TCP18L300F-010-35	L	3	0.118	0.004	●	0.138

Please see page G098 for precautions of processing.

5 pieces per package
● : Line up

Reference pages : Toolholders → G086 - G089, Standard cutting conditions → G097

STANDARD CUTTING CONDITIONS

TCS18R (3D chipbreaker) , TCG18R/L (honed edge)

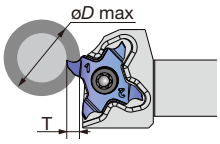
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)	
				TCG	TCS
P	Low carbon steel 1015, 1020, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
P	Carbon steels, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
M	Stainless steel 304SS, 316SS, etc.	AH7025	164 - 394	0.001 - 0.005	0.001 - 0.006
K	Gray cast iron Class 25, Class 30, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
K	Ductile cast iron 60-40-18, 80-55-06, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.001 - 0.005	0.001 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 197	0.001 - 0.005	0.001 - 0.006

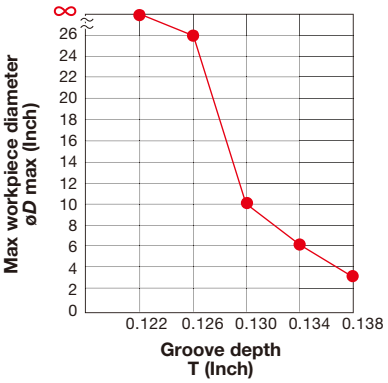
TCL18R (3D chipbreaker), TCG18R/L (Full R, honed edge)

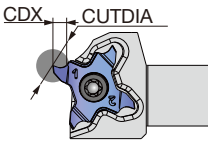
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)	
				TCL18	TCG18
P	Low carbon steel 1015, 1020, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
P	Carbon steels, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
M	Stainless steel 304SS, 316SS, etc.	AH7025	164 - 394	0.001 - 0.005	0.002 - 0.006
K	Gray cast iron Class 25, Class 30, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006
K	Ductile cast iron 60-40-18, 80-55-06, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.001 - 0.005	0.002 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 197	0.001 - 0.005	0.002 - 0.006

TCP18R/L (lightly honed edge) / TCP18R/L-F (sharp edge)

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, 1020, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
P	Carbon steels, Alloy steel 1055, 4140, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
M	Stainless steel 304SS, 316SS, etc.	First choice	SH725	164 - 394	0.001 - 0.004
M		Toughness	AH725	164 - 394	0.001 - 0.004
K	Gray cast iron Class 25, Class 30, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K		Sharpness	SH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K		Sharpness	SH725	164 - 591	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
S		Toughness	AH725	98 - 262	0.001 - 0.004
S	Superalloys Inconel718, etc.	First choice	SH725	66 - 197	0.001 - 0.004
S		Toughness	AH725	66 - 197	0.001 - 0.004







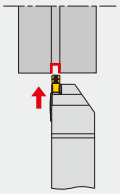
Max workpiece diameter CUTDIA (Inch)
0.276

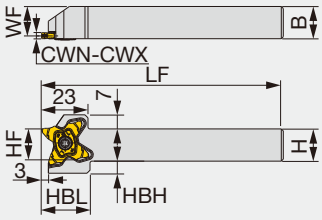
*Groove depth and max workpiece diameter (øDmax)

Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.

STCR/L-27

External grooving toolholder







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque
STCR/L06-27	0.020	0.125	0.375	0.375	5.000	0.375	0.315	0.374	0.945	TC*27...	1.84
STCR/L08-27	0.020	0.125	0.500	0.500	5.000	0.500	0.440	0.287	0.945	TC*27...	1.84
STCR/L10-27	0.020	0.125	0.625	0.625	5.000	0.625	0.570	0.236	0.945	TC*27...	1.84
STCR/L12-27	0.020	0.125	0.750	0.750	5.000	0.75	0.690	0.118	0.945	TC*27...	1.84
STCR/L16-27	0.020	0.125	1.000	1.000	5.500	1.000	0.940	-	-	TC*27...	1.84

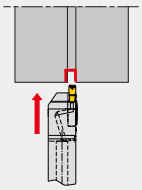
Metric	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L1010-27	0.5	3.18	10	10	120	10	8.5	9.5	24	TC*27...	2.5
STCR/L1212-27	0.5	3.18	12	12	120	12	10.5	8	24	TC*27...	2.5
STCR/L1616-27	0.5	3.18	16	16	120	16	14.5	6	24	TC*27...	2.5
STCR/L2020-27	0.5	3.18	20	20	120	20	18.5	2	24	TC*27...	2.5

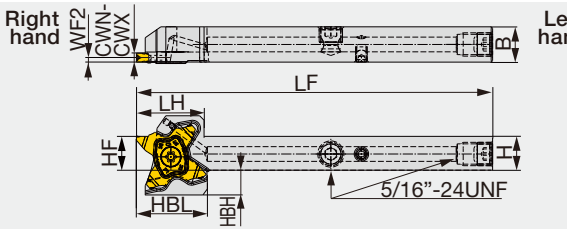
Torque: Recommended clamping torque: lbs·ft (*N·m)

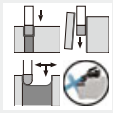
STCR/L1212-27-CHP

Direct connection

Grooving and parting-off toolholder. High pressure coolant capability.







Inch	CWN	CWX	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Insert	Torque
STCR/L08-27-CHP	0.020	0.125	0.500	0.500	4.750	0.906	0.500	0.059/0.413	0.287	0.945	TC*27...	1.84

Metric	CWN	CWX	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Insert	Torque*
STCR/L1212-27-CHP	0.5	3.18	12	12	120	23	12	1.5/10.5	8	24	TC*27...	2.5

(1) The above WF value is valid when an insert width of CW = 0.118" is mounted.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Make sure to avoid tool interferences when used on Swiss machines

SPARE PARTS





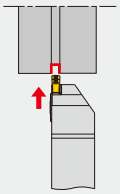
Designation	Screw	Wrench
STCR****-27, STCR...-27-CHP	SR16-212-01397L	T-2010/5
STCL****-27, STCL...-27-CHP	SR16-212-01397	T-2010/5

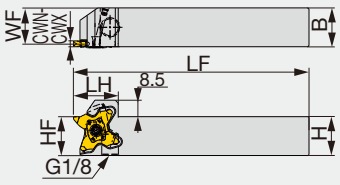
Reference pages : STCR/L-27, STCR/L1212-27-CHP:
Inserts → G100 - G104, Standard cutting conditions → G104

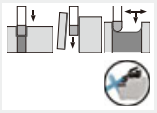
STCR/L2020-27-CHP

Tube connection

External grooving and parthing-off toolholder with high pressure coolant supply







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
STCR/L12-27-CHP	0.020	0.125	0.750	0.750	5.000	0.906	0.750	0.690	TC*27...	1.84

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
STCR/L2020-27-CHP	0.5	3.18	20	20	120	23	20	18.5	TC*27...	2.5

Torque: Recommended clamping torque: lbs·ft (*N·m)

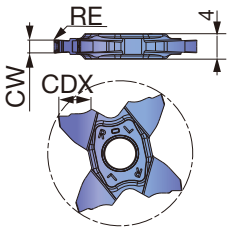
SPARE PARTS

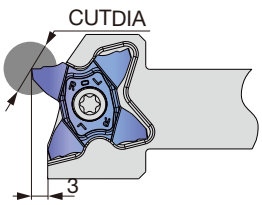


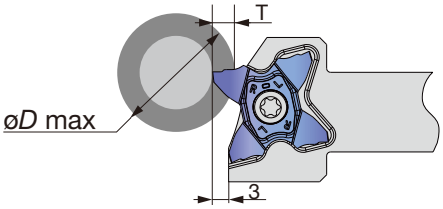

Designation	Screw	Wrench
STCR...-27-CHP	SR16-212-01397L	T-2010/5
STCL...-27-CHP	SR16-212-01397	T-2010/5

INSERT - FOR GROOVING AND PARTING OFF

TCL27







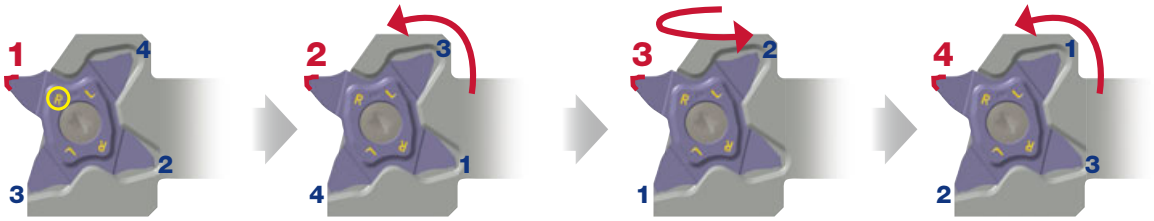
P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725			CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
									T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCL27-150-015	1.5	0.059	0.006	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCL27-200-020	2	0.079	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCL27-250-020	2.5	0.098	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCL27-300-020	3	0.118	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

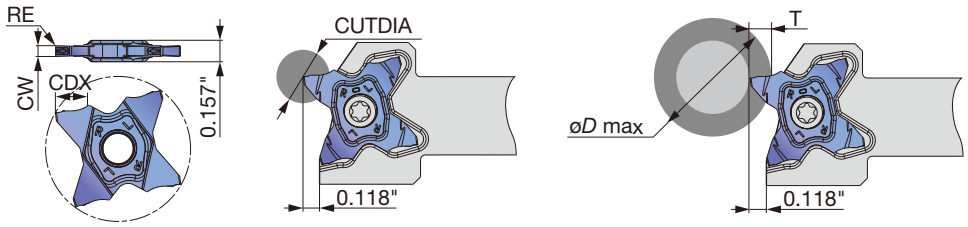
HOW TO INDEX INSERTS



1. Right-hand edge (R) is used for the right- hand toolholders.
2. Rotate the insert
3. Flip over the insert
4. Rotate the insert

INSERT - FOR GROOVING AND PARTING OFF

TCS27



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

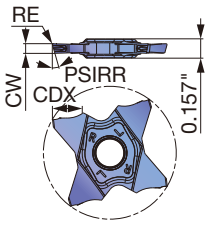
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)											
							T≤0.039	T≤0.079	T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-050-000	0.5	0.020	0	●	0.039	0.079	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.020	0.0016	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.030	0.004	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0.031	0	●	0.063	0.126	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.039	0.0024	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.039	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0.041	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0.047	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.049	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.049	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0.055	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0.058	0	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.059	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-150-020	1.5	0.059	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-157-015	1.57	0.062	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.067	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.069	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.069	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.070	0.007	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.073	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.077	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.079	0.004	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-200-020	2	0.079	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-222-015	2.22	0.087	0.006	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.091	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.094	0.006	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-247-020	2.47	0.097	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-010	2.5	0.098	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-030	2.5	0.098	0.012	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-270-010	2.7	0.106	0.004	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-287-020	2.87	0.113	0.008	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-300-000	3	0.118	0	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-020	3	0.118	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-030	3	0.118	0.012	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-040	3	0.118	0.016	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-315-015	3.15	0.124	0.006	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCS27-318-020	3.18	0.125	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

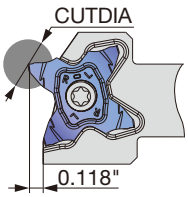
5 pieces per package
● : Line up

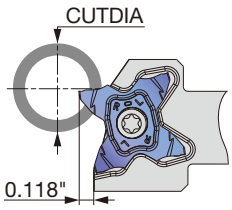
Reference pages : Toolholders → G099 - G100, Standard cutting conditions → G104

INSERT- FOR PARTING OFF

TCS27-R/L







Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

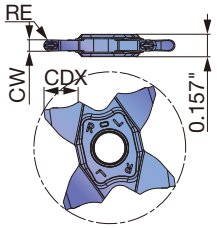
★ : First choice
☆ : Second choice

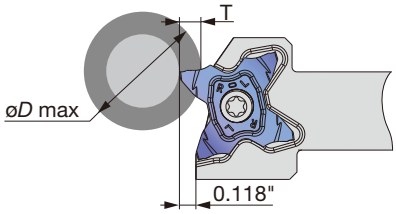
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PSIRL	PSIRR	Max. parting off dia. CUTDIA (in) Solid bar	Max. parting off dia. CUTDIA (in) Tube
TCS27-100-15R	R	1	0.039	0.0024	●	0.138	0°	15°	0.276	23.622
TCS27-100-15L	L	1	0.039	0.0024	●	0.138	15°	0°	0.276	23.622
TCS27-150-6R	R	1.5	0.059	0.0024	●	0.224	0°	6°	0.449	1.378
TCS27-150-6L	L	1.5	0.059	0.0024	●	0.224	6°	0°	0.449	1.378
TCS27-150-15R	R	1.5	0.059	0.0024	●	0.224	0°	15°	0.449	1.378
TCS27-150-15L	L	1.5	0.059	0.0024	●	0.224	15°	0°	0.449	1.378
TCS27-200-6R	R	2	0.079	0.004	●	0.252	0°	6°	0.504	1.181
TCS27-200-6L	L	2	0.079	0.004	●	0.252	6°	0°	0.504	1.181
TCS27-200-15R	R	2	0.079	0.004	●	0.252	0°	15°	0.504	1.181
TCS27-200-15L	L	2	0.079	0.004	●	0.252	15°	0°	0.504	1.181

5 pieces per package
● : Line up

INSERT- FOR GROOVING AND PROFILING

TCS27 (Full R)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

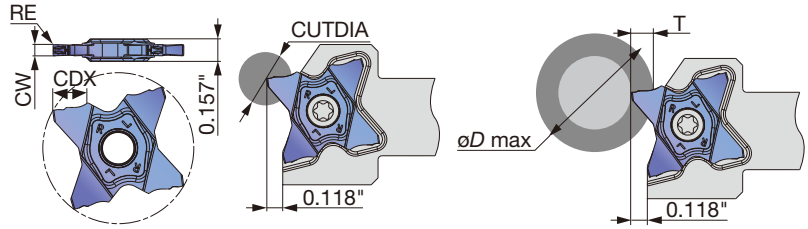
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	Relation of groove depth (T) and Max. diameter (øD max) (in) T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-157-079	1.57	0.062	0.031	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	0.079	0.039	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	0.094	0.047	●	0.224	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-300-150	3	0.118	0.059	●	0.252	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

Reference pages : Toolholders → G099 - G100, Standard cutting conditions → G104

INSERT- FOR GROOVING AND PARTING OFF

TCM27



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

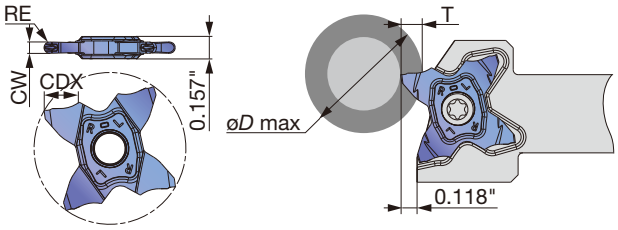
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725			CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
									T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-150-010	1.5	0.059	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-150-020	1.5	0.059	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-157-015	1.57	0.062	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.067	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.069	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.069	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.070	0.007	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.073	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.077	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.079	0.004	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-200-020	2	0.079	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-222-015	2.22	0.087	0.006	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.091	0.008	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.094	0.006	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-247-020	2.47	0.097	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-010	2.5	0.098	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-030	2.5	0.098	0.012	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-270-010	2.7	0.106	0.004	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-287-020	2.87	0.113	0.008	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-300-000	3	0.118	0	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-020	3	0.118	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-030	3	0.118	0.012	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-040	3	0.118	0.016	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-315-015	3.15	0.124	0.006	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCM27-318-020	3.18	0.125	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

5 pieces per package
● : Line up

Reference pages : Toolholders → G099 - G100, Standard cutting conditions → G104

INSERT - FOR GROOVING AND PROFILING

TCM27 (Full R)



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
							T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-157-079	1.57	0.059	0.031	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	0.059	0.039	●	0.118	0.236	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	0.062	0.047	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-300-150	3	0.125	0.059	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

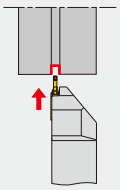
STANDARD CUTTING CONDITIONS

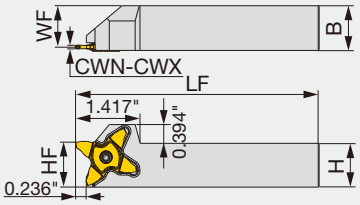
ISO	Workpiece material	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)						Depth of cut for profiling (with full radius insert)
				Grooving, parting-off			Parting-off (with hand)	Profiling (with full radius insert)		
				TCL27	TCS27	TCM27	TCS27	TCS27	TCM27	
P	Steel 1045, etc.	AH725	328 - 656	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Alloy steel 4137, etc.	AH725	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
M	Stainless steel 304, etc.	AH725	328 - 492	0.001 - 0.005	0.002 - 0.006	0.002 - 0.008	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
K	Gray cast iron No.250, etc.	AH725	164 - 591	0.001 - 0.005	0.002 - 0.006	0.002 - 0.010	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Ductile cast iron 60-40-18, etc.	AH725	164 - 394	0.001 - 0.005	0.002 - 0.006	0.002 - 0.008	0.002 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
S	Titanium alloys Ti-6Al-4V, etc.	AH725	98 - 197	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006	0.002 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020
	Superalloys Inconel718, etc.	AH725	66 - 164	0.001 - 0.005	0.002 - 0.006	0.002 - 0.006	0.002 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020

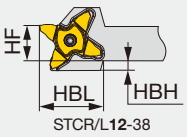
Reference pages : Toolholders → G099 - G100

STCR/L-38

External grooving and parting toolholder









Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque
STCR/L12-38	0.059	0.157	0.750	0.750	5.000	0.750	0.670	0.234	1.378	TCL38...	1.84
STCR/L16-38	0.059	0.157	1.000	1.000	5.500	1.000	0.920	-	-	TCL38...	1.84
STCR/L20-38	0.059	0.157	1.250	1.250	5.500	1.250	1.170	-	-	TCL38...	1.84

Metric	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L2020-38	1.5	4	20	20	120	20	18.1	5	35	TCL38...	2.5
STCR/L2525-38	1.5	4	25	25	135	25	23.1	-	-	TCL38...	2.5
STCR/L3232-38	1.5	4	32	32	135	32	30.1	-	-	TCL38...	2.5

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

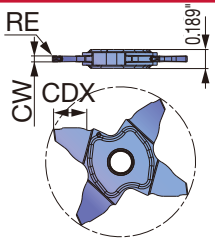


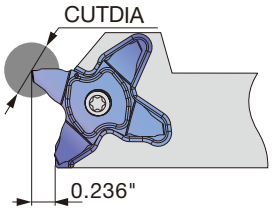


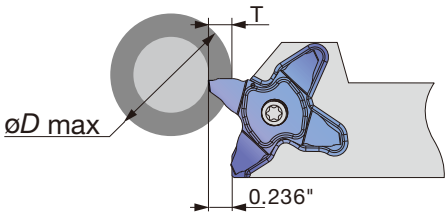
Designation	Screw	Wrench
STCR****-38 (-CHP)	SR16-212-01397L	T-2010/5
STCL****-38 (-CHP)	SR16-212-01397	T-2010/5

INSERT - FOR GROOVING AND PARTING OFF

TCL38







P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) T ≤ 0.197"	T ≤ 0.236"	T ≤ 0.276"	T ≤ 0.315"	T ≤ 0.354"	T ≤ 0.394"
TCL38-150-020	1.5	0.059	0.008	●	0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-200-020	2	0.079	0.008	●	0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-300-020	3	0.118	0.008	●	0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969
TCL38-400-030	4	0.157	0.012	●	0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969

5 pieces per package

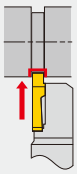
● : Line up

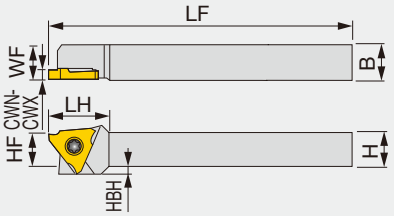
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed: f (ipr) Grooving, Parting TCL38
P	Carbon steel (1045, etc.)	AH7025	262 - 591	0.001 - 0.007
	Alloy steel (4140, etc.)	AH7025	164 - 591	0.001 - 0.007
M	Alloy steel (304SS, etc.)	AH7025	164 - 492	0.001 - 0.006
K	Grey cast iron (Class 25, etc.)	AH7025	164 - 591	0.001 - 0.006
	Ductile cast iron (60-40-18, etc.)	AH7025	164 - 394	0.001 - 0.006
S	Titanium alloys (Ti-6Al-4V, etc.)	AH7025	98 - 197	0.001 - 0.006
	Superalloys (Inconel718, etc.)	AH7025	66 - 164	0.001 - 0.006

JSTGR/L

Screw-on external grooving toolholder, for Swiss lathes





Without offset

Right-hand (R) shown.

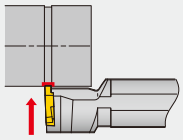
Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
JSTGR/L063	0.013	0.118	0.375	0.375	5	0.75	0.375	0.375	0.100	JTGR/L3...	0.89
JSTGR/L083	0.013	0.118	0.500	0.500	5	0.75	0.500	0.500	-	JTGR/L3...	0.89
JSTGR/L103	0.013	0.118	0.625	0.625	5	0.75	0.625	0.625	-	JTGR/L3...	0.89

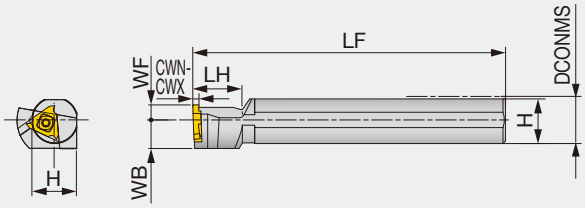
Metric	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)

JS-TGL3

Screw-on external grooving toolholder, for Swiss lathes





Left-hand (L) shown.

Metric	CWN	CWX	DCONMS	WF	LF	LH	H	WB	Insert	Torque*
JS19K-TGL3	0.33	3	19.05	6	125	20	18	11.5	JTGR3...	3.0
JS20K-TGL3	0.33	3	20	6	125	20	19	11.5	JTGR3...	3.0
JS22K-TGL3	0.33	3	22	6	125	20	21	11.5	JTGR3...	3.0
JS25K-TGL3	0.33	3	25.4	10	125	20	24	12.7	JTGR3...	3.0

Torque*: Recommended clamping torque (N·m)
Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS





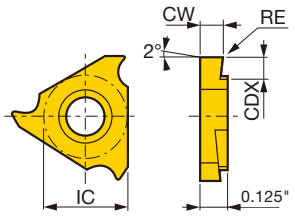
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSTGR/L...	CSTB-4SD	T-8F	(T-8L)
JS**-TGL3	CSTB-4S	T-15F	-

Reference pages : JSTGR/L, JS-TGL3: Inserts → G107 - G108
Standard cutting conditions → G108

INSERT

JTG (Sharp edge)





Right hand (R) shown.

		Coated			Cermet	Uncoated
P	Steel	★	★		★	☆
M	Stainless	★	★			
K	Cast iron				☆	★
N	Non-ferrous					★
S	Superalloys					★
H	Hard materials					

★ : First choice
☆ : Second choice

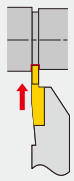
Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	SH725	J740	NS9530	TH10	CDX (in)	IC (mm)	Max. groove depth
JTGR3033F	R	0.33	0.013	0.001	●	●		●	0.028	9.53	0.028
JTGL3033F	L	0.33	0.013	0.001		●		●	0.028	9.53	0.028
JTGR3033F-005	R	0.33	0.013	0.002	●				0.028	9.53	0.028
JTGR3043F	R	0.43	0.017	0.001		●			0.043	9.53	0.028
JTGR3050F	R	0.5	0.020	0.001	●	●	●	●	0.043	9.53	0.043
JTGL3050F	L	0.5	0.020	0.001	●	●		●	0.043	9.53	0.043
JTGR3050F-005	R	0.5	0.020	0.002	●				0.043	9.53	0.043
JTGL3050F-005	L	0.5	0.020	0.002	●				0.043	9.53	0.043
JTGR3065F	R	0.65	0.026	0.001	●	●			0.075	9.53	0.043
JTGR3065F-010	R	0.65	0.026	0.004	●				0.075	9.53	0.043
JTGR3075F	R	0.75	0.030	0.001	●	●	●	●	0.075	9.53	0.075
JTGL3075F	L	0.75	0.030	0.001	●	●	●	●	0.075	9.53	0.075
JTGR3075F-010	R	0.75	0.030	0.004	●				0.075	9.53	0.075
JTGL3075F-010	L	0.75	0.030	0.004	●				0.075	9.53	0.075
JTGR3080F	R	0.8	0.031	0.001	●	●			0.075	9.53	0.075
JTGR3080F-010	R	0.8	0.031	0.004	●				0.075	9.53	0.075
JTGR3085F	R	0.85	0.033	0.001	●	●			0.075	9.53	0.075
JTGR3095F	R	0.95	0.037	0.001	●	●	●	●	0.075	9.53	0.075
JTGL3095F	L	0.95	0.037	0.001	●	●		●	0.075	9.53	0.075
JTGR3095F-010	R	0.95	0.037	0.004	●				0.075	9.53	0.075
JTGL3095F-010	L	0.95	0.037	0.004	●				0.075	9.53	0.075
JTGR3100F	R	1	0.039	0.002	●	●	●	●	0.083	9.53	0.075
JTGL3100F	L	1	0.039	0.002	●	●		●	0.083	9.53	0.075
JTGR3100F-010	R	1	0.039	0.004	●				0.083	9.53	0.075
JTGL3100F-010	L	1	0.039	0.004	●				0.083	9.53	0.075
JTGR3110F	R	1.1	0.043	0.002	●	●			0.083	9.53	0.075
JTGR3120F	R	1.2	0.047	0.002	●	●			0.083	9.53	0.075
JTGR3120F-010	R	1.2	0.047	0.004	●				0.083	9.53	0.075
JTGR3125F	R	1.25	0.049	0.002	●	●	●	●	0.083	9.53	0.083
JTGL3125F	L	1.25	0.049	0.002	●	●		●	0.083	9.53	0.083
JTGR3125F-010	R	1.25	0.049	0.004	●				0.083	9.53	0.083
JTGL3125F-010	L	1.25	0.049	0.004	●				0.083	9.53	0.083
JTGR3130F	R	1.3	0.051	0.002	●	●			0.083	9.53	0.083
JTGR3140F	R	1.4	0.055	0.002	●	●			0.083	9.53	0.083
JTGR3140F-010	R	1.4	0.055	0.004	●				0.083	9.53	0.083
JTGR3145F	R	1.45	0.057	0.002	●	●	●	●	0.083	9.53	0.083
JTGL3145F	L	1.45	0.057	0.002		●		●	0.083	9.53	0.083
JTGR3145F-010	R	1.45	0.057	0.004	●				0.083	9.53	0.083
JTGR3150F	R	1.5	0.059	0.002	●	●	●	●	0.083	9.53	0.083
JTGL3150F	L	1.5	0.059	0.002	●	●		●	0.083	9.53	0.083
JTGR3150F-010	R	1.5	0.059	0.004	●				0.083	9.53	0.083
JTGL3150F-010	L	1.5	0.059	0.004	●				0.083	9.53	0.083
JTGR3175F	R	1.75	0.069	0.002	●	●	●	●	0.083	9.53	0.083
JTGL3175F	L	1.75	0.069	0.002		●	●	●	0.083	9.53	0.083
JTGR3175F-010	R	1.75	0.069	0.004	●				0.083	9.53	0.083

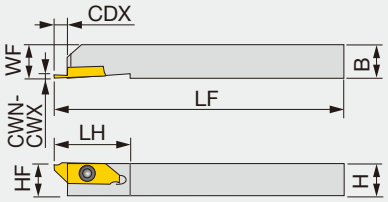
●: Line up

| | | |

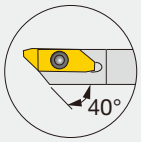
JSXGR/L

Screw-on toolholder without offset for front / reverse turning & external grooving





Without offset



C-type

Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert
JSXGR/L1010K8-C	0.7	2	6.7	10	10	125	29	10	10	JX*R/L8...
JSXGR/L1212K8-C	0.7	2	6.7	12	12	125	29	12	12	JX*R/L8...
JSXGR/L1616K8	0.7	2	6.5	16	16	125	29	16	16	JX*R/L8...
JSXGR/L2020K8	0.7	2	6.5	20	20	125	29	20	20	JX*R/L8...

Can be wrenched also from the back with a double-head screw.
This toolholders can be used for JXG insert (grooving), JFX insert (front-turning), JXK insert (reverse-turning)

SPARE PARTS



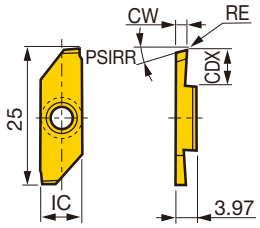


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSXGR/L	CSTB-4SD	T-8F	(T-8L)

INSERT

JXG (handed insert with sharp edge)





Right hand (R) shown.

P	Steel	★	☆	
M	Stainless	★		
K	Cast iron		★	
N	Non-ferrous		★	
S	Superalloys	☆	★	
H	Hard materials			

★ : First choice
☆ : Second choice

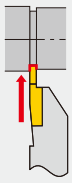
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated J740	Uncoated TH10	CDX (mm)	IC (mm)	PSIRR (mm)
JXGR8070FA	R	0.028	0.7	0	●		4.5	8	15
JXGL8070FA	L	0.028	0.7	0	●	●	4.5	8	15
JXGR8070FA-005	R	0.028	0.7	0.05	●	●	4.5	8	15
JXGR8100FA	R	0.039	1	0	●		6	8	15
JXGL8100FA	L	0.039	1	0	●	●	6	8	15
JXGR8100FA-005	R	0.039	1	0.05	●	●	6	8	15
JXGR8100FA45	R	0.039	1	0	●		4.5	8	15
JXGR8100FA45-005	R	0.039	1	0.05	●	●	4.5	8	15
JXGR8150FA	R	0.059	1.5	0	●		6	8	15
JXGL8150FA	L	0.059	1.5	0	●	●	6	8	15
JXGR8150FA-005	R	0.059	1.5	0.05	●	●	6	8	15
JXGR8150FA50	R	0.059	1.5	0	●		5	8	15
JXGR8150FA50-005	R	0.059	1.5	0.05	●	●	5	8	15
JXGR8180FA	R	0.071	1.8	0	●		6	8	15
JXGR8180FA-005	R	0.071	1.8	0.05	●	●	6	8	15
JXGR8200FA	R	0.079	2	0	●		6	8	15
JXGL8200FA	L	0.079	2	0	●	●	6	8	15
JXGR8200FA-005	R	0.079	2	0.05	●	●	6	8	0
JXGR8200FN	R	0.079	2	0	●		6	8	0
JXGL8200FN	L	0.079	2	0	●	●	6	8	0
JXGR8200FN-005	R	0.079	2	0.05	●	●	6	8	0

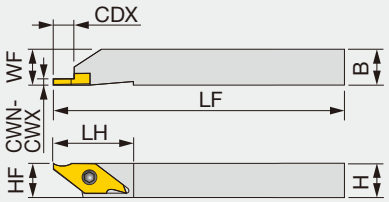
●: Line up

Reference pages: JSXGR/L: Standard cutting conditions → G111

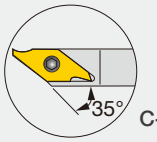
JSVGR/L

Screw-on external grooving toolholder, for Swiss lathes





Without offset



C-type

Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSVGR/L062.5	0.013	0.079	0.028 - 0.217	0.375	0.375	5	0.875	0.375	0.375	JVGR/L...	1.70
JSVGR/L082.5	0.013	0.079	0.028 - 0.217	0.500	0.500	5	0.875	0.500	0.500	JVGR/L...	1.70
JSVGR/L102.5	0.013	0.079	0.028 - 0.217	0.625	0.625	5	0.875	0.625	0.625	JVGR/L...	1.70

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	6.2	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	6.2	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	6.2	16	16	125	23	16	16	JVGR/L...	2.3

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS





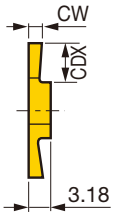
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVGR/L	CSTB-3S	T-9F	(T-9L)

INSERT

JVG (with hand, sharp edge)







Right hand (R) shown.

| | | Coated | | | Cermet | Uncoated | | |

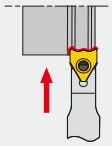
STANDARD CUTTING CONDITIONS (JXG and JVG inserts)

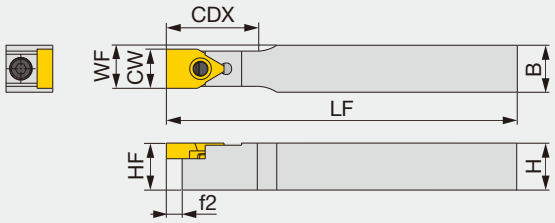
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.0039
		J740	33 - 328	0.0004 - 0.0039
		NS9530	164 - 492	0.0004 - 0.0039
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.0039
		J740	33 - 328	0.0004 - 0.0039
M	Stainless steel 303SS, etc.	SH725	164 - 656	0.0004 - 0.0039
		J740	33 - 328	0.0004 - 0.0039
		NS9530	164 - 492	0.0004 - 0.0039
N	Aluminum alloys, Brass Si < 12%, etc.	TH10	33 - 656	0.0004 - 0.0039
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.0039

TUNGHEAVY GROOVE

FPGN

Lever-lock toolholder for external wide grooving and profiling





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque
FPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10...	1.62
FPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10...	1.62
FPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10...	1.62
FPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15...	1.62
FPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15...	1.62
FPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20...	6.27

Metric	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque*
FPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10...	2.2
FPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10...	2.2
FPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10...	2.2
FPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15...	2.2
FPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15...	2.2
FPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20...	8.5

PSGB insert blank is available for tailored inserts.
Torque: Recommended clamping torque: lbs·ft (*N·m)

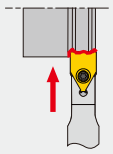
SPARE PARTS

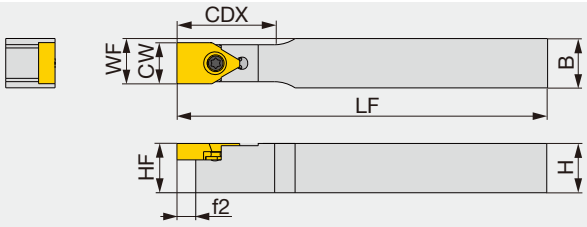
Designation	Lever	Clamping screw	Spring	Wrench
FPGN*****-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN*****-20T..., 25T...	FCL8	FCS6	BP-9	P-5

Reference pages: FPGN: Inserts → G112, Standard cutting conditions → G113

SPGN

Screw-on toolholder for external wide grooving and profiling





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque
SPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10	0.96
SPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10	0.96
SPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10	0.96
SPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15	2.58
SPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15	2.58
SPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20	3.69

Metric	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque*
SPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10	2.3
SPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10	2.3
SPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10	2.3
SPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15	3.5
SPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15	3.5
SPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20	5

PSGB insert blank is available for tailored inserts. Can be used with profile grooving inserts, only
Torque: Recommended clamping torque: lbs·ft (*N·m)

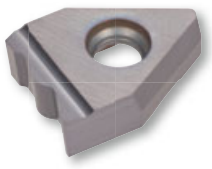
SPARE PARTS

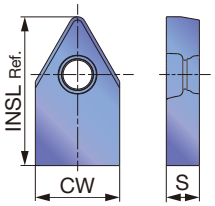
Designation	Clamping screw	Wrench
SPGN*****-10T20	CSTB-3L081	T-8F
SPGN*****-15T25	CSTB-4	T-15F
SPGN*****-20T..., 25T...	CSTB-5	T-20F

INSERT

PSGB (Blank for wide profile grooving inserts*)

Specially tailored profile insert





P	Steel	☆	★			
M	Stainless		★			
K	Cast iron	★				
N	Non-ferrous	★				
S	Superalloys	☆				
H	Hard materials					

★ : First choice
☆ : Second choice

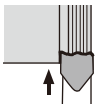
Designation	CW±0.025 (mm)	CW±0.001 (in)	Uncoated TH10	Uncoated UX30					INSL (in)	S (in)
PSGB10	10.2	0.402	●	●					0.709	0.157
PSGB15	15.2	0.598	●	●					0.787	0.197
PSGB20	20.2	0.795	●	●					1.063	0.256
PSGB25	25.2	0.992	●	●					1.063	0.256

These are blanks (semi-finished products) for wide profile grooving inserts that can be tailored.

Package quantity = 5pcs.
● : Line up

Reference pages : Toolholders → G111 - G112

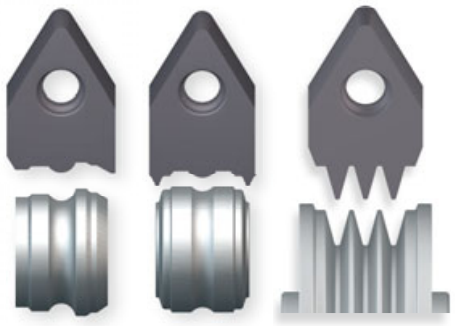
STANDARD CUTTING CONDITIONS



Wide profile grooving

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 1055, etc.	< 200	UX30	165 - 490
	Alloy steel 4140, 8620, etc.	< 300	UX30	165 - 390
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200	UX30	165 - 390
K	Gray cast iron Class 25, Class 30, etc.	-	TH10	165 - 490
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	TH10	165 - 390
N	Aluminum alloys Si < 12%, etc.	-	TH10	330 - 1640

- Custom shaped inserts can be supplied on customer's request, according to the designated final shape on part drawing.
- Semi-finished blanks PSGB types are offered for purchase.



External
Grooving
Internal
Parting-off
Threading

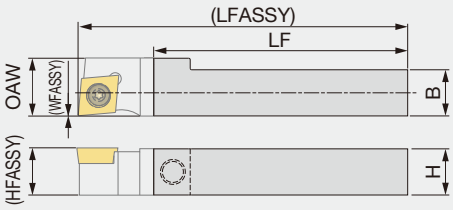
MINIFORCE TURN
STANDARD CUTTING CONDITIONS
FOR EXTERNAL TURNING

Applications	ISO	Workpiece material	Priority	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
For swiss type automatic lathes	P	Low carbon steels Carbon steels 1045, etc. Low alloy steels Alloy steels 4140, etc.	First choice	JS	SH725	164 - 591	0.004 - 0.118	0.001 - 0.004
			With high sharpness	JSS	SH725	164 - 591	0.004 - 0.059	0.001 - 0.004
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened 174, etc.	First choice	JS	SH725	164 - 591	0.004 - 0.049	0.001 - 0.004
			With high sharpness	JSS	SH725	164 - 591	0.004 - 0.059	0.001 - 0.004
For small size CNC lathes	P	Low carbon steels Carbon steels 1045, etc. Low alloy steels Alloy steels 4140, etc.	First choice	SS	AH725	164 - 591	0.006 - 0.059	0.002 - 0.008
				TS	AH725	164 - 591	0.012 - 0.079	0.003 - 0.012
			For improved surface finish	SS	NS9530	164 - 656	0.006 - 0.059	0.002 - 0.008
				TS	NS9530	164 - 656	0.012 - 0.079	0.003 - 0.012
			For wear resistance	SS	GT9530	164 - 820	0.006 - 0.059	0.002 - 0.008
				TS	GT9530	164 - 820	0.012 - 0.079	0.003 - 0.012
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened 174, etc.	First choice	SS	AH8015	164 - 492	0.006 - 0.059	0.002 - 0.008
			For impact resistance	TS	AH8015	164 - 492	0.012 - 0.079	0.003 - 0.012

J-SERIES
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels Carbon steels 1045, etc. Low alloy steels Alloy steels 4140, etc.	First choice	SH725	164 - 656	0.0004 - 0.008
		For impact resistance	AH725	164 - 656	0.0004 - 0.008
M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened 174, etc.	First choice	SH725	164 - 656	0.0004 - 0.008
		For impact resistance	AH725	164 - 656	0.0004 - 0.008
S	Titanium alloys Ti-6Al-4V, etc. Superalloys Inconel718, etc.	First choice	SH725	66 - 262	0.0004 - 0.008
		For impact resistance	AH725	66 - 262	0.0004 - 0.008

Shank for modular heads



Inch	H	B	WFASSY	LF	OAW	HFASSY	LFASSY(1)	Torque
QC-08F	0.500	0.500	0	2.560	0.590	0.500	3.346	2.21
QC-08X	0.500	0.500	0	3.940	0.590	0.500	4.724	2.21
Metric	**H**	**B**	**WFASSY**	**LF**	**OAW**	**HFASSY**	**LFASSY(1)**	**Torque***
QC-1212F	12	12	0	65	15	12	85	3
QC-1212X	12	12	0	100	15	12	120	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) The size is true when the modular head with LH = 19.5 mm is mounted.

QC-08-CHP and QC-1212-CHP

Shank for modular heads, with high pressure coolant capability

Tube connection

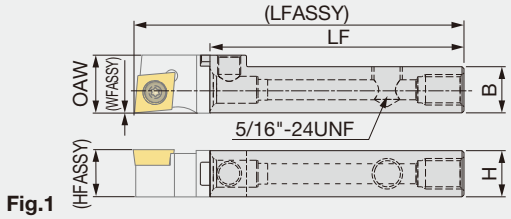


Fig.1

Direct connection

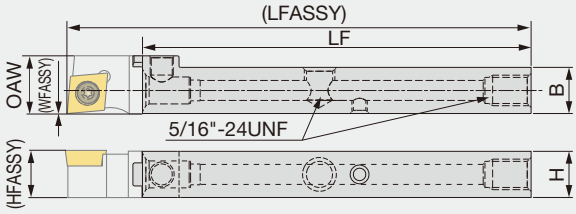


Fig.2

Inch	H	B	LF	WFASSY	OAW	HFASSY	LFASSY(1)	Torque	Fig.
QC-08F-CHP	0.500	0.500	2.560	0	0.590	0.500	3.346	2.21	1
QC-08X-CHP (*)	0.500	0.500	3.940	0	0.590	0.500	4.724	2.21	2
Metric	**H**	**B**	**LF**	**WFASSY**	**OAW**	**HFASSY**	**LFASSY(1)**	**Torque***	**Fig.**
QC-1212F-CHP	12	12	65	0	15	12	85	3	1
QC-1212X-CHP (*)	12	12	100	0	15	12	120	3	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
Through-coolant shank
(*) : Compatible to the direct internal coolant supply system without the use of external coolant hose.
(1) The size is true when the modular head with LH = 19.5 mm is mounted.

QC-08-F10-CHP and QC-1216-F15-CHP

Stepped-head shank for modular heads, with high pressure coolant capability

Tube connection

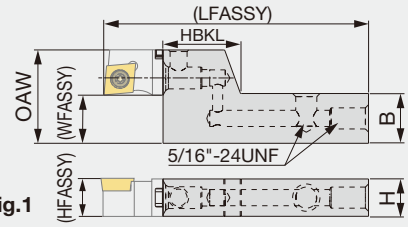


Fig.1

Direct connection

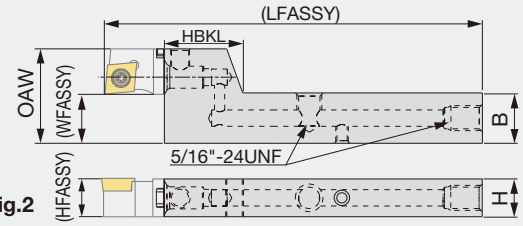


Fig.2

Inch	H	B	LF	OAW	WFASSY	HFASSY	LFASSY(1)	HBKL	Torque	Fig.
QC-08F-F10-CHP	0.500	0.625	2.559	1.220	0.625	0.500	3.346	0.980	2.21	1
QC-08X-F10-CHP (1)	0.500	0.625	3.937	1.220	0.625	0.500	4.724	0.980	2.21	2
Metric	**H**	**B**	**LF**	**OAW**	**WFASSY**	**HFASSY**	**LFASSY(1)**	**HBKL**	**Torque***	**Fig.**
QC-1216F-F15-CHP	12	16	65	30	15	12	85	25	3	1
QC-1216X-F15-CHP (1)	12	16	100	30	15	12	120	25	3	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
QC12 heads only can be mounted on these shanks.
(*) : Compatible to the direct internal coolant supply system without the use of external coolant hose.
(1) The size is true when the modular head with LH = 19.5 mm is mounted.

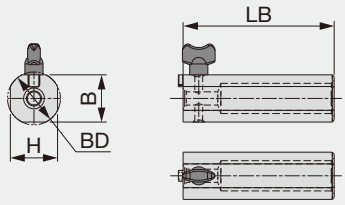
SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
QC-**F/X	SRM6X0.5-26977	P-3	-	-	-	-
QC-**F-...	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	-	-
QC-**X-...	SRM6X0.5-26977	P-3	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

QC-12D28EXC

Modular head holder for insert change





Metric	BD	LB	H	B
QC-12D28EXC	28	80	25	25

Note: This is a dedicated modular-head holder designed to facilitate insert changes. Do not use this holder for machining as it may cause damages to tool, workpiece, machine, and possible human injury.

SPARE PARTS



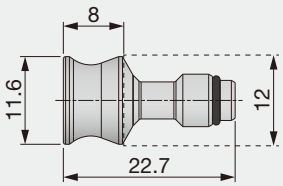
Designation	Fixing screw
QC-12D28EXC	KNOBM5X10



ModuMini-Turn modular heads are small. When it is difficult to change inserts while holding the modular head with fingers, use the dedicated holder to facilitate insert changes.

QC12-STOPPER

Protective plug for shank



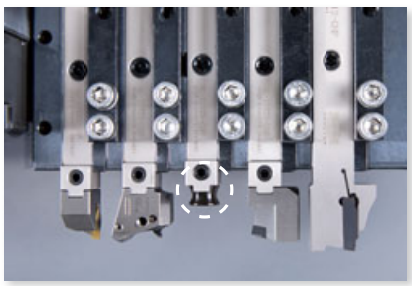
Unit: mm

Designation
QC12-STOPPER

SPARE PARTS

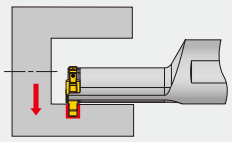


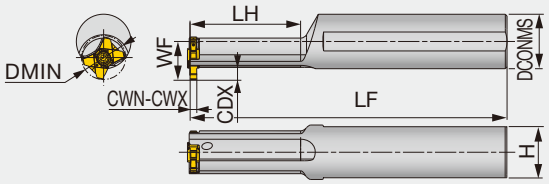
Designation	O-ring
QC12-STOPPER	ORSS-0454.5X1.0NBR70

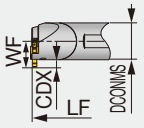


The cutting head located in the feed direction of the Y-axis tool can be removed to make room for machining larger-sized barstock. If this is the case, attach the plug to the shank to protect the coupling surface from chips, as well as prevent coolant leakage during machining.

Internal grooving toolholder







Right hand (R) shown.

Inch	Material	CWN	CWX	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque*
A08-STCIR/L10-D07U	Steel	0.059	0.118	0.438	0.500	0.984	4.000	0.339	0.475	TCIG10...	0.74
A08-STCIR/L10-D08U	Steel	0.059	0.118	0.500	0.500	1.220	4.000	0.339	0.475	TCIG10...	0.74
E08-STCIR/L10-D10U	Carbide	0.059	0.118	0.625	0.500	-	5.000	0.339	0.475	TCIG10...	0.74
A10-STCIR/L12-D09U	Steel	0.059	0.118	0.563	0.625	1.299	4.500	0.441	0.600	TCIG12...	0.96
A10-STCIR/L12-D11U	Steel	0.059	0.118	0.688	0.625	1.614	4.500	0.441	0.600	TCIG12...	0.96
E10-STCIR/L12-D13U	Carbide	0.059	0.118	0.813	0.625	-	6.000	0.441	0.600	TCIG12...	0.96

Metric	Material	CWN	CWX	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque*
A12H-STCIR/L10-D105	Steel	1.5	3	10.5	12	25	100	8.3	11	TCIG10...	1
A12H-STCIR/L10-D120	Steel	1.5	3	12	12	31	100	8.3	11	TCIG10...	1
E12K-STCIR/L10-D150	Carbide	1.5	3	15	12	-	125	8.3	11	TCIG10...	1
A16J-STCIR/L12-D130	Steel	1.5	3	13	16	33	110	11.3	15	TCIG12...	1.3
A16J-STCIR/L12-D160	Steel	1.5	3	16	16	41	110	11.3	15	TCIG12...	1.3
E16M-STCIR/L12-D200	Carbide	1.5	3	20	16	-	150	11.3	15	TCIG12...	1.3

Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

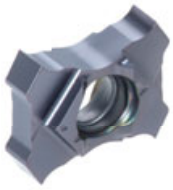


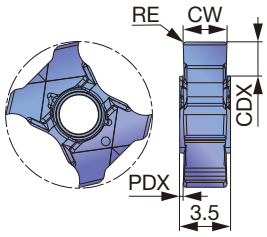
Designation	Clamping screw
A/E-STCIR10-...	CSTB-2.2L053DR
A/E-STCIL10-...	CSTB-2.2L053DL
A/E-STCIR12-...	CSTB-2.5L054DR
A/E-STCIL12-...	CSTB-2.5L054DL

Reference pages: A/E-STCIR/L: Inserts, Standard cutting conditions → G118

INSERTS

TCIG





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

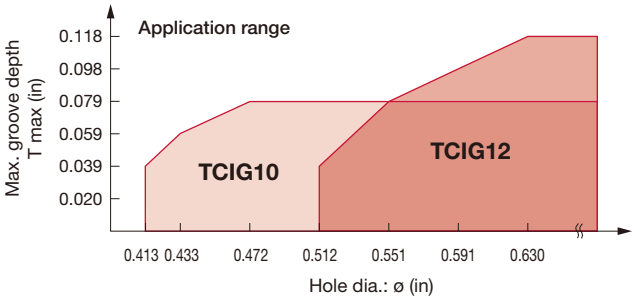
★ : First choice

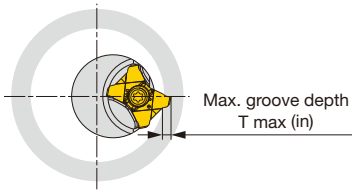
Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PDX (in)
TCIG10-050-005	0.5	0.020	0.05	●	0.039	0.059
TCIG10-122-008	1.22	0.048	0.08	●	0.079	0.045
TCIG10-142-008	1.42	0.056	0.08	●	0.079	0.041
TCIG10-150-010	1.5	0.059	0.1	●	0.079	0.039
TCIG10-172-008	1.72	0.068	0.08	●	0.079	0.035
TCIG10-200-010	2	0.079	0.1	●	0.079	0.030
TCIG10-250-020	2.5	0.098	0.2	●	0.079	0.020
TCIG10-300-020	3	0.118	0.2	●	0.079	0.010
TCIG12-100-010	1	0.039	0.1	●	0.098	0.049
TCIG12-150-010	1.5	0.059	0.1	●	0.118	0.039
TCIG12-197-008	1.97	0.078	0.08	●	0.118	0.030
TCIG12-200-020	2	0.079	0.2	●	0.118	0.030
TCIG12-224-008	2.24	0.088	0.08	●	0.118	0.025
TCIG12-250-020	2.5	0.098	0.2	●	0.118	0.020
TCIG12-277-015	2.77	0.109	0.15	●	0.118	0.015
TCIG12-300-020	3	0.118	0.2	●	0.118	0.010

● : Line up

Shallower groove depths (T max) for smaller bores

Maximum groove depths (T max) for TCIG10 inserts are smaller than the CDX value shown above when the grooving bore diameter is < 0.472" ; and for TCIG12, when the bore diameter is < 0.63".
See the chart below for T max values in relation to the given bore diameter.





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045,4140, etc.	< 300 HB	First choice	98 - 262	0.0004 - 0.002
M	Stainless steel 303SS, etc.	< 200 HB	First choice	98 - 164	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	33 - 164	0.0004 - 0.002

Toolholders for internal grooving, with through coolant

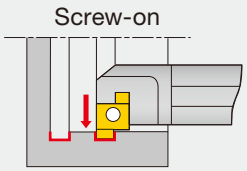
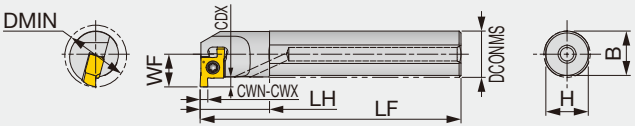
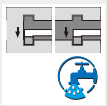


Fig. 1



Fig. 2





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque*	Fig.
A08H-SNGR06-D080	Steel	1	2	8	1.5	8	7	-	100	18	4.73	6GMR..., 6GR...	0.7	1
A08H-SNGR07-D100	Steel	1	2	10	1.5	8	7	-	100	23	5.8	7GMR..., 7GR...	1.0	1
A10K-SNGR07-D120	Steel	1	2	12	1.5	10	9	-	125	29	6.8	7GMR..., 7GR...	1.0	1
A10K-SNGR08-D140	Steel	1.5	3.5	14	2	10	9	-	125	15	7.6	8GMR..., 8GR...	1.0	2
A12M-SNGR08-D160	Steel	1.5	3.5	16	2	12	11	11.5	150	18	8.6	8GMR..., 8GR...	1.0	2
A16Q-SNGR09-D200	Steel	1.5	3.5	20	3	16	15	15.5	180	20	11.6	9GMR..., 9GR...	1.3	2
A20R-SNGR09-D240	Steel	1.5	3.5	24	3	20	18	19	200	25	13.6	9GMR..., 9GR...	1.3	2
E08X-SNGR07-D100	Carbide	1	2	10	1.5	8	7.5	-	120.5	35	5.8	7GMR..., 7GR...	1.0	1
E10X-SNGR07-D120	Carbide	1	2	12	1.5	10	9	-	143.5	45	6.8	7GMR..., 7GR...	1.0	1
E10X-SNGR08-D140	Carbide	1.5	3.5	14	2	10	9	-	146	-	7.6	8GMR..., 8GR...	1.0	2
E12X-SNGR08-D160	Carbide	1.5	3.5	16	2	12	11	-	174.8	-	8.6	8GMR..., 8GR...	1.0	2
E16X-SNGR09-D200	Carbide	1.5	3.5	20	3	16	15	-	194.6	-	11.6	9GMR..., 9GR...	1.5	2

Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR).
Torque*: Recommended clamping torque (N·m)

SPARE PARTS



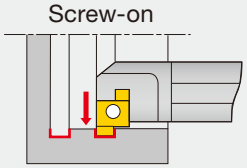


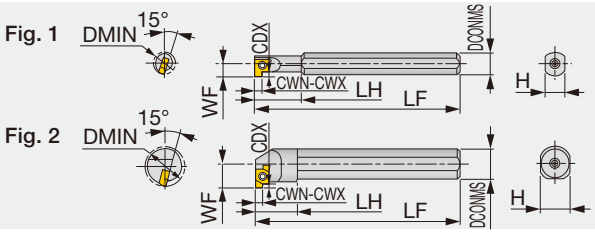
Designation	Clamping screw	Wrench
A**-SNGR06-D...	CSTB-2L040	T-6F
A**-SNGR07-D...	CSTB-2.2S	T-7F
A**-SNGR08-D...	CSTB-2.2	T-7F
A**-SNGR09-D...	CSTB-2.5L080	T-8F
E**-SNGR07-D...	CSTB-2.2S	T-7F
E**-SNGR08-D...	CSTB-2.2	T-7F
E**-SNGR09-D...	CSTB-2.5L080	T-8F

Reference pages: A/E-SNGR: Inserts → G121, G122, Standard cutting conditions → G123

SNGR/L

Toolholders for internal grooving





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*	Fig.
SNGR/L08H06	Steel	1	2	8	1.5	8	7	100	18	4.7	6GMR..., 6GR/L...	0.7	1
SNGR/L08H07	Steel	1	2	10	1.5	8	7	100	23	5.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10K07	Steel	1	2	12	1.5	10	9	125	29	6.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10K08	Steel	1.5	3.5	14	2	10	9	125	15	7.6	8GMR..., 8GR/L...	1.0	2
SNGR/L12M08	Steel	1.5	3.5	16	2	12	11	150	18	8.6	8GMR..., 8GR/L...	1.0	2
SNGR/L16Q09	Steel	1.5	3.5	20	3	16	15	180	20	11.6	9GMR..., 9GR/L...	1.3	2
SNGR/L20R09	Steel	1.5	3.5	24	3	20	18	200	25	13.6	9GMR..., 9GR/L...	1.3	2
SNGR/L08K06SC	Carbide	1	2	8	1.5	8	7	125	28	4.7	6GMR..., 6GR/L...	0.7	1
SNGR/L08K07SC	Carbide	1	2	10	1.5	8	7	125	35	5.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10M07SC	Carbide	1	2	12	1.5	10	9	150	45	6.8	7GMR..., 7GR/L...	1.0	1
SNGR/L10M08SC	Carbide	1.5	3.5	14	2	10	9	150	45	7.6	8GMR..., 8GR/L...	1.0	2
SNGR/L12Q08SC	Carbide	1.5	3.5	16	2	12	11	180	-	8.6	8GMR..., 8GR/L...	1.0	2
SNGR/L16R09SC	Carbide	1.5	3.5	20	3	16	15	200	-	11.6	9GMR..., 9GR/L...	1.5	2

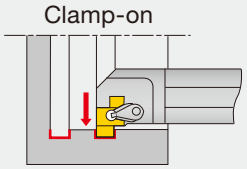
Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR), and use the left-hand insert (☐GL) with the left-hand holder (☐NGL).
Torque*: Recommended clamping torque (N·m)

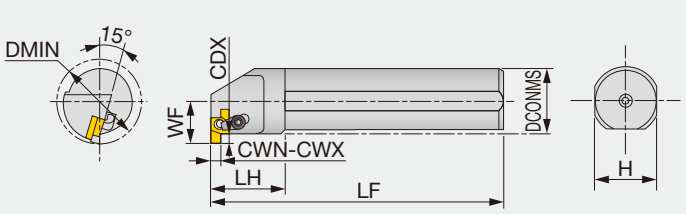
SPARE PARTS

Designation	Clamping screw	Wrench
SNGR/L***06	CSTB-2L040	T-6F
SNGR/L***07	CSTB-2.2S	T-7F
SNGR/L***08	CSTB-2.2	T-7F
SNGR/L***09	CSTB-2.5L080	T-8F
SNGR/L***06SC	CSTB-2L040	T-6F
SNGR/L***07SC	CSTB-2.2S	T-7F
SNGR/L***08SC	CSTB-2.2	T-7F
SNGR/L***09SC	CSTB-2.5L080	T-8F

CNGR/L

Toolholders for internal grooving





Right hand (R) shown.

Metric	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
CNGR/L25S15	2	5	32	5	25	23	250	30	18.1	15GR/L...	7
CNGR/L32T15	2	5	40	5	32	30	300	35	22.1	15GR/L...	7
CNGR/L40U15	2	5	48	5	40	38	350	45	26.1	15GR/L...	7

Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR), and use the left-hand insert (☐GL) with the left-hand holder (☐NGL).
Torque*: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp set	Screw	Shim	Wrench
CNGR...	CSP22	DTS5-3.5	SGSR151	T-20F
CNGL...	CSP22	DTS5-3.5	SGSL151	T-20F

Optional parts for CNG holders

Use the following parts for screw clamp options.

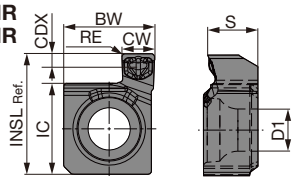


Designation	Clamping screw	Wrench
CNGR/L...	CSTB-3.5L	T-15F

Reference pages: SNGR/L, CNGR/L: Inserts → G121, G122, Standard cutting conditions → G123

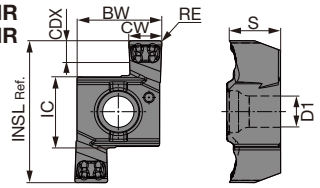
**GMR/L

6GMR
7GMR



Single edge

8GMR
9GMR



Double edge

Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

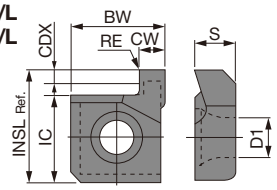
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated AH7025	CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
6GMR100-015	R	0.039	1	0.15	●	1.5	0.219	0.092	0.187	0.254	0.091
7GMR200-020	R	0.079	2	0.2	●	1.5	0.219	0.121	0.219	0.290	0.102
8GMR150-020	R	0.059	1.5	0.2	●	2	0.242	0.152	0.219	0.400	0.102
9GMR200-020	R	0.079	2	0.2	●	3	0.305	0.183	0.250	0.510	0.113
9GMR300-020	R	0.118	3	0.2	●	3	0.305	0.183	0.250	0.510	0.113

● : Line up

Reference pages: Toolholder → G119, G120, Standard cutting conditions → G123

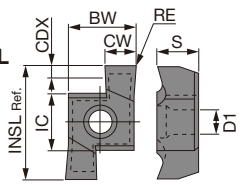
**GR/L

6GR/L
7GR/L



Single edge

8GR/L
9GR/L
15GR/L



Double edge

Right hand (R) shown.

		Cermet	Uncoated	
P	Steel	★		★
M	Stainless			★
K	Cast iron	☆	★	
N	Non-ferrous		★	
S	Superalloys		☆	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
6GR100	R	0.039	1	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.091
6GL100	L	0.039	1	0.2			●	1.5	0.220	0.092	0.187	0.254	0.091
6GR150	R	0.059	1.5	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.091
6GL150	L	0.059	1.5	0.2		●	●	1.5	0.220	0.092	0.187	0.254	0.091
6GR200	R	0.079	2	0.2	●	●	●	1.5	0.220	0.092	0.187	0.254	0.091
6GL200	L	0.079	2	0.2		●	●	1.5	0.220	0.092	0.187	0.254	0.091
7GR100	R	0.039	1	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GR150	R	0.059	1.5	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GR200	R	0.079	2	0.2	●	●	●	1.5	0.220	0.121	0.219	0.290	0.102
7GL200	L	0.079	2	0.2		●	●	1.5	0.220	0.121	0.219	0.290	0.102
8GR150	R	0.059	1.5	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GR200	R	0.079	2	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL200	L	0.079	2	0.2		●		2	0.244	0.152	0.219	0.400	0.102
8GR250	R	0.098	2.5	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL250	L	0.098	2.5	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
8GR300	R	0.118	3	0.2	●	●	●	2	0.244	0.152	0.219	0.400	0.102
8GL300	L	0.118	3	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
8GR350	R	0.138	3.5	0.2		●	●	2	0.244	0.152	0.219	0.400	0.102
9GR150	R	0.059	1.5	0.2	●	●	●	2	0.303	0.183	0.250	0.510	0.113
9GL150	L	0.059	1.5	0.2	●		●	2	0.303	0.183	0.250	0.510	0.113
9GR200	R	0.079	2	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GL200	L	0.079	2	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GR250	R	0.098	2.5	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GL250	L	0.098	2.5	0.2	●		●	3	0.303	0.183	0.250	0.510	0.113
9GR300	R	0.118	3	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GL300	L	0.118	3	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GR350	R	0.138	3.5	0.2	●	●	●	3	0.303	0.183	0.250	0.510	0.113
9GL350	L	0.138	3.5	0.2	●		●	3	0.303	0.183	0.250	0.510	0.113
15GR200	R	0.079	2	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR250	R	0.098	2.5	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR300	R	0.118	3	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GL300	L	0.118	3	0.2			●	3	0.425	0.201	0.362	0.819	0.189
15GR350	R	0.138	3.5	0.2	●	●	●	3	0.425	0.201	0.362	0.819	0.189
15GR400	R	0.157	4	0.2	●	●	●	4	0.425	0.201	0.362	0.819	0.189
15GR450	R	0.177	4.5	0.2		●	●	4	0.425	0.201	0.362	0.819	0.189
15GL450	L	0.177	4.5	0.2		●		4	0.425	0.201	0.362	0.819	0.189
15GR500	R	0.197	5	0.2		●	●	5	0.425	0.201	0.362	0.819	0.189

Note: Use the right-hand insert (☐GR) with the right-hand holder (☐NGR), and use the left-hand insert (☐GL) with the left-hand holder (☐NGL).

● : Line up

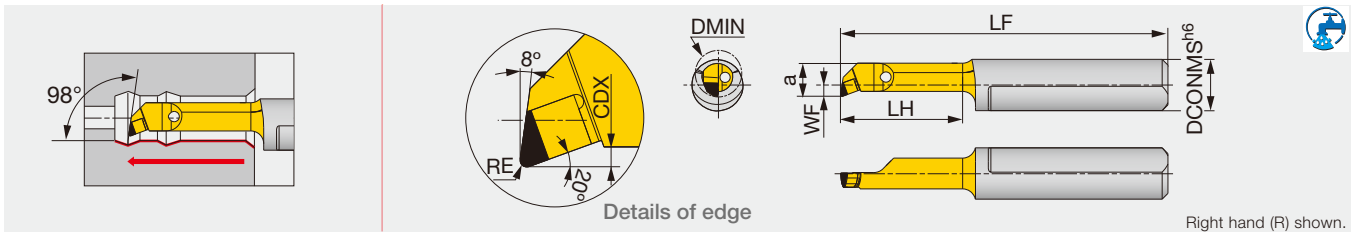
Reference pages: Toolholder → G119, G120, Standard cutting conditions → G123

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed rate: *f* (ipr) **GMR...	Feed rate: *f* (ipr) **GR/L...
P	Carbon steel 1045, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
	Alloy steel 4137, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
M	Stainless steel 304SS, etc.	AH7025	164 - 394	0.0012 - 0.0047	-
		UX30	131 - 328	-	0.0012 - 0.0039
K	Gray cast irons Class 25, etc.	AH7025	164 - 722	0.0012 - 0.0047	-
		TH10	197 - 656	-	0.002 - 0.0059
	Ductile cast irons 60-40-18, etc.	AH7025	164 - 591	0.0012 - 0.0047	-
		TH10	131 - 525	-	0.002 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.0012 - 0.0047	-
		TH10	66 - 164	-	0.002 - 0.0031
	Superalloys Inconel718, etc.	AH7025	66 - 197	0.0012 - 0.0047	-
		TH10	33 - 98	-	0.0012 - 0.0031

TINYMINITURN JBTR

For boring, profiling, and chamfering

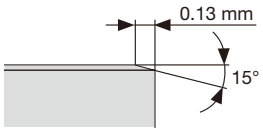


Metric	BX310	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBTR04060010-D028ST	●	2.8	4	0.9	2.6	22	6	0.3	0.1
JBTR04095010-D028ST	●	2.8	4	0.9	2.6	25.5	9.5	0.3	0.1
JBTR04070015-D040ST	●	4	4	1.5	3.5	23	7	0.5	0.15
JBTR04110015-D040ST	●	4	4	1.5	3.5	27	11	0.5	0.15
JBTR07090020-D050ST	●	5	7	0.6	4.15	25	9	0.4	0.2
JBTR07140020-D050ST	●	5	7	0.6	4.15	30	14	0.4	0.2

● : Line up

Edge preparation

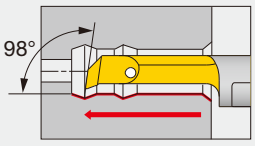
ST: T01315



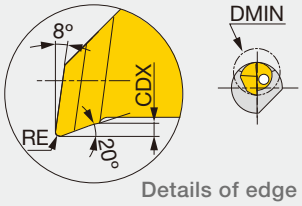
Reference pages : JBTR: Standard cutting conditions → G136

JBTR/L

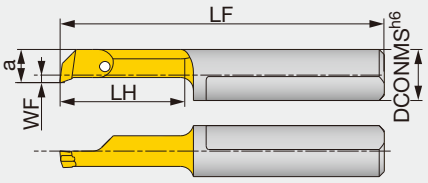
Solid boring bar for boring, profiling, and chamfering



with coolant hole



Details of edge



Right hand (R) shown.

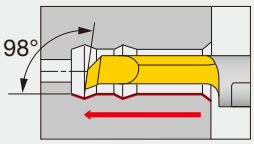
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE +0.05 0
JBTR04020004-D006	●	▲	0.6	4	-1.5	0.5	18.5	2	0.08	0.04
JBTR04030004-D006	●	▲	0.6	4	-1.5	0.5	19.5	3	0.08	0.04
JBTR04045005-D010	●	▲	1	4	-1.1	0.9	21	4.5	0.1	0.05
JBTR04065005-D010	●	▲	1	4	-1.1	0.9	23	6.5	0.1	0.05
JBTR04040005-D020	●	▲	2	4	-0.3	1.7	20.5	4	0.1	0.05
JBTR04090005-D020	●	▲	2	4	-0.3	1.7	25.5	9	0.1	0.05
JBTR04140005-D020	●	▲	2	4	-0.3	1.7	30.5	14	0.1	0.05
JBTR/L04090010-D028	●	▲	2.8	4	0.9	2.6	25.5	9	0.2	0.1
JBTR/L04150010-D028	●	▲	2.8	4	0.9	2.6	31.5	15	0.2	0.1
JBTR/L04190010-D028	●	▲	2.8	4	0.9	2.6	35.5	19	0.2	0.1
JBTR/L04090010-D040	●	▲	4	4	1.5	3.5	25.5	9	0.3	0.1
JBTR/L04150010-D040	●	▲	4	4	1.5	3.5	31.5	15	0.3	0.1
JBTR/L04190010-D040	●	▲	4	4	1.5	3.5	35.5	19	0.3	0.1
JBTR04230010-D040	●	▲	4	4	1.5	3.5	39.5	23	0.3	0.1
JBTR04270010-D040	●	▲	4	4	1.5	3.5	43.5	27	0.3	0.1
JBTR/L07090015-D050	●	▲	5	7	0.9	4.4	25	9	0.5	0.15
JBTR/L07140015-D050	●	▲	5	7	0.9	4.4	30	14	0.5	0.15
JBTR/L07190015-D050	●	▲	5	7	0.9	4.4	35	19	0.5	0.15
JBTR/L07240015-D050	●	▲	5	7	0.9	4.4	40	24	0.5	0.15
JBTR07290015-D050	●	▲	5	7	0.9	4.4	45	29	0.5	0.15
JBTL07290015-D050		▲	5	7	0.9	4.4	45	29	0.5	0.15
JBTR07340015-D050	●	▲	5	7	0.9	4.4	50	34	0.5	0.15
JBTL07340015-D050	●		5	7	0.9	4.4	50	34	0.5	0.15
JBTR/L07140015-D060	●	▲	6	7	1.8	5.3	30	14	0.5	0.15
JBTR/L07210015-D060	●	▲	6	7	1.8	5.3	37	21	0.5	0.15
JBTR/L07240015-D060	●	▲	6	7	1.8	5.3	40	24	0.5	0.15
JBTR/L07290015-D060	●	▲	6	7	1.8	5.3	45	29	0.5	0.15
JBTR07340015-D060	●	▲	6	7	1.8	5.3	50	34	0.5	0.15
JBTR07410015-D060	●	▲	6	7	1.8	5.3	57	41	0.5	0.15
JBTR/L07190015-D068	●	▲	6.8	7	2.8	6.3	35	19	0.6	0.15
JBTR07240015-D068	●	▲	6.8	7	2.8	6.3	40	24	0.6	0.15
JBTR/L07290015-D068	●	▲	6.8	7	2.8	6.3	45	29	0.6	0.15
JBTR/L07340015-D070	●	▲	7	7	2.8	6.3	50	34	0.6	0.15
JBTR07390015-D070	●	▲	7	7	2.8	6.3	55	39	0.6	0.15
JBTR07440015-D070	●	▲	7	7	2.8	6.3	60	44	0.6	0.15
JBTR07490015-D070	●	▲	7	7	2.8	6.3	65	49	0.6	0.15

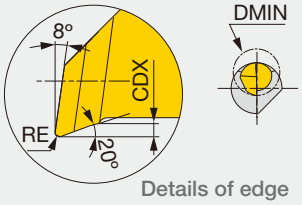
● : Line up
▲ : To be discontinued in April 2025

Reference pages : JBTR/L: Standard cutting conditions → G136

TBTR/L

Solid boring bar for boring, profiling, and chamfering





Details of edge

Right hand (R) shown.

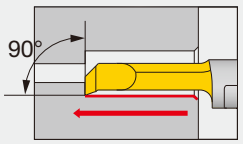
Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBTR04045005-D010	●	1	4	-1.1	0.9	21	4.5	0.1	0.05
TBTR04065005-D010	●	1	4	-1.1	0.9	23	6.5	0.1	0.05
TBTR04040005-D020	●	2	4	-0.3	1.7	20.5	4	0.1	0.05
TBTR04090005-D020	●	2	4	-0.3	1.7	25.5	9	0.1	0.05
TBTR04140005-D020	●	2	4	-0.3	1.7	30.5	14	0.1	0.05
TBTR/L04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBTR04150010-D028	●	2.8	4	0.9	2.6	31.5	15	0.2	0.1
TBTR04190010-D028	●	2.8	4	0.9	2.6	35.5	19	0.2	0.1
TBTR04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
TBTR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBTR04190010-D040	●	4	4	1.5	3.5	35.5	19	0.3	0.1
TBTR04230010-D040	●	4	4	1.5	3.5	39.5	23	0.3	0.1
TBTR04270010-D040	●	4	4	1.5	3.5	43.5	27	0.3	0.1
TBTR07090015-D050	●	5	7	0.9	4.4	25	9	0.5	0.15
TBTR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBTR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15
TBTR07240015-D050	●	5	7	0.9	4.4	40	24	0.5	0.15
TBTR07290015-D050	●	5	7	0.9	4.4	45	29	0.5	0.15
TBTR07340015-D050	●	5	7	0.9	4.4	50	34	0.5	0.15
TBTR07140015-D060	●	6	7	1.8	5.3	30	14	0.5	0.15
TBTR/L07210015-D060	●	6	7	1.8	5.3	37	21	0.5	0.15
TBTR07240015-D060	●	6	7	1.8	5.3	40	24	0.5	0.15
TBTR07290015-D060	●	6	7	1.8	5.3	45	29	0.5	0.15
TBTR07340015-D060	●	6	7	1.8	5.3	50	34	0.5	0.15
TBTR07410015-D060	●	6	7	1.8	5.3	57	41	0.5	0.15
TBTR07190015-D068	●	6.8	7	2.8	6.3	35	19	0.6	0.15
TBTR07240015-D068	●	6.8	7	2.8	6.3	40	24	0.6	0.15
TBTR07290015-D068	●	6.8	7	2.8	6.3	45	29	0.6	0.15
TBTR07340015-D070	●	7	7	2.8	6.3	50	34	0.6	0.15
TBTR07390015-D070	●	7	7	2.8	6.3	55	39	0.6	0.15
TBTR07440015-D070	●	7	7	2.8	6.3	60	44	0.6	0.15
TBTR07490015-D070	●	7	7	2.8	6.3	65	49	0.6	0.15

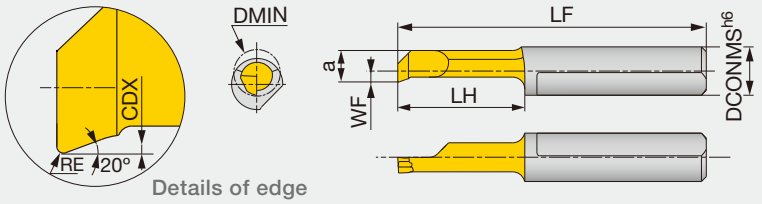
● : Line up

Reference pages : TBTR/L: Standard cutting conditions → G136

TBPR

Solid boring bar for boring and chamfering



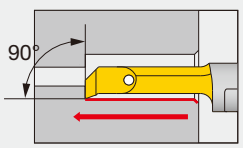


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBPR04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

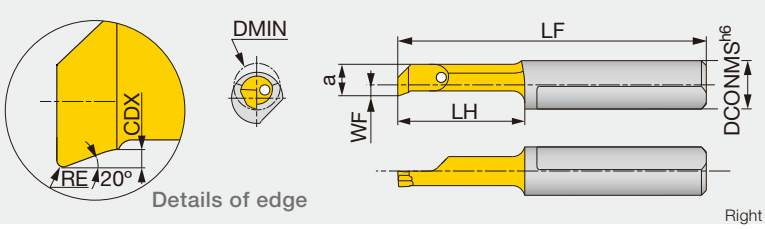
● : Line up

JBPR

Solid boring bar for boring and chamfering



with coolant hole



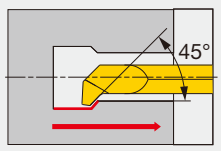
Right hand (R) shown.

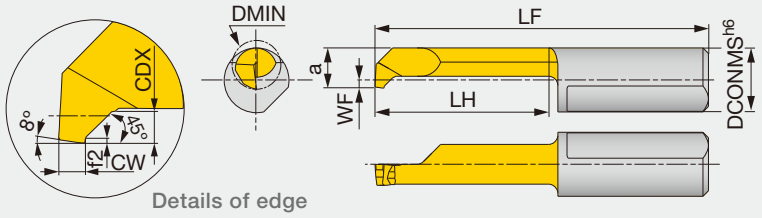
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBPR04090010-D028	●	▲	2.8	4	0.9	2.6	25.5	9	0.2	0.1
JBPR04150010-D028	●	▲	2.8	4	0.9	2.6	31.5	15	0.2	0.1
JBPR04090010-D040	●	▲	4	4	1.5	3.5	25.5	9	0.3	0.1
JBPR04150010-D040	●	▲	4	4	1.5	3.5	31.5	15	0.3	0.1
JBPR07140015-D050	●	▲	5	7	0.9	4.4	30	14	0.5	0.15
JBPR07190015-D050	●	▲	5	7	0.9	4.4	35	19	0.5	0.15

● : Line up
▲ : To be discontinued in April 2025

TBUR

Solid boring bar for back boring and chamfering





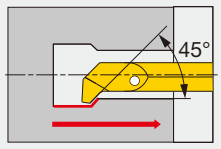
Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW $^{+0.05}_{0}$
TBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
TBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : Line up

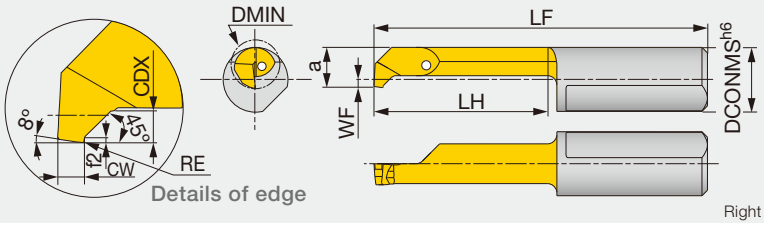
Reference pages : TBPR, JBPR, TBUR: Standard cutting conditions → G136

JBUR

Solid boring bar for back boring and chamfering



with coolant hole



Details of edge

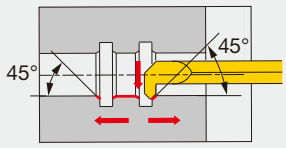
Right hand (R) shown.

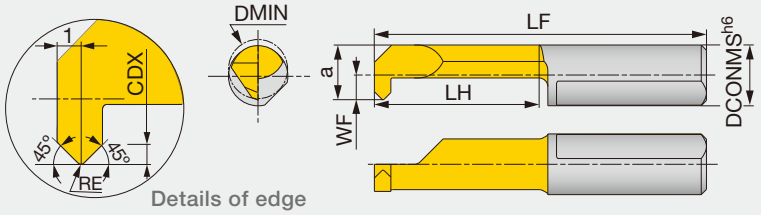
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW $^{+0.05}_{0}$	RE
JBUR07140010-D050	●	▲	5	7	0.9	4.4	30	14	0.2	1	1	0.1
JBUR07190010-D050	●	▲	5	7	0.9	4.4	35	19	0.2	1	1	0.1

● : Line up
▲ : To be discontinued in April 2025

TBCR

Solid boring bar for boring and 45° chamfering





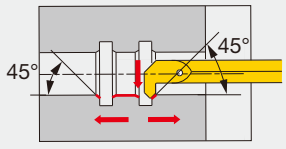
Details of edge

Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
TBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

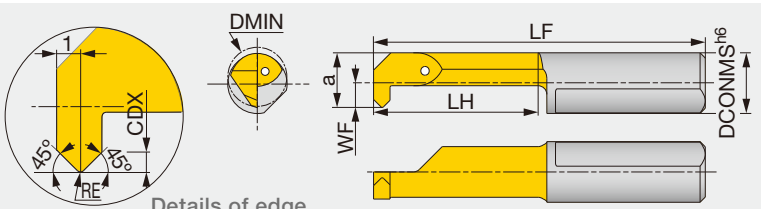
● : Line up

JBCR

Solid boring bar for boring and 45° chamfering



with coolant hole



Details of edge

Right hand (R) shown.

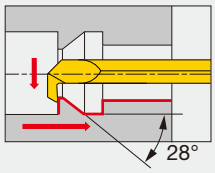
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{\pm 0.05}$
JBCR07140020-D050	●	▲	5	7	0.9	4.4	30	14	0.7	0.2
JBCR07190020-D050	●	▲	5	7	0.9	4.4	35	19	0.7	0.2
JBCR07190020-D068	●	▲	6.8	7	2.8	6.3	35	19	0.7	0.2

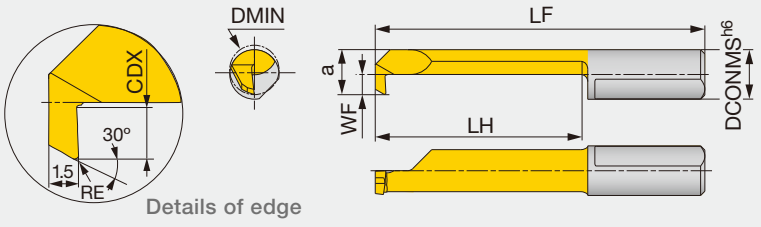
● : Line up
▲ : To be discontinued in April 2025

Reference pages : JBUR, TBCR, JBCR: Standard cutting conditions → G136

TBBR

Solid boring bar for back boring



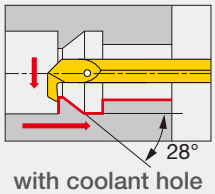


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
TBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
TBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2

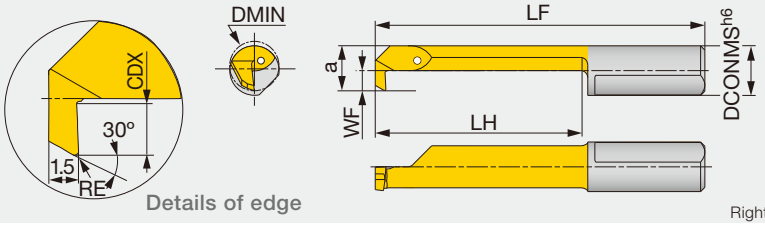
● : Line up

JBBR

Solid boring bar for back boring



with coolant hole



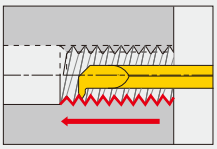
Right hand (R) shown.

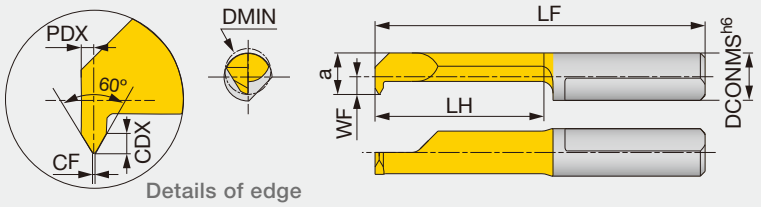
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}$
JBBR04140020-D030	●	▲	3	4	0.6	2.6	30	14	0.5	0.2
JBBR04190020-D030	●	▲	3	4	0.6	2.6	35	19	0.5	0.2
JBBR04140015-D040	●	▲	4	4	1.5	3.5	30	14	0.8	0.15
JBBR04240015-D040	●	▲	4	4	1.5	3.5	40	24	0.8	0.15
JBBR07190020-D050	●	▲	5	7	0.9	4.4	35	19	1	0.2
JBBR07290020-D050	●	▲	5	7	0.9	4.4	45	29	1	0.2
JBBR07190020-D060	●	▲	6	7	1.8	5.3	35	19	1.8	0.2
JBBR07290020-D060	●	▲	6	7	1.8	5.3	45	29	1.8	0.2
JBBR07190020-D070	●	▲	7	7	2.8	6.3	35	19	2.5	0.2
JBBR07290020-D070	●	▲	7	7	2.8	6.3	45	29	2.5	0.2

● : Line up
▲ : To be discontinued in April 2025

TBIR

Solid boring bar for threading (metric)





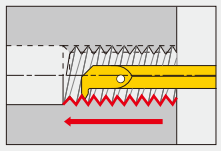
Metric	SH725	Pitch	DMIN	CF $^{0}_{-0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
TBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
TBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
TBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
TBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
TBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
TBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75

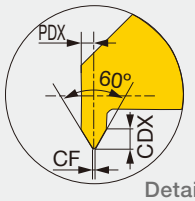
● : Line up

Reference pages : TBBR, JBBR, TBIR: Standard cutting conditions → G136

JBIR

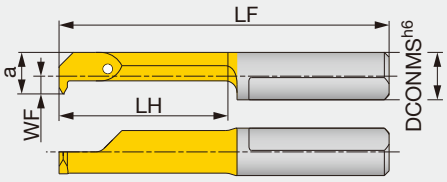
Solid boring bar for threading (metric)





Details of edge





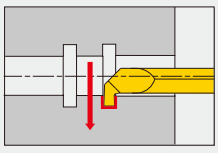
Right hand (R) shown.

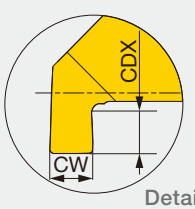
Metric	SH725	SH730	Pitch	DMIN	CF $^{0}_{-0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	▲	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	▲	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	▲	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	▲	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	▲	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	▲	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	▲	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	▲	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

● : Line up
▲ : To be discontinued in April 2025

TBGR

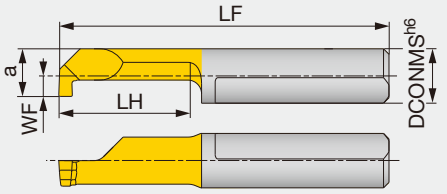
Solid boring bar for internal grooving





Details of edge





Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX
TBGR04100050-D020	●	0.5	2	4	-0.2	1.8	26	10	0.4
TBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
TBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
TBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
TBGR07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
TBGR07140100-D060	●	1	6	7	1.8	5.3	30	14	1.8
TBGR07090150-D060	●	1.5	6	7	1.8	5.3	25	9	1.8
TBGR07090200-D060	●	2	6	7	1.8	5.3	25	9	1.8
TBGR07140200-D060	●	2	6	7	1.8	5.3	30	14	1.8
TBGR07090100-D068	●	1	6.8	7	2.7	6.2	25	9	2.5
TBGR07090150-D068	●	1.5	6.8	7	2.7	6.2	25	9	2.5
TBGR07140150-D068	●	1.5	6.8	7	2.7	6.2	30	14	2.5
TBGR07090200-D068	●	2	6.8	7	2.7	6.2	25	9	2.5
TBGR07140200-D068	●	2	6.8	7	2.7	6.2	30	14	2.5
TBGR07210200-D068	●	2	6.8	7	2.7	6.2	37	21	2.5
TBGR07290200-D068	●	2	6.8	7	2.7	6.2	45	29	2.5

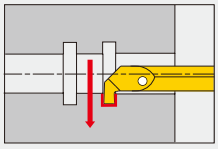
Corner radius : less than 0.1 mm.

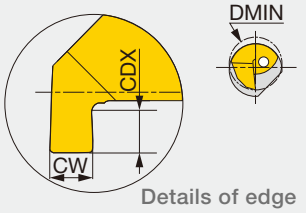
● : Line up

Reference pages : JBIR, TBGR: Standard cutting conditions → G136

JBGR/L

Solid boring bar for internal grooving





Right hand (R) shown.

Metric	SH725	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX
JBGR04050050-D020	●	▲	0.5	2	4	-0.2	1.8	21	5	0.4
JBGR04100050-D020	●	▲	0.5	2	4	-0.2	1.8	26	10	0.4
JBGR04050070-D030	●	▲	0.7	3	4	0.7	2.7	21	5	0.6
JBGR04100070-D030	●	▲	0.7	3	4	0.7	2.7	26	10	0.6
JBGR04090100-D040	●	▲	1	4	4	1.5	3.5	25.5	9	0.8
JBGR04150100-D040	●	▲	1	4	4	1.5	3.5	31.5	15	0.8
JBGR07090100-D050	●	▲	1	5	7	0.9	4.4	25	9	1
JBGR07140100-D050	●	▲	1	5	7	0.9	4.4	30	14	1
JBGR07090150-D050	●	▲	1.5	5	7	0.9	4.4	25	9	1
JBGR07140150-D050	●	▲	1.5	5	7	0.9	4.4	30	14	1
JBGR07090200-D050	●	▲	2	5	7	0.9	4.4	25	9	1
JBGR07190200-D050	●	▲	2	5	7	0.9	4.4	35	19	1
JBGR/L07090100-D060	●	▲	1	6	7	1.8	5.3	25	9	1.8
JBGR07140100-D060	●	▲	1	6	7	1.8	5.3	30	14	1.8
JBGR07210100-D060	●	▲	1	6	7	1.8	5.3	37	21	1.8
JBGR07290100-D060	●	▲	1	6	7	1.8	5.3	45	29	1.8
JBGR/L07090150-D060	●	▲	1.5	6	7	1.8	5.3	25	9	1.8
JBGR07140150-D060	●	▲	1.5	6	7	1.8	5.3	30	14	1.8
JBGR07210150-D060	●	▲	1.5	6	7	1.8	5.3	37	21	1.8
JBGR07240150-D060	●	▲	1.5	6	7	1.8	5.3	40	24	1.8
JBGR07290150-D060	●	▲	1.5	6	7	1.8	5.3	45	29	1.8
JBGR07090200-D060	●	▲	2	6	7	1.8	5.3	25	9	1.8
JBGR07140200-D060	●	▲	2	6	7	1.8	5.3	30	14	1.8
JBGR07210200-D060	●	▲	2	6	7	1.8	5.3	37	21	1.8
JBGR07240200-D060	●	▲	2	6	7	1.8	5.3	40	24	1.8
JBGR07290200-D060	●	▲	2	6	7	1.8	5.3	45	29	1.8
JBGR07090100-D068	●	▲	1	6.8	7	2.7	6.2	25	9	2.5
JBGR07140100-D068	●	▲	1	6.8	7	2.7	6.2	30	14	2.5
JBGR07210100-D068	●	▲	1	6.8	7	2.7	6.2	37	21	2.5
JBGR07090150-D068	●	▲	1.5	6.8	7	2.7	6.2	25	9	2.5
JBGR07140150-D068	●	▲	1.5	6.8	7	2.7	6.2	30	14	2.5
JBGR07210150-D068	●	▲	1.5	6.8	7	2.7	6.2	37	21	2.5
JBGR07290150-D068	●	▲	1.5	6.8	7	2.7	6.2	45	29	2.5
JBGR07090200-D068	●	▲	2	6.8	7	2.7	6.2	25	9	2.5
JBGR/L07140200-D068	●	▲	2	6.8	7	2.7	6.2	30	14	2.5
JBGR07210200-D068	●	▲	2	6.8	7	2.7	6.2	37	21	2.5
JBGR07250200-D068	●	▲	2	6.8	7	2.7	6.2	40	24	2.5
JBGR07290200-D068	●	▲	2	6.8	7	2.7	6.2	45	29	2.5

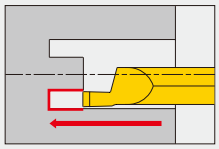
Corner radius: less than 0.1 mm

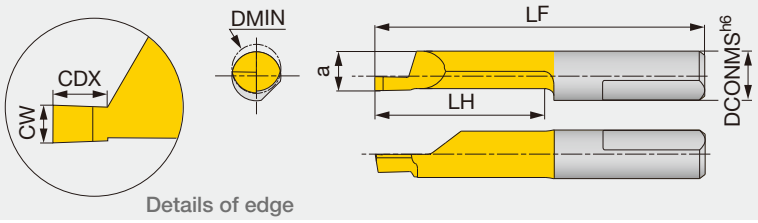
● : Line up
▲ : To be discontinued in April 2025

Reference pages : JBGR/L: Standard cutting conditions → G136

TBFR

Solid boring bar for face grooving





Details of edge

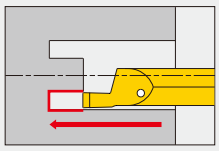
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
TBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
TBFR07110200-D060	●	2	6	7	5.2	26	10	3
TBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
TBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
TBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
TBFR07200250-D150	●	2.5	15	7	5.9	36	20	20
TBFR07200300-D150	●	3	15	7	5.9	36	20	20
TBFR07300300-D150	●	3	15	7	5.9	46	30	30

Corner radius : less than 0.1 mm.

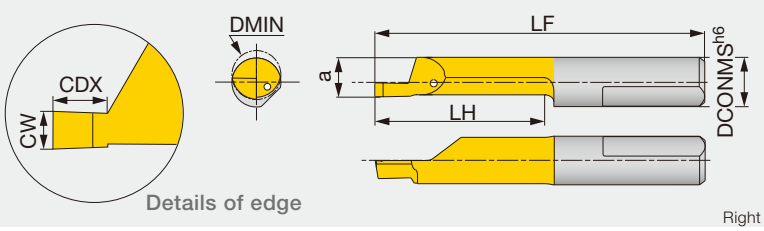
● : Line up

JBFR/L

Solid boring bar for face grooving



with coolant hole



Details of edge

Right hand (R) shown.

Metric	SH725	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBFR07110100-D060	●	▲	1	6	7	5.2	27	10	1.5
JBFR07110150-D060	●	▲	1.5	6	7	5.2	27	10	2
JBFR07110200-D060	●	▲	2	6	7	5.2	27	10	3
JBFR07110100-D080	●	▲	1	8	7	5.9	27	11	1.5
JBFR07110150-D080	●	▲	1.5	8	7	5.9	27	11	2.5
JBFR07110200-D080	●	▲	2	8	7	5.9	27	11	3
JBFR07110250-D080	●	▲	2.5	8	7	5.9	27	11	3.5
JBFR07110300-D080	●	▲	3	8	7	5.9	27	11	3.5
JBFR/L07210150-D080	●	▲	1.5	8	7	5.9	36	21	2.5
JBFR07210200-D080	●	▲	2	8	7	5.9	36	21	3
JBFR07210250-D080	●	▲	2.5	8	7	5.9	36	21	3.5
JBFR07210300-D080	●	▲	3	8	7	5.9	36	21	3.5
JBFR/L07300200-D080	●	▲	2	8	7	5.9	46	30	3
JBFR07300300-D080	●	▲	3	8	7	5.9	46	30	3.5
JBFR07200200-D080	●	▲	2	8	7	5.9	36	20	3
JBFR07200250-D150	●	▲	2.5	15	7	5.9	36	20	20
JBFR07200300-D150	●	▲	3	15	7	5.9	36	20	20
JBFR07300300-D150	●	▲	3	15	7	5.9	46	30	30

Corner radius: less than 0.1 mm

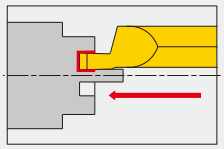
● : Line up

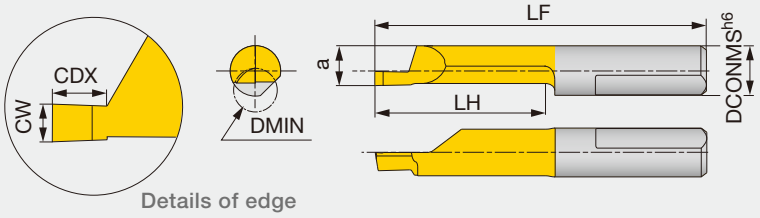
▲ : To be discontinued in April 2025

Reference pages : TBFR, JBFR/L: Standard cutting conditions → G136

TBSR

Solid boring bar for face grooving (for shaft)





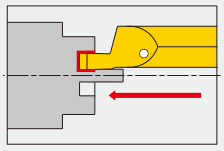
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
TBSR07200200-D060	●	2	6	7	5.2	36	20	4

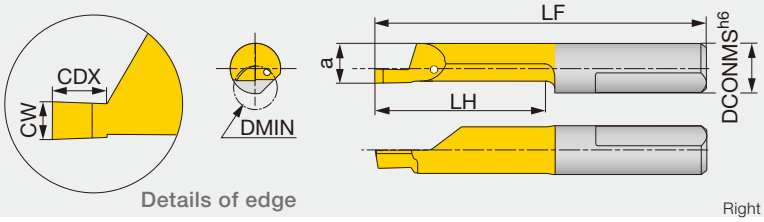
Corner radius : less than 0.1 mm.

● : Line up

JBSR

Solid boring bar for face grooving (for shaft)





Right hand (R) shown.

Metric	SH725	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBSR07200200-D060	●	▲	2	6	7	5.2	36	20	4

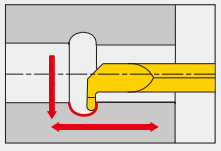
Corner radius: less than 0.1 mm

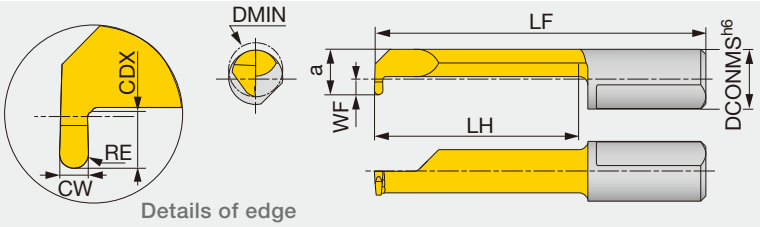
● : Line up

▲ : To be discontinued in April 2025

TBRR

Solid boring bar for boring and profiling



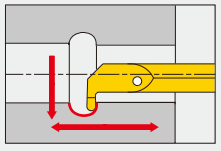


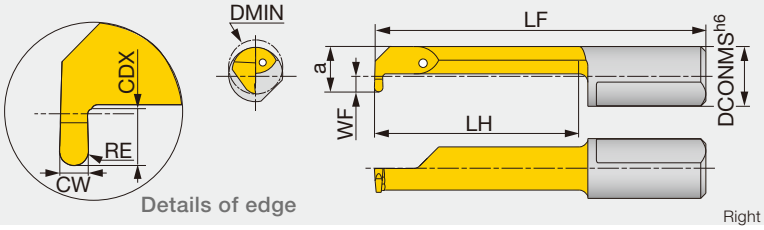
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
TBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
TBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
TBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : Line up

JBRR

Solid boring bar for boring and profiling





Right hand (R) shown.

Metric	SH725	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
JBRR07190050-D050	●	▲	1	5	7	0.9	4.4	35	19	1	0.5
JBRR07240050-D060	●	▲	1	6	7	1.8	5.3	40	24	1.8	0.5
JBRR07290050-D068	●	▲	1	6.8	7	2.8	6.3	45	29	2.5	0.5

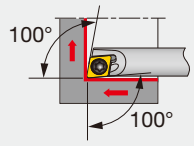
● : Line up

▲ : To be discontinued in April 2025

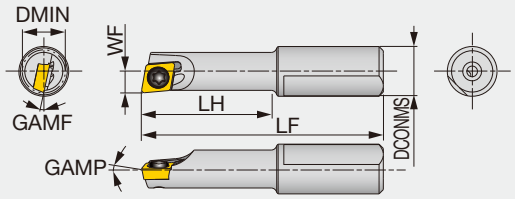
Reference pages : TBSR, JBSR, TBRR, JBRR: Standard cutting conditions → G136

A/E-SEXPR

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**

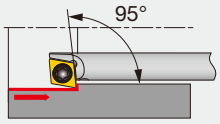


Metric	Material	DMIN	DCONMS	WF	LF	LH	GAMP	GAMF	RE**	Insert	Torque*
A07050-SEXPR03-3	Steel	5	7	2.5	31	15	0°	-13°	0.2	EPGT03X1...	0.6
A07060-SEXPR04-3	Steel	6	7	3.1	34	18	0°	-12°	0.2	EPGT0401...	0.6
E07050-SEXPR03-4	Carbide	5	7	2.5	37	20	0°	-13°	0.2	EPGT03X1...	0.6
E07050-SEXPR03-5	Carbide	5	7	2.5	42	25	0°	-13°	0.2	EPGT03X1...	0.6
E07060-SEXPR04-5	Carbide	6	7	3.1	46	30	0°	-12°	0.2	EPGT0401...	0.6

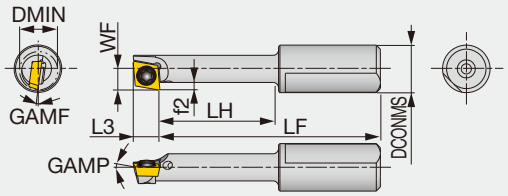
*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L).

A/E-SEZPR

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **Z**



Metric	Material	DMIN	DCONMS	WF	LF	LH	f2	L3	GAMP	GAMF	RE**	Insert	Torque*
A07055-SEZPR03-3	Steel	5.5	7	3.2	32.5	16.5	1.2	3.9	0°	-8°	0.2	EPGT03X1...	0.6
E07055-SEZPR03-5	Carbide	5.5	7	3.2	44.7	27.5	1.2	3.9	0°	-8°	0.2	EPGT03X1...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SEZPR**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E070**03-...	CSTA-1.6	T-6F
A/E070**04-...	CSTB-2	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B016

M

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B018

K

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B020

S

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B024

N

Application	Precision finishing	Finishing
Grade	DX140	SH725
Breaker Shape	DIA	JS
Cutting conditions	B022	

H

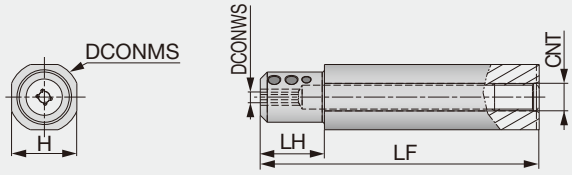
Application	Precision finishing
Grade	BX310
Breaker Shape	CBN
Cutting conditions	B026

Reference pages: A/E-SEXPR, A/E-SEZPR: Insert → B128 -, CBN → B195, PCD → B214

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes



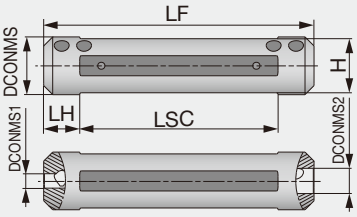


Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBS12-4-L80C-4N	12	4	80	10	10.3	Rc1/16
JBBS127-4-L80C-4N	12.7	4	80	10	11.6	Rc1/16
JBBS14-4-L80C-4N	14	4	80	10	12	Rc1/8
JBBS159-4-L100C-4N	15.875	4	100	10	14.58	Rc1/8
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-4-L100C-4N	16	4	100	10	15	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-4-L100C-4N	19.05	4	100	20	17.2	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-4-L100C-4N	20	4	100	20	18	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-4-L100C-4N	22	4	100	20	20	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-4-L100C-4N	25	4	100	23	23	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-4-L100C-4N	25.4	4	100	23	23.4	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

JBBS

Sleeve for external coolant supply





Metric	DCONMS	DCONWS1	DCONWS2	LF	LH	LSC	H
JBBS12-4-4	12	4	4	75	10	55	10.3
JBBS127-4-4	12.7	4	4	76.2	10	56.2	11.6
JBBS14-4-4	14	4	4	75	10	55	12
JBBS159-4-7	15.875	4	7	76.2	10	56.2	14
JBBS16-4-7	16	4	7	75	10	55	15
JBBS19-4-7	19.05	4	7	89	10	69	17.2
JBBS20-4-7	20	4	7	90	10	70	18
JBBS22-4-7	22	4	7	90	10	70	20
JBBS25-4-7	25	4	7	100	10	80	23
JBBS254-4-7	25.4	4	7	90	10	70	23.4

SPARE PARTS





Designation	Clamping screw	Wrench
JBBS**-4-L***C-4N, JBBS127-4-4, JBBS**-4-7	SSHM5-6PF-S	P-2.5
JBBS**-7-L***C-4N, JBBS12-4-4, JBBS14-4-4	SSHM5-4PF-S	P-2.5

JBBS-C

Sleeve for internal coolant supply



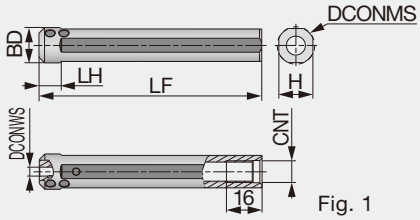


Fig. 1

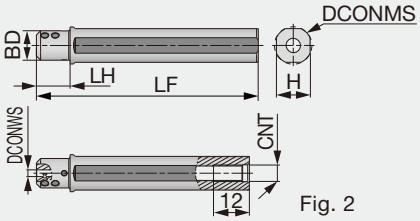


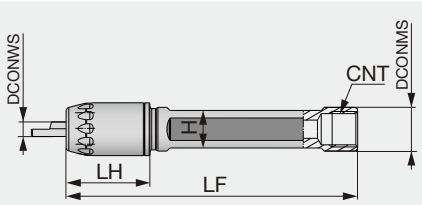
Fig. 2

Metric	DCONMS	BD	DCONWS	LF	LH	H	CNT	Fig.
JBBS159-4-L100C	15.875	15.875	4	100	10	14.58	Rc1/8	1
JBBS159-7-L100C	15.875	15.875	7	100	10	14.58	Rc1/8	1
JBBS16-4-L100C	16	16	4	100	10	15	Rc1/8	1
JBBS16-7-L100C	16	16	7	100	10	15	Rc1/8	1
JBBS19-4-L100C	19.05	17.5	4	100	20	17.2	Rc1/8	2
JBBS19-7-L100C	19.05	17.5	7	100	20	17.2	Rc1/8	2
JBBS20-4-L100C	20	17.5	4	100	20	18	Rc1/8	2
JBBS20-7-L100C	20	17.5	7	100	20	18	Rc1/8	2
JBBS22-4-L100C	22	17.5	4	100	20	20	Rc1/8	2
JBBS22-7-L100C	22	17.5	7	100	20	20	Rc1/8	2
JBBS25-4-L100C	25	18	4	100	23	23	Rc1/8	2
JBBS25-7-L100C	25	18	7	100	23	23	Rc1/8	2
JBBS254-4-L100C	25.4	18	4	100	23	23.4	Rc1/8	2
JBBS254-7-L100C	25.4	18	7	100	23	23.4	Rc1/8	2

JBBSA-C

Collet chuck sleeve for solid carbide bars





Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBSA16-4-L100C	16	4	100	23	14	Rc1/8
JBBSA16-7-L100C	16	7	100	23	14	Rc1/8
JBBSA20-4-L120C	20	4	120	23	18	Rc1/8
JBBSA20-7-L120C	20	7	120	23	18	Rc1/8

SPARE PARTS

Designation	Clamping screw	Cap	Wrench	Wrench 1
JBBS**-4-L100C	SSHM5-6PF-S		P-2.5	-
JBBS**-7-L100C	SSHM5-4PF-S		P-2.5	-
JBBSA**-4-L100C	-	CAP-A-4	-	WRENCH-A-4
JBBSA**-7-L100C	-	CAP-A-7	-	WRENCH-A-7

STANDARD CUTTING CONDITIONS

Boring, profiling, chamfering, back boring

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Cutting speed *Vc* (sfm)	Feed *f* (mm/rev)	Feed *f* (ipr)
P	Low carbon steel 1015, 1025, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
P	Prehardened steels NAK80, PX5, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
M	Stainless steel 304, 316, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
K	Gray cast iron No.250B, No.300B, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
N	Aluminum alloys, Copper alloys Si < 12%	SH730, SH725	90 - 200	295 - 656	0.01 - 0.08 *	0.0004 - 0.003 *
S	Titanium alloys Ti-6Al-4V, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
S	Superalloys Inconel718, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *

* JBTR/L04020004-D006, JBTR/L04030004-D006 : Max. f = 0.0004 ipr (0.01 mm/rev)

Threading (metric thread)

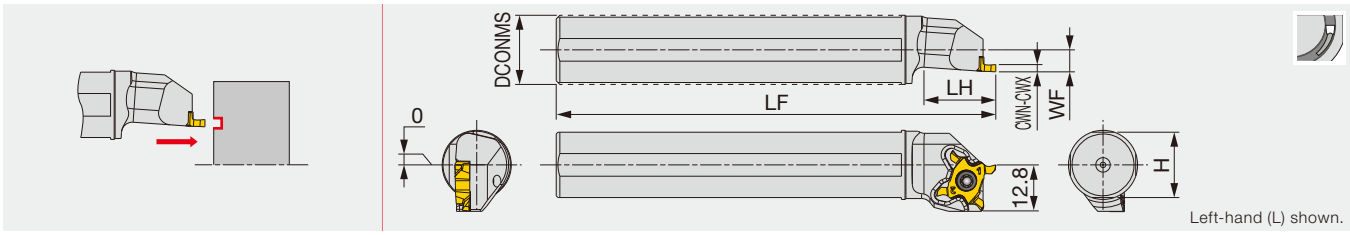
ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Cutting speed *Vc* (sfm)	Number of passes Pitch (mm) 0.5 (0.020")	0.75 (0.030")	1 (0.039")	1.25 (0.049")	1.5 (0.059")
P	Low carbon steel 1015, 1025, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Prehardened steels NAK80, PX5, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel 304, 316, etc.	SH730, SH725	40 - 140	131 - 459	8	10	12	15	18
K	Gray cast iron No.250B, No.300B, etc.	SH730, SH725	30 - 100	98 - 328	7	9	12	14	17
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730, SH725	30 - 100	98 - 328	7	9	12	14	17
N	Aluminum alloys, Copper alloys Si < 12%	SH730, SH725	90 - 200	295 - 656	6	8	10	12	15

Internal and face grooving

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Cutting speed *Vc* (sfm)	Internal grooving Feed: *f* (mm/rev)	Internal grooving Feed: *f* (ipr)	Face grooving Feed: *f* (mm/rev)	Face grooving Feed: *f* (ipr)
P	Low carbon steel 1015, 1025, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
P	Prehardened steels NAK80, PX5, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
M	Stainless steel 304, 316, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
K	Gray cast iron No.250B, No.300B, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
N	Aluminum alloys, Copper alloys Si < 12%	SH730, SH725	90 - 200	295 - 656	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002
S	Superalloys Inconel718, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001	0.01 - 0.05	0.0004 - 0.002

JS-STCFL18

Face grooving toolholder with round shank



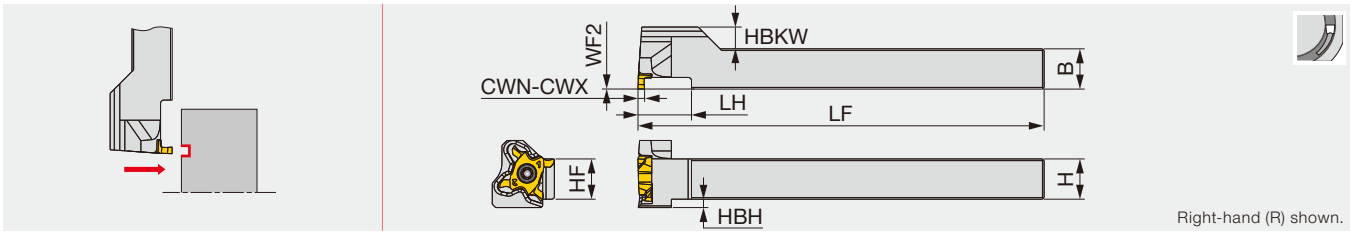
Left-hand (L) shown.

Metric	CWN	CWX	DCONMS	LF	LH	H	WF	Insert	Torque*
JS16F-STCFL18	0.5	2.5	16	85	20	15	6	TCF18L...	1.2
JS19G-STCFL18	0.5	2.5	19.05	90	20	18	6	TCF18L...	1.2
JS19X-STCFL18	0.5	2.5	19.05	120	20	18	6	TCF18L...	1.2
JS20G-STCFL18	0.5	2.5	20	90	20	19	6	TCF18L...	1.2
JS20X-STCFL18	0.5	2.5	20	120	20	19	6	TCF18L...	1.2
JS22X-STCFL18	0.5	2.5	22	120	20	21	6	TCF18L...	1.2
JS25H-STCFL18	0.5	2.5	25	100	20	24	6	TCF18L...	1.2
JS254X-STCFL18	0.5	2.5	25.4	120	20	24.5	6	TCF18L...	1.2

Note: The left hand insert (L) is used for the left hand toolholders (L).
Torque*: Recommended clamping torque (N·m)

STCFVR-18

Face grooving toolholder with square shank, for Swiss lathes



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBKW	HBH	Insert	Torque
STCFVR06-18	0.020	0.098	0.375	0.375	4.016	0.472	0.375	0	0.354	0.177	TCF18L...	0.89
STCFVR08-18	0.020	0.098	0.500	0.500	4.764	0.630	0.500	0	0.228	0.098	TCF18L...	0.89
STCFVR10-18	0.020	0.098	0.625	0.625	4.764	0.787	0.625	0	0.106	-	TCF18L...	0.89

Metric	CWN	CWX	H	B	LF	LH	HF	WF2	HBKW	HBH	Insert	Torque*
STCFVR1010H18	0.5	2.5	10	10	100	12	10	0	8.5	4.5	TCF18L...	1.2
STCFVR1212F18	0.5	2.5	12	12	85	16	12	0	6.5	2.5	TCF18L...	1.2
STCFVR1212X18	0.5	2.5	12	12	120	16	12	0	6.5	2.5	TCF18L...	1.2
STCFVR1616X18	0.5	2.5	16	16	120	20	16	0	2.5	0	TCF18L...	1.2

Note: The left hand insert (L) is used for the left hand toolholders (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS




Designation	Clamping screw	Wrench
JS**-STCFL18, STCFVR**18	CSTC-4L100DR	T-1008/5

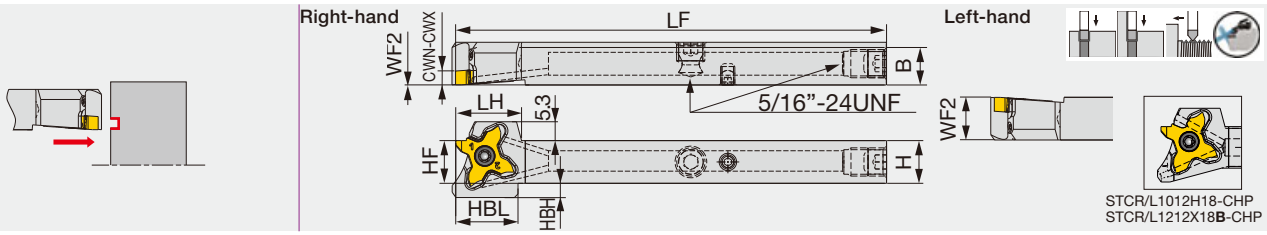
Threading pitch range: 0.8 ~ 3 mm

Reference pages: JS-STCFL18,STCFVR-18: Inserts, Standard cutting conditions → G139

STCR/L-H/X18-CHP

Direct connection

External grooving and threading toolholder, high pressure coolant compatible



Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque
STCR/L08X18-CHP (1)	0.013	0.118	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR/L10X18-CHP (1)	0.013	0.118	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	TC*18...	0.89

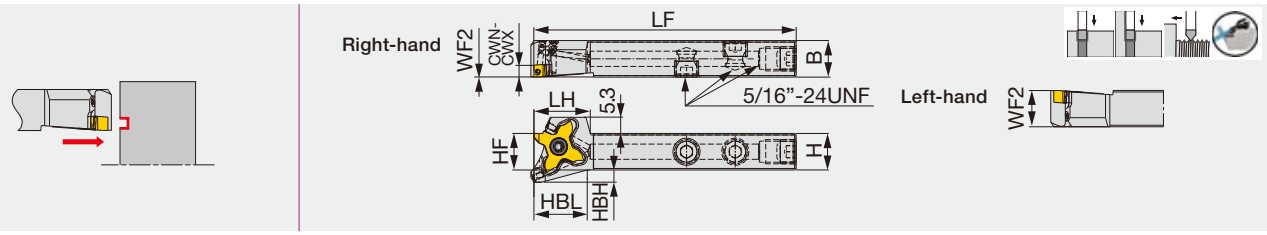
Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque*
STCR/L1012H18-CHP	0.33	3.18	10	12	100	17.1	17.1	10	0/12	4	TC**18	1.2
STCR/L1212X18B-CHP	0.33	3.18	12	12	120	18.5	17.5	12	0/12	4	TC**18	1.2
STCR/L1616X18-CHP	0.33	3.18	16	16	120	18.5	-	16	0/16	0	TC**18	1.2

The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
WF2** : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

STCR/L-18-CHP

Tube connection

External grooving and threading toolholder. High pressure coolant capability.



Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque
STCR/L08F18-CHP	0.013	0.118	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89

Metric	CWN	CWX	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque*
STCR/L1212F18B-CHP	0.33	3.18	12	12	85	18.5	17.5	12	0/12	4	TC**18	1.2

The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
WF2** : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

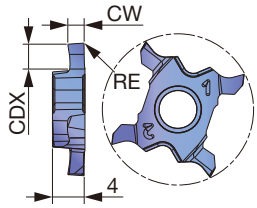
Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCL**F18B-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
STCR**F18B-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-

Threading pitch range: 0.8 ~ 3.0 mm 0.8 ~ 3.0 mm

INSERT

TCF18L (Face grooving)





Left-hand (L) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★: First choice

Designation	HAND	CW±0.02 (mm)	CW±0.02 (in)	RE (in)	Coated SH725	CDX (in)	DAXN (in)
TCF18L050F-005	L	0.5	0.020	0.002	●	0.039	0.236
TCF18L100F-005	L	1	0.039	0.002	●	0.098	0.236
TCF18L150F-005	L	1.5	0.059	0.002	●	0.098	0.236
TCF18L200F-005	L	2	0.079	0.002	●	0.118	0.236
TCF18L250F-005	L	2.5	0.098	0.002	●	0.118	0.236

5 pieces per package
● : Line up

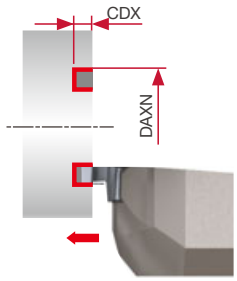
STANDARD CUTTING CONDITIONS

TCF18L (Face grooving)

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, 1020, etc.	SH725	98 - 328	0.0004 - 0.0016
	Carbon steels, Alloy steel 1055, 4140, etc.	SH725	98 - 328	0.0004 - 0.0016
	Prehardened steel NAK80, PX5, etc.	SH725	98 - 328	0.0004 - 0.0016
M	Stainless steel 304SS, 316SS, etc.	SH725	98 - 328	0.0004 - 0.0016
K	Gray cast iron Class25, Class30, etc.	SH725	98 - 328	0.0004 - 0.0016
	Ductile cast iron 60-40-18, 80-55-06, etc.	SH725	98 - 328	0.0004 - 0.0016
S	Titanium alloys Ti-6Al-4V, etc.	SH725	66 - 131	0.0004 - 0.0016
	Superalloys Inconel718, etc.	SH725	33 - 98	0.0004 - 0.0016

PRECAUTIONS OF PROCESSING

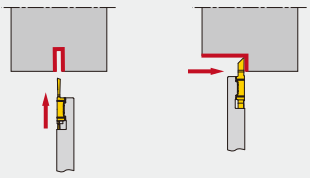
Minimum diameter for face grooving



Minimum face diameter DAXN (in)	Maximum groove depth CDX (in)
2.559	0.118

Reference pages: Toolhoders → G137 - G138

Parting-off and front turning toolholders



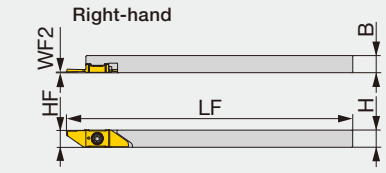


Fig. 1

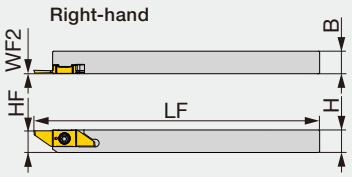


Fig. 2



Metric	H	B	LF	HF	WF2(1)	Insert	Torque*	Fig.
JSXXL0606X05	6	6	120	5.6	5.8	JV*N..., JVN...	1.3	1
JSXXR/L0707X05	7	7	120	6.6	0.2/6.8	JV*N..., JVN...	1.3	1
JSXXR/L0808F05	8	8	85	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L0808H05	8	8	100	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L1010H05	10	10	100	9.7	0.2/9.8	JV*N..., JVN...	1.3	2

Torque*: Recommended clamping torque (N·m)
(1) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Use the right-hand insert (JV****R...) for a right-hand holder (JSXXR...); the left-hand insert (JV****L...) for a left-hand holder (JSXXL...).

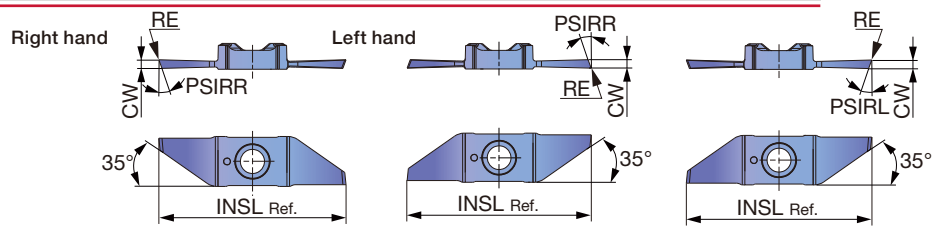
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...05	CSTB-2.5L054DL	T-7F
JSXXL...05	CSTB-2.5L054DR	T-7F

INSERTS

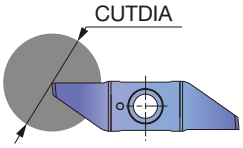
JVPN**R/L (For parting-off)





JVPN12L10F000-20L

P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	



★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	INSL (in)	PSIRR	PSIRL
JVPN04R05F000-20	R	0.5	0.020	0	●	0.157	1.685	20°	-
JVPN04L05F000-20	L	0.5	0.020	0	●	0.157	1.685	20°	-
JVPN04R05F005-20	R	0.5	0.020	0.002	●	0.157	1.677	20°	-
JVPN04L05F005-20	L	0.5	0.020	0.002	●	0.157	1.677	20°	-
JVPN07R06F000-20	R	0.6	0.024	0	●	0.276	1.685	20°	-
JVPN07L06F000-20	L	0.6	0.024	0	●	0.276	1.685	20°	-
JVPN07R06F005-20	R	0.6	0.024	0.002	●	0.276	1.685	20°	-
JVPN07L06F005-20	L	0.6	0.024	0.002	●	0.276	1.685	20°	-
JVPN12R08F000-20	R	0.8	0.031	0	●	0.472	1.701	20°	-
JVPN12L08F000-20	L	0.8	0.031	0	●	0.472	1.701	20°	-
JVPN12R08F005-20	R	0.8	0.031	0.002	●	0.472	1.693	20°	-
JVPN12L08F005-20	L	0.8	0.031	0.002	●	0.472	1.693	20°	-
JVPN12R10F000-20	R	1	0.039	0	●	0.472	1.709	20°	-
JVPN12L10F000-20	L	1	0.039	0	●	0.472	1.709	20°	-
JVPN12R10F005-20	R	1	0.039	0.002	●	0.472	1.709	20°	-
JVPN12L10F005-20	L	1	0.039	0.002	●	0.472	1.709	20°	-
JVPN12L10F000-20L	L	1	0.039	0	●	0.472	1.709	-	20°

● : Line up

STANDARD CUTTING CONDITIONS

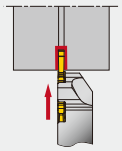
Parting-off

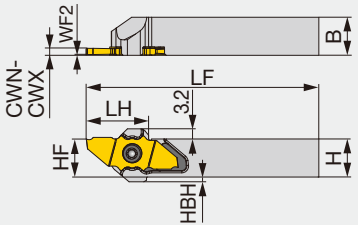
ISO	Workpiece materials	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0020
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0020
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

DUOJCUT UST

JSXXR/L

Parting toolholder, for Swiss lathes





Right hand (R) shown.

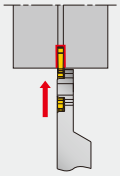
Inch	CWN	CWX	H	B	LF**	LH**	HF	WF2(1)	HBL	HBH	Insert	Torque	Fig.
JSXXR/L063	0.024	0.098	0.375	0.375	4.646	0.774	0.375	0.008 / 0.386	0.748	0.12	JX...	0.89	1
JSXXR/L083	0.024	0.098	0.500	0.500	3.268	0.774	0.500	0.008 / 0.386	0.748	0.06	JX...	0.89	1
JSXXR/L103	0.024	0.098	0.625	0.625	4.646	0.774	0.625	0.008 / 0.386	-	0.06	JX...	0.89	1
JSXXR/L123	0.024	0.098	0.750	0.750	3.950	0.886	0.750	0.008 / 0.742	-	-	JX...	0.89	1
JSXXR/L163	0.024	0.098	1.000	1.000	5.350	1.339	1.000	1.250 / 1.250	-	-	JX...	0.89	2

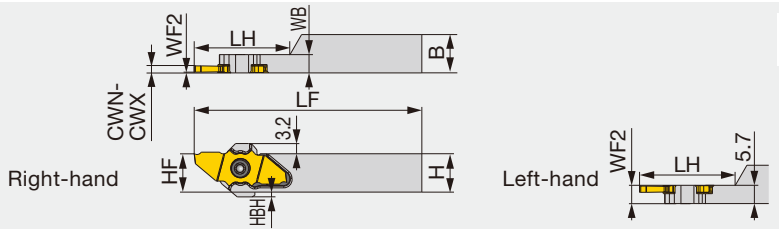
Metric	CWN	CWX	H	B	LF**	LH**	HF	WF2(1)	HBL**	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	0.6	2.5	10	10	120	19.65	10	0.2/9.8	19	3	JX...	1.2	1
JSXXR/L1212F09	0.6	2.5	12	12	85	19.65	12	0.2/11.8	19	1.5	JX...	1.2	1
JSXXR/L1212X09	0.6	2.5	12	12	120	19.65	12	0.2/11.8	19	1.5	JX...	1.2	1
JSXXR/L1616X09	0.6	2.5	16	16	120	19.65	16	0.2/15.8	-	-	JX...	1.2	1
JSXXR/L2020H09	0.6	2.5	20	20	100	22.5	20	0.2/19.8	-	-	JX...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX*G12... and JXPG20...inserts, and 0.157" (4 mm) shorter for JXPG06... insert.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-S

Parting toolholder, for Swiss lathes (for sub spindle)





Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L063-S	0.024	0.098	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.890
JSXXR/L083-S	0.024	0.098	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF2	HBH	Insert	Torque*
JSXXR/L1010X09-S	0.6	2.5	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...	1.2
JSXXR/L1212F09-S	0.6	2.5	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...	1.2
JSXXR/L1212X09-S	0.6	2.5	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...	1.2
JSXXR/L1616X09-S	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16...,20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**LF (Functional Length) and LH (Head Length) values shown above are true with JXPG16... insert. LF and LH will be 2 mm shorter than the above values with JX*G12... insert, and 0.157" (4 mm) shorter for JXPG06... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter with JXPG20... insert.
***JXPG20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS



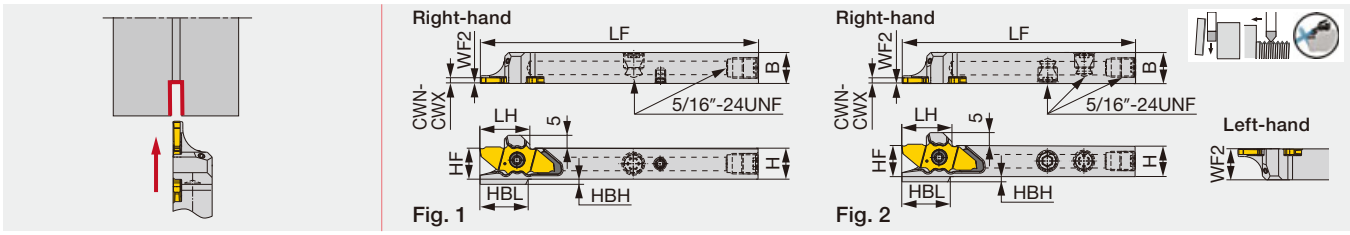


Designation	Clamping screw	Wrench
JSXXR..., JSXXR*****-S	CSTC-4L055DL	T-1008/5
JSXXL..., JSXXL*****-S	CSTC-4L055DR	T-1008/5

Reference pages: JSXXR/L, JSXXR/L-S: Inserts → G145 - G147, Standard cutting conditions → G148

JSXXR/L-F/H/X-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes



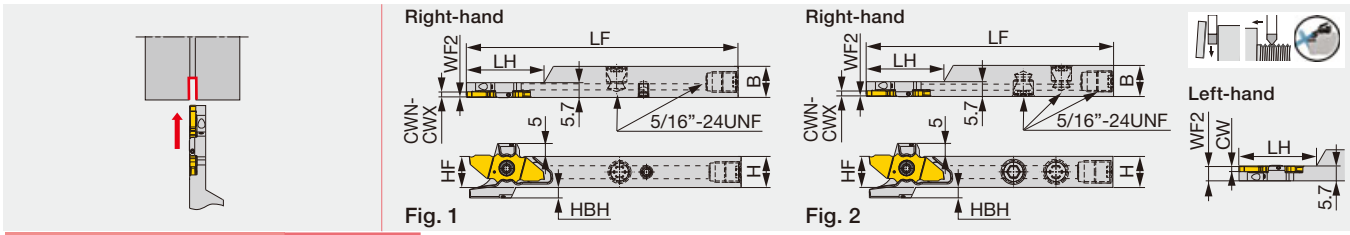
Inch	CWN	CWX	H	B	WF	LF**	HF	HBH	LH**	HBL**	Insert	Torque	Fig.
JSXXR/L083X-CHP	0.024	0.098	0.500	0.500	0.008/0.492	4.750	0.500	0.051	0.764	0.736	JX*G06...,12...,16..., 20...	0.890	1
JSXXR/L103X-CHP	0.024	0.098	0.625	0.625	0.008/0.617	4.750	0.625	-	0.764	-	JX*G06...,12...,16..., 20...	0.890	1
JSXXR/L083F-CHP	0.024	0.098	0.500	0.500	0.008/0.492	3.344	0.500	0.051	≤ 0.764	0.736	JX*G06...,12...,16..., 20...	0.890	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(3)	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-CHP(3)	0.6	2.5	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-CHP(3)	0.6	2.5	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 4 mm shorter for JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/X-S-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes (for sub spindle)



Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR/L083F-S-CHP	0.024	0.098	0.5	0.5	3.344	1.024	0.5	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-S-CHP	0.024	0.098	0.5	0.5	4.75	1.181	0.5	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-S-CHP	0.024	0.098	0.625	0.625	4.75	1.181	0.625	0.008/0.217	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP(4)	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-S-CHP(3),(4)	0.6	2.5	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09B-S-CHP(3)	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-S-CHP(3),(4)	0.6	2.5	16	16	120	30	16	0.2	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-S-CHP(3)	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2	1

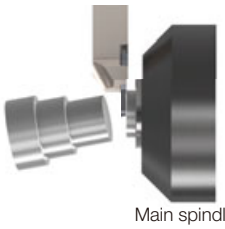
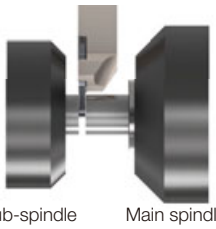
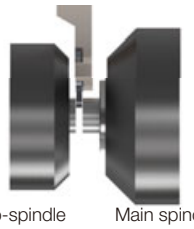
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 4 mm shorter for JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**F...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Reference pages: JSXXR/L-F/H/X-CHP, JSXXR/L-F/X-S-CHP:
Inserts → G145 - G147, Standard cutting conditions → G148

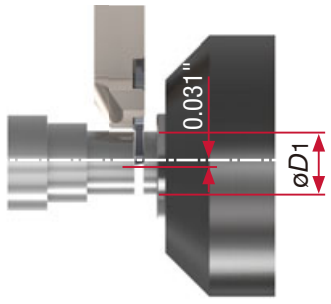
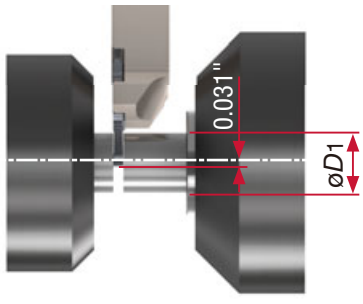
HOW TO SELECT TOOLS

	Large-diameter machining of workpiece with rigidity		Small-diameter machining of workpiece with short overhang	
			Sub-spindle tooling	
	Main-spindle tooling	Sub-spindle tooling	Workpiece with long overhang at the side of sub-spindle for the process after parting-off	Short workpiece with low rigidity
Application	 Main spindle Position of parting-off is at the side of the main spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the sub-spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the main spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the sub-spindle
Toolholder	R-hand (JSXXR type)	L-hand (JSXXL type)	R-hand (JSXXR-S type)	L-hand (JSXXL-S type)
Insert	Right-hand insert with lead angle to remove center core (JXPG**R***-15 type)	Left-hand insert (JXPG**L*** type)	Right-hand insert (JXPG**R*** type)	Left-hand insert (JXPG**L*** type)

HOW TO SELECT TOOLHOLDERS FOR SUB-SPINDLE

Sub-spindle dia.	Parting-off dia.	B	LF	Insert	Toolholder
ø1.575	- ø0.236	0.375	4.514	JXPG06*	JSXXR/L063-S
ø1.575	- ø0.236	0.500	4.514	JXPG06*	JSXXR/L083-S
ø1.575	- ø0.472	0.375	4.593	JXPG12*	JSXXR/L063-S
ø1.575	- ø0.472	0.500	4.593	JXPG12*	JSXXR/L083-S
ø1.575	- ø0.630	0.375	4.750	JXPG16*	JSXXR/L063-S
ø1.575	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.575	- ø0.787	0.500	3.423	JXPG20*	JSXXR/L083F-S-CHP
ø1.969	- ø0.236	0.500	4.514	JXPG06*	JSXXR/L083-S
ø1.969	- ø0.236	0.625	4.514	JXPG06*	JSXXR/L103X-S-CHP
ø1.969	- ø0.472	0.500	4.593	JXPG12*	JSXXR/L083-S
ø1.969	- ø0.472	0.625	4.593	JXPG12*	JSXXR/L103X-S-CHP
ø1.969	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.969	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.969	- ø0.630	0.625	4.750	JXPG16*	JSXXR/L103X-S-CHP
ø1.969	- ø0.787	0.500	3.423	JXPG20*	JSXXR/L083F-S-CHP
ø1.969	- ø0.787	0.500	4.829	JXPG20*	JSXXR/L083X-S-CHP
ø1.969	- ø0.787	0.625	4.829	JXPG20*	JSXXR/L103X-S-CHP

MAX. PARTING-OFF DIA. & DEPTH

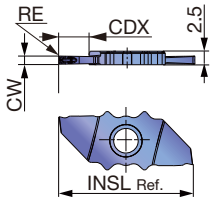
Main-spindle tooling	Sub-spindle tooling
 Main spindle	 Sub-spindle Main spindle

There will be no tool-workpiece interference when parting off the workpiece with the cutting edge position apart from the workpiece center by 0.031" or more.

INSERT

JXPS**R/L-F (with 3D chipbreaker, sharp edge)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

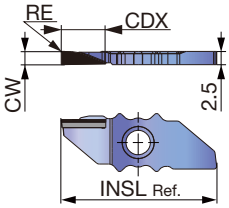
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)
JXPS06R06F	R	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS06L06F	L	0.6	0.024	0.002	●	0.236	0.138	0.827
JXPS12R08F	R	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12L08F	L	0.8	0.031	0.002	●	0.472	0.256	0.984
JXPS12R10F	R	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12L10F	L	1	0.039	0.002	●	0.472	0.256	0.984
JXPS12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.984
JXPS16R15F	R	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS16L15F	L	1.5	0.059	0.002	●	0.630	0.335	1.142
JXPS20R20F	R	2	0.079	0.002	●	0.787	0.413	1.299
JXPS20L20F	L	2	0.079	0.002	●	0.787	0.413	1.299

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

JXDX**R-F (PCD insert)





P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice

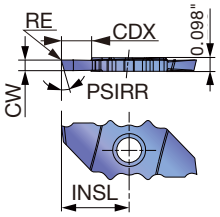
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	PCD DX110	CDX (in)	INSL (in)
JXDX12R20F	R	2	0.079	< 0.004	●	0.236	0.492
JXDX12R25F	R	2.5	0.098	< 0.004	●	0.256	0.492
JXDX16R25F	R	2.5	0.098	< 0.004	●	0.276	0.571

● : Line up

Reference pages: Toolholders → G142 - G143, Standard cutting conditions → G148

JXPG**R/L-F (sharp edge)





Right hand (R) shown.

P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous	★			
S	Superalloys	★			
H	Hard materials	★			

★ : First choice
☆ : Second choice

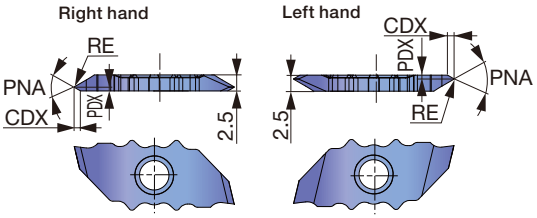
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated								CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR/L
					SH725											
JXPG06R10F	R	1	0.039	0.05	●								6	0.138	0.827	0°
JXPG06L10F	L	1	0.039	0.05	●								6	0.138	0.827	0°
JXPG06R15F	R	1.5	0.059	0.05	●								6	0.138	0.827	0°
JXPG06L15F	L	1.5	0.059	0.05	●								6	0.138	0.827	0°
JXPG06R10F-15	R	1	0.039	0.05	●								6	0.138	0.827	15°
JXPG06L10F-15	L	1	0.039	0.05	●								6	0.138	0.827	15°
JXPG06R15F-15	R	1.5	0.059	0.05	●								6	0.138	0.827	15°
JXPG06L15F-15	L	1.5	0.059	0.05	●								6	0.138	0.827	15°
JXPG12R15F	R	1.5	0.059	0.05	●								12	0.256	0.984	0°
JXPG12L15F	L	1.5	0.059	0.05	●								12	0.256	0.984	0°
JXPG12R20F	R	2	0.079	0.05	●								12	0.256	0.984	0°
JXPG12L20F	L	2	0.079	0.05	●								12	0.256	0.984	0°
JXPG12R15F-15	R	1.5	0.059	0.05	●								12	0.256	0.984	15°
JXPG12L15F-15	L	1.5	0.059	0.05	●								12	0.256	0.984	15°
JXPG12R20F-15	R	2	0.079	0.05	●								12	0.256	0.984	15°
JXPG12L20F-15	L	2	0.079	0.05	●								12	0.256	0.984	15°
JXPG16R15F	R	1.5	0.059	0.05	●								16	0.335	1.142	0°
JXPG16L15F	L	1.5	0.059	0.05	●								16	0.335	1.142	0°
JXPG16R20F	R	2	0.079	0.05	●								16	0.335	1.142	0°
JXPG16L20F	L	2	0.079	0.05	●								16	0.335	1.142	0°
JXPG16R15F-15	R	1.5	0.059	0.05	●								16	0.335	1.142	15°
JXPG16L15F-15	L	1.5	0.059	0.05	●								16	0.335	1.142	15°
JXPG16R20F-15	R	2	0.079	0.05	●								16	0.335	1.142	15°
JXPG16L20F-15	L	2	0.079	0.05	●								16	0.335	1.142	15°
JXPG20R15F	R	1.5	0.059	0.05	●								20	0.413	1.299	0°
JXPG20L15F	L	1.5	0.059	0.05	●								20	0.413	1.299	0°
JXPG20R20F	R	2	0.079	0.05	●								20	0.413	1.299	0°
JXPG20L20F	L	2	0.079	0.05	●								20	0.413	1.299	0°
JXPG20R15F-15	R	1.5	0.059	0.05	●								20	0.413	1.299	15°
JXPG20L15F-15	L	1.5	0.059	0.05	●								20	0.413	1.299	15°
JXPG20R20F-15	R	2	0.079	0.05	●								20	0.413	1.299	15°
JXPG20L20F-15	L	2	0.079	0.05	●								20	0.413	1.299	15°

● : Line-up
CUTDIA: Max. parting-off dia.
Packing quantity = 5 pcs.

Reference pages: Toolholders → G142 - G143, Standard cutting conditions → G148

JXTG12FR/L-60 (For Threading / Sharp edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice

Designation	HAND	RE (in)	Coated	TPI Thread per inch	PDX (in)	CDX (in)	PNA
			SH725				
JXTG12FR-60A-000	R	Flat 0.002 max	●	64 - 127	0.010	0.016	60°
JXTG12FL-60A-000	L	Flat 0.002 max	●	64 - 127	0.010	0.016	60°
JXTG12FR-60B-000	R	Flat 0.002 max	●	64 - 127	0.089	0.016	60°
JXTG12FL-60B-000	L	Flat 0.002 max	●	64 - 127	0.089	0.016	60°
JXTG12FR-60A-005	R	R 0.002	●	25 - 64	0.024	0.039	60°
JXTG12FL-60A-005	L	R 0.002	●	25 - 64	0.024	0.039	60°
JXTG12FR-60B-005	R	R 0.002	●	25 - 64	0.075	0.039	60°
JXTG12FL-60B-005	L	R 0.002	●	25 - 64	0.075	0.039	60°
JXTG12FR-60N-010	R	R 0.004	●	16 - 25	0.049	0.081	60°
JXTG12FL-60N-010	L	R 0.004	●	16 - 25	0.049	0.081	60°

● : Line-up
Packing quantity = 5 pcs.

Reference pages: Toolholders → G142 - G143, Standard cutting conditions → G148

DUOJCUT UST

STANDARD CUTTING CONDITIONS

Parting, Grooving

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

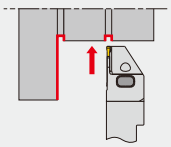
For aluminium and non-ferrous metal PCD insert

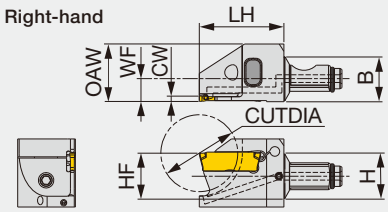
ISO	Workpiece materials	Grades	Operation	Cutting speed *Vc* (sfm)	Feed *f* (ipr)	Depth of cut *ap* (in)
N	Aluminum alloys 5056, 6061, etc.	DX110	Grooving	328 - 984	0.0012 - 0.0059	-
N		DX110	Turning	328 - 984	0.0012 - 0.0059	< 0.236"

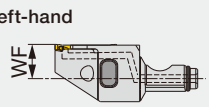
TUNGCUT

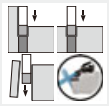
QC12-JTTER/L-CHP

Modular head for external grooving and parting, with high pressure coolant capability









Metric	CW	Seat size	CUTDIA	H	B	LH	HF	WF (1)	OAW	Torque*
QC12-JTTER/L1.2D20-CHP	1.2 (0.047")	0.9	20 (0.787")	12 (0.472")	12 (0.472")	22 (0.866")	12 (0.472")	6/9 (0.236/0.354")	15 (0.591")	1.5 (1.11)
QC12-JTTER/L1.4D20-CHP	1.4 (0.055")	1	20 (0.787")	12 (0.472")	12 (0.472")	22 (0.866")	12 (0.472")	6/9 (0.236/0.354")	15 (0.591")	1.5 (1.11)
QC12-JTTER/L2D20-CHP	2 (0.079")	2	20 (0.787")	12 (0.472")	12 (0.472")	22 (0.866")	12 (0.472")	6/9 (0.236/0.354")	15 (0.591")	1.5 (1.11)

(1) "WF" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Torque*: Recommended clamping torque: N·m (lbs·ft)

SPARE PARTS



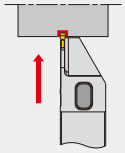


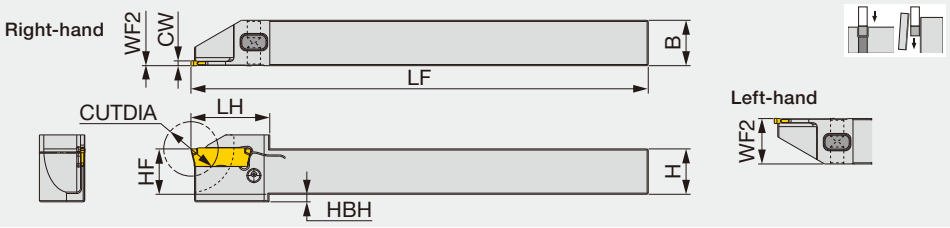

Designation	Clamping screw	Clamping pin	Wrench	O-ring
QC12-JTTER/L...	SSM3.5x0.35	PIN-SL-TC	P-2F	ORSS-0454.5X1.0NBR70

Reference pages: QC12-JTTER/L-CHP: Inserts → G154 - G161
Shank, Accessory → G115 - G116, Standard cutting conditions → G162

JTTER/L

External grooving and parting toolholder, for Swiss lathes



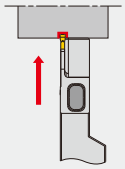


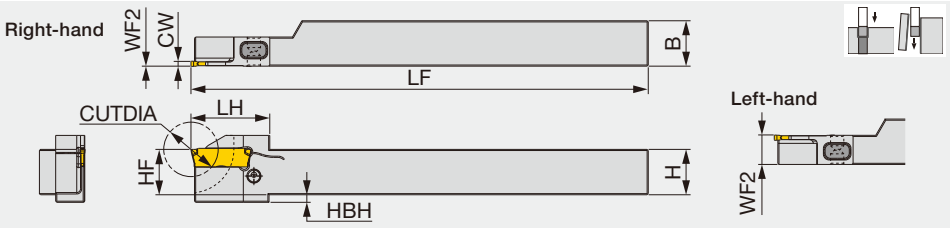
Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque*
JTTER/L1010H1.2D12	1.2	0.9	12	10	10	100	17	10	0/10	-	1.5
JTTER/L1212F1.2D16	1.2	0.9	16	12	12	85	19	12	0/12	-	1.5
JTTER/L1212X1.2D16	1.2	0.9	16	12	12	120	19	12	0/12	-	1.5
JTTER/L1212X1.2D20	1.2	0.9	20	12	12	120	21	12	0/12	2	1.5
JTTER/L1616X1.2D20	1.2	0.9	20	16	16	120	21	16	0/16	-	2

(1) "WF" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Torque*: Recommended clamping torque (N·m)

JTTER/L-S

External grooving and parting toolholder, for Swiss lathes (for sub spindle)





Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	Torque*
JTTER/L1010H1.2D12-S	1.2	0.9	12	10	10	100	17	10	0/7.7	-	1.5
JTTER1212F1.2D16-S (2)	1.2	0.9	16	12	12	85	19	12	0	-	1.5
JTTER/L1212X1.2D16-S	1.2	0.9	16	12	12	120	21	12	0/7.7	-	1.5
JTTER/L1212X1.2D20-S	1.2	0.9	20	12	12	120	21	12	0/7.7	2	1.5
JTTER/L1616X1.2D20-S	1.2	0.9	20	16	16	120	21	16	0/7.7	-	1.5

(1) "WF" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(2) No clamping screw from the insert side.
Torque*: Recommended clamping torque (N·m)

SPARE PARTS



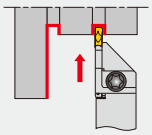


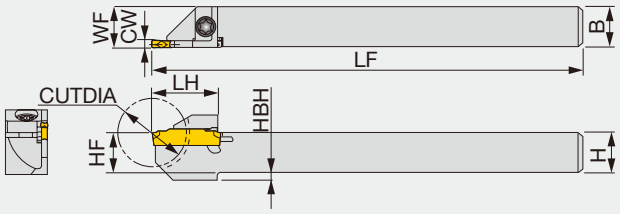
Designation	Clamping screw	Clamping pin	Wrench
JTTER/L1010, 1212..., JTTER/L**-S	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1616...	SRM5-24145-RL	PIN-32121	P-2.5F

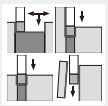
Reference pages: JTTER/L, JTTER/L-S: Inserts → G154 - G161, Standard cutting conditions → G162

JCTER/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

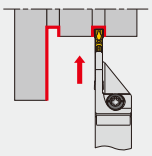
Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	Torque
JCTER/L08-2T12	0.079	2	2	0.945	0.500	0.500	4.750	0.748	0.500	0.504	0.079	2.21
JCTER/L08-3T12	0.118	3	3	0.945	0.500	0.500	4.750	0.748	0.500	0.512	0.079	2.21
JCTER/L10-2T16	0.079	2	2	1.260	0.625	0.625	4.750	0.945	0.625	0.629	-	2.21
JCTER/L10-3T16	0.118	3	3	1.260	0.625	0.625	4.750	0.945	0.625	0.637	-	2.21

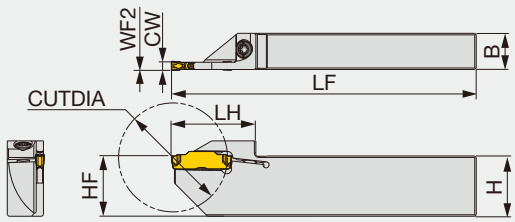
Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

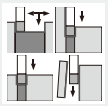
(1) The value for "WF" is true when the insert with the width, indicated in "CW" in the table is mounted. • CUTDIA: Maximum parting-off diameter
Torque: Recommended clamping torque: lbs·ft (*N·m)

JCTER/L2012

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	Torque*
JCTER/L2012H2T18	2	2	36	20	12	100	25	20	0.1	3
JCTER/L2012H3T21	3	3	42	20	12	100	28	20	0.3	3

(1) "WF" value is calculated with groove width "CW" shown in the table. • CUTDIA: Max. parting diameter
Torque*: Recommended clamping torque (N·m)

SPARE PARTS



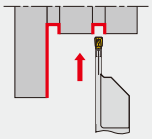


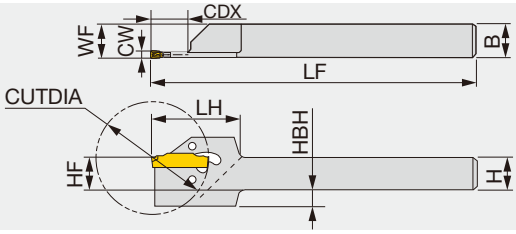
Designation	Clamping screw	Wrench
JCTER/L...,JCTER/L2012...	CSHB-4-A	T-15F

Reference pages: JCTER/L, JCTER/L2012: Inserts → G154 - G161, Standard cutting conditions → G162

CGER/L

External deep grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

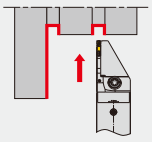
Metric	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

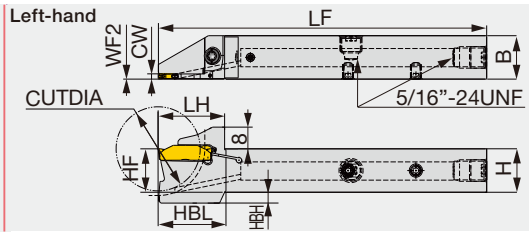
(1) DG*/SG* Maximum diameter of parting off Dmax, can be increased by using SG* insert for some toolholders. (2) "WF" value is calculated with groove width "CW" shown in the table. Wrench, CRW**, should be ordered separately. Insert is clamped by the elastic deformation of upper jaw.

JCTER/L-CHP

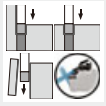
Direct connection

External grooving and parting-off toolholder, high pressure coolant compatible









Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque
JCTER/L08X2T12-CHP	0.079	2	0.980	0.500	0.500	4.750	0.972	0.500	0 / 0.500	0.169	0.965	2.21
JCTER/L10X2T12-CHP	0.079	2	0.980	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.039	0.965	2.21
JCTER/L10X2T16-CHP	0.079	2	1.260	0.625	0.625	4.750	0.972	0.625	0 / 0.625	0.157	0.965	2.21
JCTER/L12X2T16-CHP	0.079	2	1.260	0.750	0.750	4.750	0.972	0.750	0 / 0.750	0.037	0.965	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2(1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

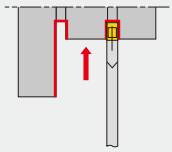
SPARE PARTS

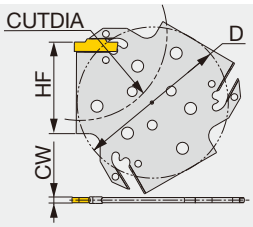
Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench	Wrench (Option)
CGER/L2020-1.4T14	-	-	-	-	-	-	CRW23
CGER/L****-2T17 - 4T19	-	-	-	-	-	-	CRW33
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2	-

Reference pages: CGER/L, JCTER/L-CHP: Inserts → G154 - G161, Standard cutting conditions → G162

CHGP

Parting-off and external grooving blade





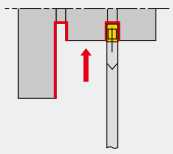


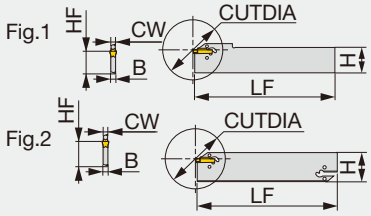
Metric	CW	Seat size	CUTDIA	HF	D
CHGP52-2T	2	2	52	27	48.3
CHGP52-3T	3	3	52	27	48.3
CHGP82-3T	3	3	82	42	69.3
CHGP82-4T	4	4	82	42	69.3

.When depth is deeper than insert length - 1.5mm, 1 corner type is recommended

CGP

External deep grooving and parting blade





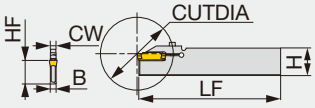
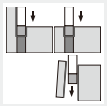


Fig.3



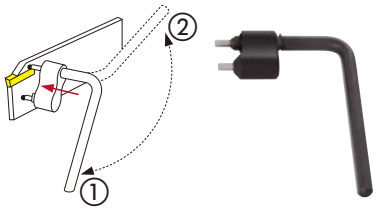
Metric	CW	Seat size	CUTDIA	H	B	LF	HF	Fig.	Torque*
CGP26-1.4S	1.4	1	26	26	1	150	21.4	1	-
CGP32-1.4D	1.4	1	26	32	1	150	24.8	2	-
CGP26-2S	2	2	40	26	1.8	150	21.4	1	-
CGP32-2D	2	2	50	32	1.8	150	24.8	2	-
CGP26-3S	3	3	50	26	2.4	150	21.4	1	-
CGP32-3D	3	3	100	32	2.4	150	24.8	2	-
CGP26-4S	4	4	80	26	3.2	150	21.4	1	-
CGP32-4D	4	4	100	32	3.2	150	24.9	2	-
CGP45-4D	4	4	120	45	3.2	150	38.1	2	-
CGP32-5D	5	5	120	32	4	150	24.9	2	-
CGP32-6D	6	6	120	32	5.2	150	24.9	2	-
CGP32-8S-CL	8	8	80	32	6.2	150	24.9	3	3

When depth is deeper than (insert length - 1.5mm), 1 corner type is recommended.
Wrench (CRW...) is not included. Please order it separately.
*Torque: Recommended clamping torque (N·m)

Caution

Newly developed clamp

Insert is clamped by the elastic deformation of upper jaw.
Low clamping stress increases the stability and tool life.



unclamp :①→②
clamp :②→①

SPARE PARTS



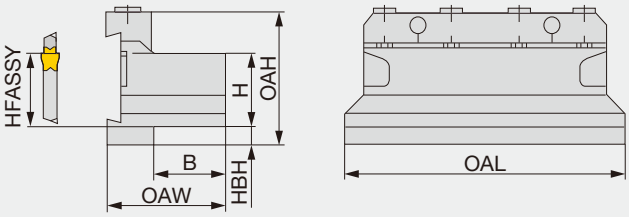



Designation	Clamp	Clamping screw	Wrench	Wrench (Optional)
CGP**-1.4*	-	-	-	CRW23
CHGP..., CGP**-2/3/4/5/6	-	-	-	CRW33
CGP32-8S-CL	-	CM4X0.7X20-M0-A	P-3	-

Reference pages: CHGP: Inserts → G154 - G161, Toolblock → G165
CGP: Inserts → G154 - G161, Toolblock → F252 - F253, G153
Standard cutting conditions → G162

CTBU

Tool blocks for CGP blade

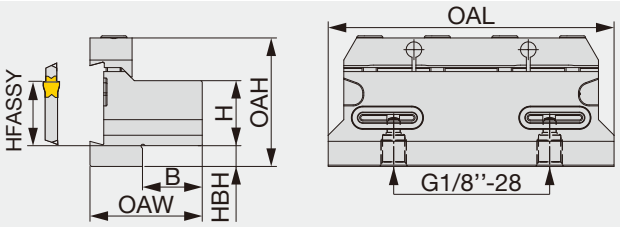


Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.750	0.354	1.693	1.496	CGP26...
CTBU16-26-U	1.000	0.906	4.331	1.000	0.197	1.772	1.654	CGP26...
CTBU12-32-U	0.750	0.748	3.937	0.750	0.512	1.969	1.496	CGP32...
CTBU16-32-U	1.000	0.906	4.331	1.000	0.315	1.969	1.654	CGP32...
CTBU20-32-U	1.250	1.142	4.331	1.250	0.197	2.126	1.890	CGP32...

Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	20	9	43	38	CGP26...
CTBU25-26	25	23	110	25	5	45	43	CGP26...
CTBU20-32	20	19	100	20	13	50	38	CGP32...
CTBU25-32	25	23	110	25	8	50	42	CGP32...
CTBU32-32	32	29	110	32	5	54	48	CGP32...

CTBU-CHP

Tool block for CGP-CHP blade with high pressure internal coolant capacity



Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU16-32-U-CHP	1.000	0.906	4.331	1.000	0.315	1.97	1.654	CGP32-*D-CHP

Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU25-32-CHP	25	23	110	25	8	50	43.2	CGP32-*D-CHP

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Clamping screw	Clamp	Wrench	O-ring
CTBU12-26-U , CTBU20-26	CM6X30-S	CT-86	P-5	-
CTBU12-32-U, CTBU25-26	CM6X30-S	CT-105	P-5	-
CTBU16-26-U, CTBU20-32	CM6X30-S	CT-100	P-5	-
CTBU16-32-U, CTBU20-32-U , CTBU25-32, CTBU32-32	CM6X30-S	CT-110	P-5	-
CTBU16-32-U-CHP, CTBU25-32-CHP	SRM6X16DIN912-12.9	CT-110	P-5	OR14X2.5NN

Reference pages: CTBU: Blade → G152, CTBU-CHP: Blade → F254

External grooving and parting

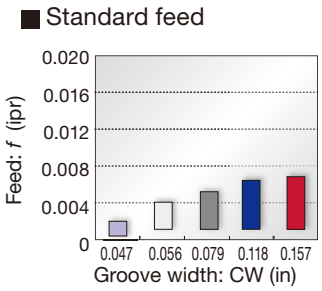
DGS type (2 corners) SGS type (1 corner)

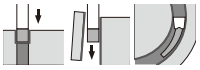


G156, G159

For Swiss lathes

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.047" - 0.157"





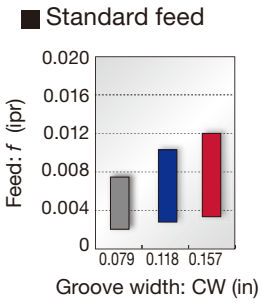
DGM type (2 corners) SGM type (1 corner)

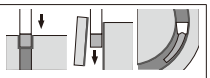


G157, G158

High fracture resistance

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.157"





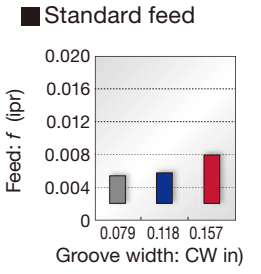
DGL type (2 corners)

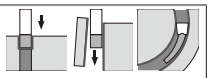


G161

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties in chip control
CW = 0.079" - 0.157"





Please see page G*** for the product details.

External grooving

DGE type (2 corners)



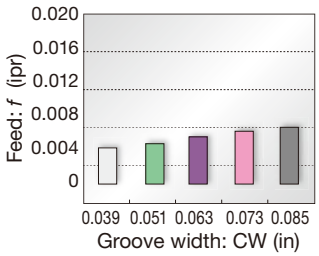
G160

For shallow grooves with high accuracy

Excellent chip control

CW = 1 - 2.15 mm
(0.039" - 0.085")

■Standard feed





DGG type (2 corners)



G160

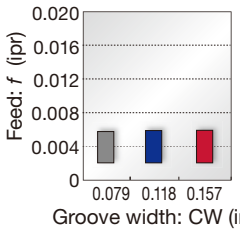
For non-ferrous materials and titanium alloys

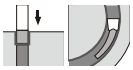
Chipbreaker with low cutting force

Sharp cutting edge that prevents vibration and delivers fine surface finish

CW = 0.079" - 0.157"

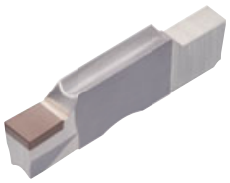
■Standard feed





External grooving of hardened steels

SGN-CBN type (1 corner)



G161

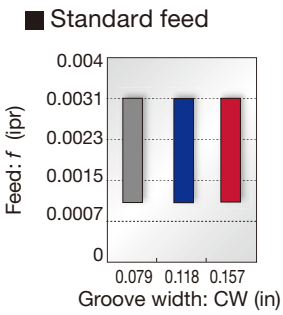
For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels

Close tolerance width for finishing (W = ±0.001")

CW = 0.079" - 0.157"

■Standard feed

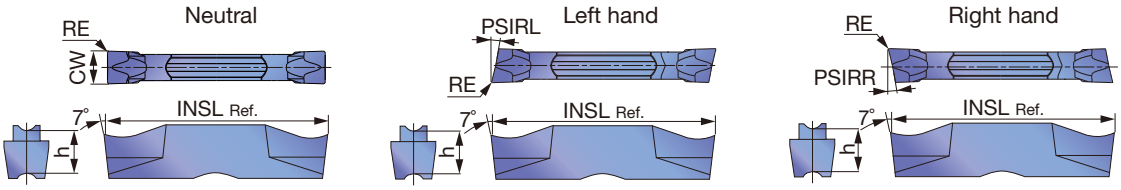




Please see page G*** for the product details.

DGS

External grooving and parting



		Coated						Cermet		Uncoated					
		T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530		KS05F					
P	Steel	★	★	☆	★	☆	★	★							
M	Stainless		★	☆	★	★	★								
K	Cast iron		★		★	☆	★	☆		☆					
N	Non-ferrous									☆					
S	Superalloys		★	☆	★					★					
H	Hard materials														

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated T9225	Coated AH7025	Coated AH725	Coated AH8005	Coated GH130	Coated AH6235	Cermet NS9530	Uncoated KS05F	INSL (in)	h (in)	PSIRL	PSIRR
DGS1.2-003	0.9	N	1.2	0.047	0.001			●						0.630	0.185	0°	0°
DGS1.4-005	1	N	1.4	0.055	0.002			●						0.630	0.169	0°	0°
DGS1.4-010	1	N	1.4	0.055	0.004			●						0.630	0.169	0°	0°
DGS1.4-016	1	N	1.4	0.055	0.006		●	●		●				0.630	0.169	0°	0°
DGS2-005	2	N	2	0.079	0.002			●						0.787	0.197	0°	0°
DGS2-010	2	N	2	0.079	0.004			●						0.787	0.197	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008		●	●		●				0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008		●	●		●				0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.001			●		●				0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.001			●		●				0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008		●	●		●				0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008		●	●		●				0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.001			●		●				0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.001			●		●				0.768	0.197	15°	0°
DGS2.39-020	2	N	2.39	0.094	0.008		●		●		●			0.787	0.197	0°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008		●	●		●				0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008		●	●		●				0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.001			●		●				0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.001			●		●				0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008		●	●		●				0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008		●	●		●				0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.001			●		●				0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.001			●		●				0.766	0.197	15°	0°
DGS3.18-020	3	N	3.18	0.125	0.008		●		●		●			0.787	0.197	0°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012		●	●		●				0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012		●	●		●				0.787	0.197	4°	0°
DGS4.76-040	5	N	4.76	0.187	0.016		●		●		●			0.984	0.217	0°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●	0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●		●	0.984	0.217	0°	0°
DGS6.35-040	6	N	6.35	0.250	0.016		●		●		●			0.984	0.217	0°	0°
DGS8-040	8	N	8	0.315	0.016		●		●		●		●	1.181	0.264	0°	0°

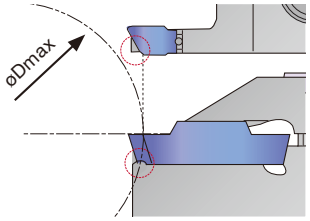
● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameters than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.142
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

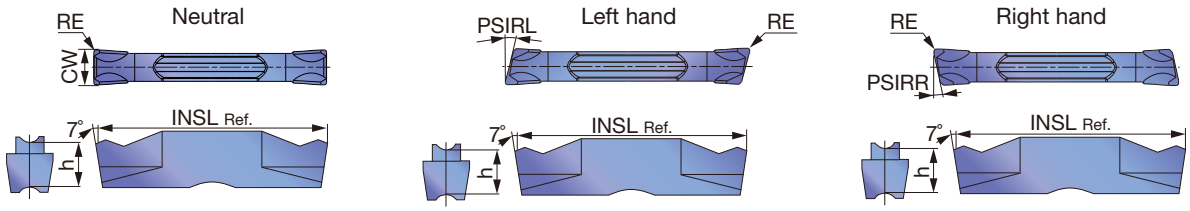
Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.142
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.339



Reference pages: Toolhoders → G149 - G153, Standard cutting conditions → G162

DGM

External grooving and parting



P	Steel	★	★	☆	★		☆	★		★				
M	Stainless		★	☆	★		★	★						
K	Cast iron		★		★	☆	☆	★		☆			☆	
N	Non-ferrous												☆	
S	Superalloys		★	☆	★	★							★	
H	Hard materials													

★ : First choice
☆ : Second choice

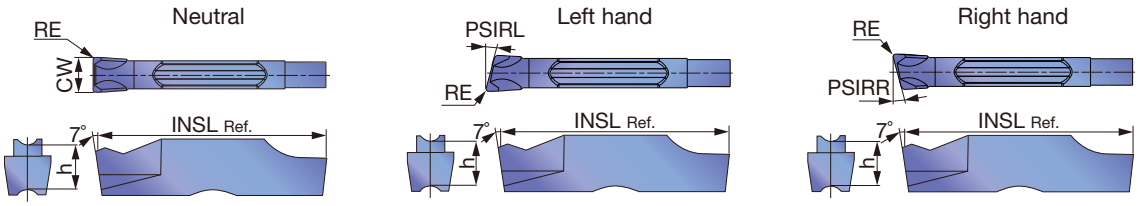
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			Uncoated			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	AH7025	AH725	AH8005	AH905	GH130	AH6235	NS9530			KS05F						
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●	●	●			●			0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008		●	●			●								0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008		●	●			●								0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008		●	●			●								0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008		●	●			●								0.787	0.197	8	0°
DGM2-020-15R	2	R	2	0.079	0.008		●	●			●								0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008		●	●			●								0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.001			●			●								0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.001			●			●								0.762	0.197	15°	0°
DGM2.39-020	2	N	2.39	0.094	0.008		●		●			●							0.787	0.197	0°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008		●	●			●								0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008		●	●			●								0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.001			●			●								0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.001			●			●								0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008		●	●			●								0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008		●	●			●								0.787	0.197	15°	0°
DGM3.18-020	3	N	3.18	0.125	0.008		●		●			●							0.787	0.197	0°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	●	●			●			0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012		●	●			●								0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012		●	●			●								0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012		●	●			●								0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012		●	●			●								0.787	0.197	15°	0°
DGM4.76-040	5	N	4.76	0.187	0.016		●		●			●							0.984	0.217	0°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	●	●			●			0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012		●	●			●								0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●	●				●			0.984	0.217	0°	0°
DGM6.35-040	6	N	6.35	0.250	0.016		●		●			●							0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	●	●	●		●	●				●			1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → G149 - G153, Standard cutting conditions → G162

SGM

External deep grooving and parting



P	Steel	★	☆	★	☆	★						
M	Stainless	★	☆	★	★	★						
K	Cast iron	★		★	☆	★		☆				
N	Non-ferrous							☆				
S	Superalloys	★	☆	★				★				
H	Hard materials											

★ : First choice
☆ : Second choice

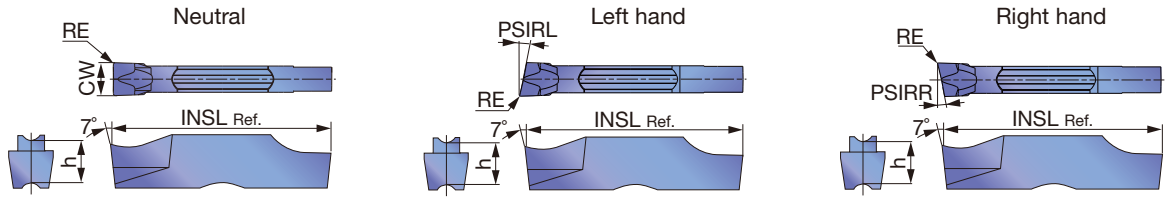
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated				INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F							
SGM2-020	2	N	2	0.079	0.008	●	●	●	●	●	●				0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●		●						0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●		●						0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●				0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●		●						0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●		●						0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●		●						0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●		●						0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●				0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●		●						0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●		●						0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●				0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●				0.984	0.217	0°	0°
SGM8-040	8	N	8	0.315	0.016	●		●		●	●				1.181	0.264	0°	0°

● : Line up

Reference pages: Toolhoders → G149 - G153, Standard cutting conditions → G162

SGS

External deep grooving and parting



P	Steel	★	☆	★	☆	★						
M	Stainless	★	☆	★	★	★						
K	Cast iron	★		★	☆	★		☆				
N	Non-ferrous							☆				
S	Superalloys	★	☆	★				★				
H	Hard materials											

★ : First choice
☆ : Second choice

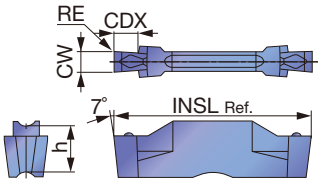
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Uncoated					INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	AH8005	GH130	AH6235	KS05F								
SGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●		●							0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●		●							0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.001		●		●							0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.001		●		●							0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●		●							0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●		●							0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.001		●		●							0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.001		●		●							0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●					0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
SGS8-040	8	N	8	0.315	0.016	●		●		●						1.181	0.264	0°	0°

● : Line up

Reference pages: Toolhoders → G149 - G153, Standard cutting conditions → G162

DGE

External grooving (for high precision)



P	Steel	★	☆	☆			★		
M	Stainless	★	☆	★					
K	Cast iron	★		☆			☆		
N	Non-ferrous								
S	Superalloys	★	☆						
H	Hard materials								

★ : First choice
☆ : Second choice

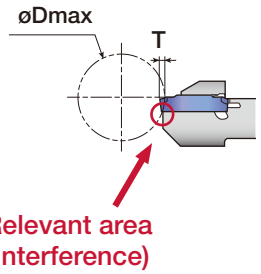
Designation	Seat size	CW±0.05 (mm)	CW±0.0008 (in)	RE (in)	Coated			Cermet		CDX (in)	INSL (in)	h (in)
					AH7025	AH725	GH130	NS9530				
DGE100-000	2	1	0.039	0		●	●	●		0.098	0.787	0.197
DGE130-000	2	1.3	0.051	0		●	●	●		0.098	0.787	0.197
DGE160-010	2	1.6	0.063	0.004	●	●	●	●		0.098	0.787	0.197
DGE185-010	2	1.85	0.073	0.004	●	●	●	●		0.138	0.787	0.197
DGE215-015	2	2.15	0.085	0.006	●	●	●	●		0.138	0.787	0.197

● : Line up

Caution

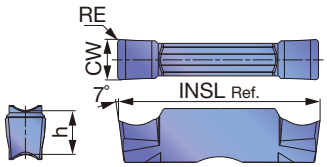
øDmax is limited as shown in the picture to the right according to the groove depth, G.D. Please refer to the following table. G.D = Groove depth

Designation	Max. groove depth (in)	øDmax (in)				
		T = 0.039	T = 0.059	T = 0.079	T = 0.098	T = 0.118
DGE100-000	0.079	∞	0.73	0.45	-	-
DGE130-000						
DGE160-010						
DGE185-010	0.118				0.35	0.28
DGE215-015						



DGG

External grooving (for high precision)



P	Steel	★			★					
M	Stainless	★								
K	Cast iron	★			☆		☆			
N	Non-ferrous						★			
S	Superalloys	★					☆			
H	Hard materials									

★ : First choice
☆ : Second choice

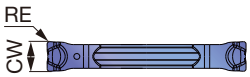
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated	Cermet	Uncoated			INSL (in)	h (in)
					AH7025	NS9530	KS05F				
DGG200-020	2	2	0.079	0.008	●	●	●			0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●			0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●			0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●			0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●			0.984	0.217

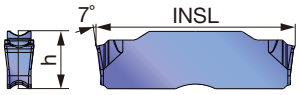
● : Line up

Reference pages: Toolholders → G149 - G153, Standard cutting conditions → G162

DGL

External grooving and parting





P	Steel	★	★	★
M	Stainless	★	★	★
K	Cast iron	★	★	★
N	Non-ferrous			
S	Superalloys	★	★	
H	Hard materials			

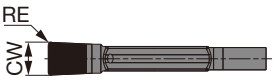
★ : First choice
☆ : Second choice

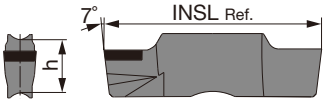
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH8005	Coated AH6235	INSL (in)	h (in)
DGL2-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DGL3-025	3	3	0.118	0.010	●	●	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	●	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	●	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	●	●	0.984	0.217

● : Line up

SGN

External grooving





P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)	Edge prep. No symbol	Edge prep. S	Edge prep. H
SGN200-020	2	2	0.079	0.008	●	0.787	0.197	○		
SGN200-020-S	2	2	0.079	0.008	●	0.787	0.197		○	
SGN200-020-H	2	2	0.079	0.008	●	0.787	0.197			○
SGN300-020	3	3	0.118	0.008	●	0.787	0.197	○		
SGN300-020-S	3	3	0.118	0.008	●	0.787	0.197		○	
SGN300-020-H	3	3	0.118	0.008	●	0.787	0.197			○
SGN400-020	4	4	0.157	0.008	●	0.787	0.197	○		
SGN400-020-S	4	4	0.157	0.008	●	0.787	0.197		○	
SGN400-020-H	4	4	0.157	0.008	●	0.787	0.197			○
SGN500-020-S	5	5	0.197	0.008	●	0.984	0.217		○	
SGN500-020-H	5	5	0.197	0.008	●	0.984	0.217			○

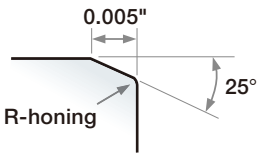
●: Line up

Edge preparations

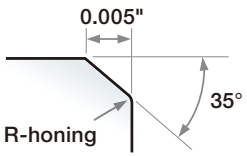
No symbol



-S



-H



Reference pages: Toolhoders → G149 - G153, Standard cutting conditions → G162

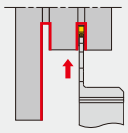
STANDARD CUTTING CONDITIONS

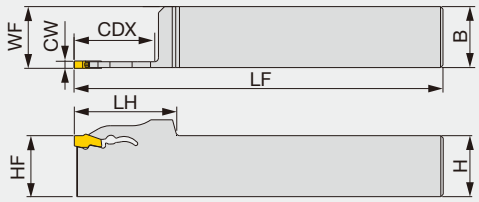
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Wear resistance	T9225, AH8005	262 - 984
		< 300 HB	Impact resistance	AH6235, GH130	164 - 394
		< 300 HB	Surface quality	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Wear resistance	AH8005	164 - 394
		< 200 HB	Impact resistance	AH6235, GH130	164 - 394
K	Gray cast iron Class 25, Class 30, etc.	-	First choice	T515	492 - 2297
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 591
	Ductile cast iron 60-40-18, 80-55-06, etc.	-	First choice	T515	492 - 984
		-	Impact resistance	AH8005, AH7025, AH6235, GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel718, etc.	< HRC 40	First choice	AH8005	66 - 197
		< HRC 40	Impact resistance	AH7025, AH725, AH6235	66 - 131
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	KS05F	66 - 328
		< HRC 40	Impact resistance	AH7025, AH725	66 - 262
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

Please see page G154, G155 for feed: *f* (mm/rev).

QSER/L

External toolholders for grooving and parting







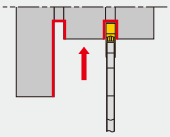
Right hand (R) shown.

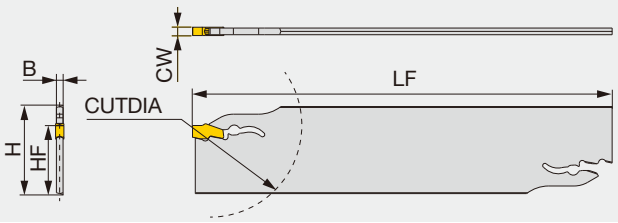
Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	0.118	1.024	3	0.750	0.750	5.000	1.417	0.750	0.764
QSER/L12-3T33	0.118	1.299	3	0.750	0.750	5.000	1.654	0.750	0.764
QSER/L16-3T26	0.118	1.024	3	1.000	1.000	6.000	1.417	1.000	1.012
QSER/L16-3T33	0.118	1.299	3	1.000	1.000	6.000	1.654	1.000	1.012
QSER/L12-4T33	0.157	1.299	4	0.750	0.750	5.000	1.654	0.750	0.768
QSER/L16-4T33	0.157	1.299	4	1.000	1.000	6.000	1.654	1.000	1.016
QSER/L16-5T33	0.197	1.299	5	1.000	1.000	6.000	1.654	1.000	1.020

Metric	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L2020-2T26	2	26	2	20	20	125	36	20	20.1
QSER/L2020-2T33	2	33	2	20	20	125	42	20	20.1
QSER/L2020-3T26	3	26	3	20	20	125	36	20	20.3
QSER/L2020-3T33	3	33	3	20	20	125	42	20	20.3
QSER/L2020-4T33	4	33	4	20	20	125	42	20	20.4

QSP

Blades for external deep grooving and parting







Metric	CW	CUTDIA	Seat size	H	B	LF	HF
QSP26-2D	2	50	2	26	1.8	150	21.4
QSP32-2D	2	66	2	32	1.8	150	24.8
QSP26-3D	3	75	3	26	2.4	150	21.4
QSP32-3D	3	120	3	32	2.4	150	24.8
QSP26-4D	4	80	4	26	3.2	150	21.4
QSP32-4D	4	120	4	32	3.2	150	24.9
QSP32-5D	5	120	5	32	4	150	24.9

SPARE PARTS

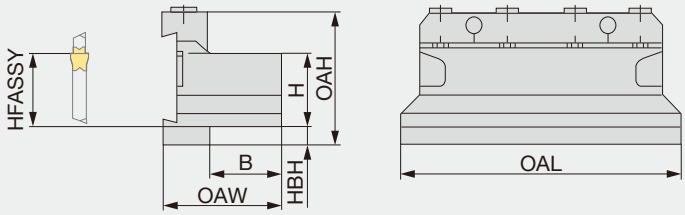


Designation	Wrench
QSER/L..., QSP...	QL-39

Reference pages: QSER/L: Inserts → G166
QSP: Inserts → G166, Toolblock → G164
Standard cutting conditions → G167

CTBU

Tool block for QSP blades



Inch	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.750	0.354	1.690	1.496	QSP26...
CTBU16-26-U	1.000	0.906	4.331	1.000	0.197	1.770	1.654	QSP26...
CTBU12-32-U	0.750	0.748	3.937	0.750	0.512	1.970	1.496	QSP32...
CTBU16-32-U	1.000	0.906	4.331	1.000	0.315	1.970	1.654	QSP32...
CTBU20-32-U	1.250	1.142	4.331	1.250	0.197	2.130	1.890	QSP32...

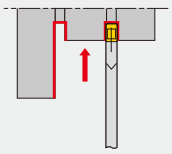
Metric	H	B	OAL	HFASSY	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	20	9	43	38	QSP26...
CTBU20-32	20	19	100	20	13	50	38	QSP32...

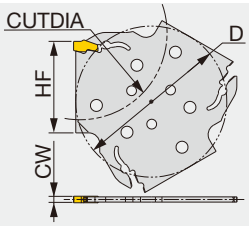
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU12-26-U,CTBU20-26	CT-86	CM6X30-S	P-5
CTBU16-26-U,CTBU20-32	CT-100	CM6X30-S	P-5
CTBU12-32-U,CTBU25-26	CT-105	CM6X30-S	P-5
CTBU16-32-U,CTBU20-32-U, CTBU25-32, CTBU32-32	CT-110	CM6X30-S	P-5

QSG

Parting-off and external grooving blade





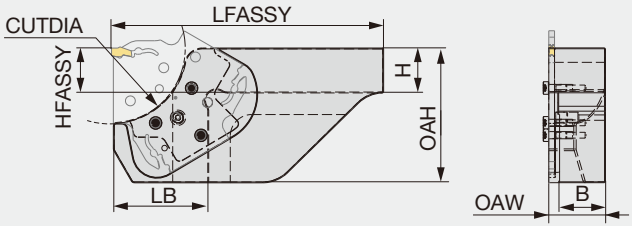


Metric	CW	Seat size	CUTDIA	HF	D
QSG52-2T	2	2	52	27	48.3
QSG82-2T	2	2	82	42	69.3
QSG52-3T	3	3	52	27	48.3
QSG82-3T	3	3	82	42	69.3
QSG52-4T	4	4	52	27	69.3
QSG82-4T	4	4	82	42	69.3

Reference pages: CTBU: Blade → G163
QSG: Inserts → G166, Toolblock → G165
Standard cutting conditions → G167

CHTBR/L

Tool block for QSG blade



Right hand (R) shown.

Inch	CUTDIA	H	B	LFASSY	HFASSY	OAH	OAW	LB	Blade
CHTBR/L12-52	2.047	0.750	0.770	4.000	0.750	1.970	1.000	1.457	QSG52 / CHGP52
CHTBR/L12-82	3.228	0.750	0.770	5.500	0.750	2.950	1.000	2.087	QSG82 / CHGP82
Metric	**CUTDIA**	**H**	**B**	**LFASSY**	**HFASSY**	**OAH**	**OAW**	**LB**	**Blade**
CHTBR/L2020-52	52	20	20.5	100	20	50	26.5	37	QSG52 / CHGP52
CHTBR/L2020-82	82	20	20.5	140	20	75	26.5	53	QSG82 / CHGP82

The blade clamping screw heads protrude out for as much as 0.122" (3.1 mm) over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

SPARE PARTS

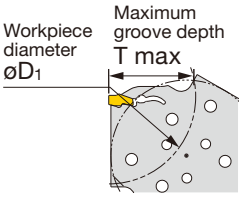





Designation	Clamping screw	Grip	Torx bit	Wrench
CHTBR/L...	SR-ISO14580M4X10	SW6-SD	BLDT20/S7	-

Maximum groove depth (T max) as function of workpiece diameter (øD1)

Designation	øD1 (in)																	
CHTBR/L****-52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L****-82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
T max	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157



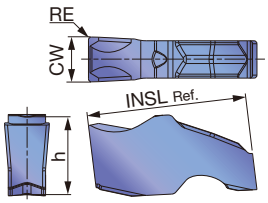
Designation	øD1 (in)												
CHTBR/L****-82	3.268	3.307	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976
T max	1.339	1.299	1.260	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866

Reference pages: CHTBR/L: Blade → G164
Standard cutting conditions → G167

QGM

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

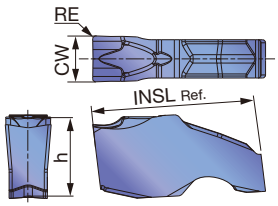
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGM2-020	2	2	0.079	0.008	●	0.433	0.209
QGM3-020	3	3	0.118	0.008	●	0.433	0.209
QGM4-030	4	4	0.157	0.012	●	0.512	0.287
QGM5-030	5	5	0.197	0.012	●	0.512	0.287

●: Line up

QGS

External deep grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
QGS2-020	2	2	0.079	0.008	●	0.433	0.209
QGS3-020	3	3	0.118	0.008	●	0.433	0.209
QGS4-030	4	4	0.157	0.012	●	0.512	0.287
QGS5-030	5	5	0.197	0.012	●	0.512	0.287

●: Line up

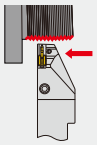
Reference pages: Toolhoders → G163 - G165

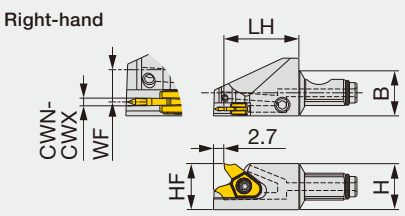
STANDARD CUTTING CONDITIONS

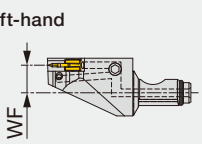
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)
P	Steels 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast irons 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

MINI LOCK GROOVE
QC12-SVER/L-CHP

Modular head for external grooving and threading, with high pressure coolant capability





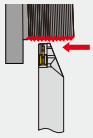


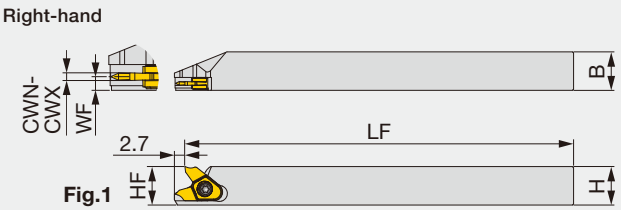
Metric	Pitch (mm)	TPI	H	B	LH	HF	WF (1)	Insert	Torque*
QC12-SVER/L10-CHP	0.4 - 1.5	64 - 12	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	4.19/7.19 (0.165"/0.283")	VG*10...	1.3 (0.96)

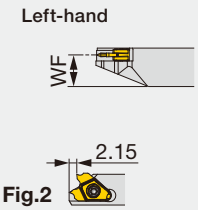
Torque*: Recommended clamping torque: N·m (lbs·ft)
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width.
The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

SVER/L

External grooving and threading toolholder







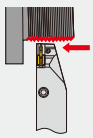
Inch	Pitch (mm)	TPI	H	B	LF	HF	WF (1)	Insert	Torque	Fig.
SVER/L06-10	0.4 - 1.5	64 - 12	0.375	0.375	4.750	0.375	0.070/0.304	VG*10...	0.96	1
SVER/L08-10	0.4 - 1.5	64 - 12	0.500	0.500	4.750	0.500	0.070/0.430	VG*10...	0.96	2

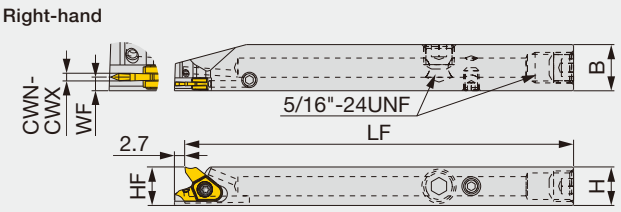
Metric	Pitch	TPI	H	B	LF	HF	WF (1)	Insert	Torque*	Fig.
SVER/L1010H10	0.4 - 1.5	64 - 12	10	10	100	10	1.78/8.23	VG*10...	1.3	1
SVER/L1212X10	0.4 - 1.5	64 - 12	12	12	120	12	1.78/10.23	VG*10...	1.3	1

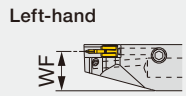
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width.
The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

SVER/L-CHP

External grooving and threading toolholder, with high pressure coolant capability







Inch	Pitch (mm)	TPI	H	B	LF	HF	WF (1)	Insert	Torque
SVER/L08-10-CHP	0.4 - 1.5	64 - 12	0.500	0.500	4.750	0.500	0.070/0.430	VG*10...	0.96

Metric	Pitch	TPI	H	B	LF	HF	WF (1)	Insert	Torque*
SVER/L1012H10-CHP	0.4 - 1.5	64 - 12	10	12	100	10	1.78/10.23	VG*10...	1.3
SVER/L1212X10-CHP	0.4 - 1.5	64 - 12	12	12	120	12	1.78/10.23	VG*10...	1.3

Compatible to the direct internal coolant supply system without the use of external coolant hose.
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width.
The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

SPARE PARTS







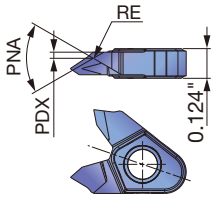


Designation	Clamping screw	Wrench 1	O-ring	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
QC12-SVER...	CSTB-2.5L054DL	T-7F	ORSS-0454.5X1.0NBR70	-	-	-	-
QC12-SVEL...	CSTB-2.5L054DR	T-7F	ORSS-0454.5X1.0NBR70	-	-	-	-
SVER08-10-CHP, 1012/1212**-CHP...	CSTB-2.5L054DL	T-7F	-	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
SVEL08-10-CHP, 1012/1212**-CHP...	CSTB-2.5L054DR	T-7F	-	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
SVER06/08-10..., SVER1010/1212...	CSTB-2.5L054DL	T-7F	-	-	-	-	-
SVEL06/08-10..., SVEL1010/1212...	CSTB-2.5L054DR	T-7F	-	-	-	-	-

INSERT

VGT10 (For threading / sharp edge)





P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	RE (in)	Coated SH725	Pitch (mm)	TPI	PDX (in)	PNA
VGT10F-60A-005	0.002	●	0.4 - 1	64 - 25	0.026	60°
VGT10F-60A-010	0.004	●	1 - 2	25 - 12	0.038	60°
VGT10F-55A-005	0.002	●	0.6 - 1.5	40 - 16	0.033	55°

● : Line up

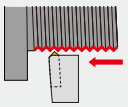
STANDARD CUTTING CONDITIONS

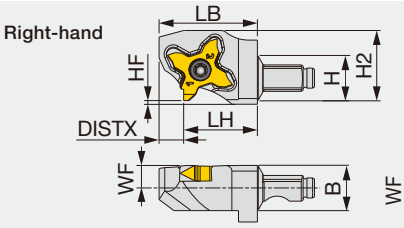
Threading

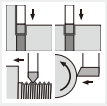
ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Pitch (mm)	TPI
P	Low carbon steels 1015, 1020, etc.	SH725	164 - 492	0.4 - 2	64 - 12
	Carbon steels, Alloy steels 1055, 4140, etc.	SH725	164 - 492	0.4 - 2	64 - 12
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 492	0.4 - 2	64 - 12
M	Stainless steels 304, etc.	SH725	164 - 328	0.4 - 2	64 - 12
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.4 - 2	64 - 12
	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.4 - 2	64 - 12
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.4 - 2	64 - 12
	Superalloys Inconel718, etc.	SH725	98 - 262	0.4 - 2	64 - 12

QC12-STCR/L-Y

Y-axis turning modular head for external grooving and threading





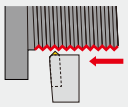


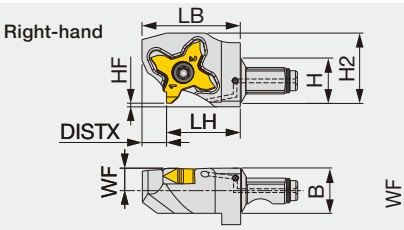
Metric	Pitch	H	B	LH	HF	WF**	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y	0.4 - 3	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6/9 (0.236" / 0.354")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

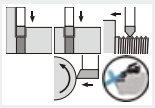
Torque*: Recommended clamping torque: N·m (lbs·ft)
The right hand insert (R) is used for the right hand toolholders (R), and the left hand insert (L) is used for the left hand toolholders (L).

QC12-STCR/L-Y-CHP

Y-axis turning modular head for external grooving and threading, with high pressure coolant capability







Metric	Pitch	H	B	LH	HF	WF	LB	H2	DISTX	Insert	Torque*
QC12-STCR/L18-Y-CHP	0.4 - 3	12 (0.472")	12 (0.472")	19.5 (0.768")	0 (0")	6 (0.236")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

Torque*: Recommended clamping torque: N·m (lbs·ft)
The right hand insert (R) is used for the right hand toolholders (R), and the left hand insert (L) is used for the left hand toolholders (L).
Through-coolant head

SPARE PARTS



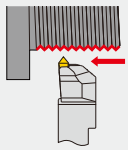


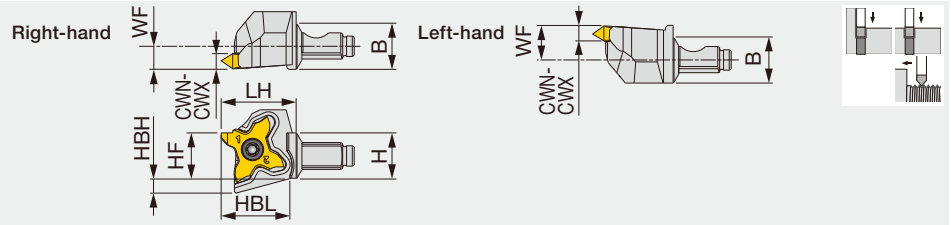
Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-Y	CSTC-4L100DL	T-1008/5	-
QC12-STCL18-Y	CSTC-4L100DR	T-1008/5	-
QC12-STCR18-Y-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-Y-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70

Reference pages: QC12-STCR/L-Y, QC12-STCR/L-Y-CHP: Inserts → G174, G175
Shank, Accessory → G115, G116, Standard cutting conditions → G175

QC12-STCR/L

Modular head for external grooving and threading



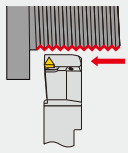


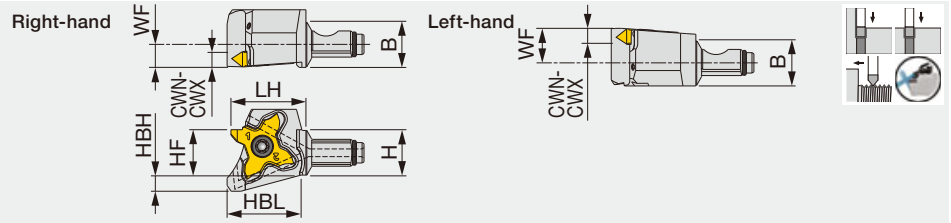
Metric	Pitch	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18	0.4 - 3	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	3.9 (0.154")	17.9 (0.705")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18	0.4 - 3	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	3.9 (0.154")	18.3 (0.720")	9 (0.354")	TC*18L...	1.2 (0.89)

Torque*: Recommended clamping torque: N·m (lbs·ft)
The right hand insert (R) is used for the right hand toolholders (R), and the left hand insert (L) is used for the left hand toolholders (L).

QC12-STCR/L-CHP

Modular head for external grooving and threading, with high pressure coolant capability





Metric	Pitch	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18-CHP	0.4 - 3	12 (0.472")	12 (0.472")	19.5 (0.768")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18-CHP	0.4 - 3	12 (0.472")	12 (0.472")	21 (0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	9 (0.354")	TC*18L...	1.2 (0.89)

Torque*: Recommended clamping torque: N·m (lbs·ft)
Through-coolant head
Note: Use the right-hand insert (TC*18R...) for a right-hand holder (QC12-STCR...); the left-hand insert (TC*18L...) for a left-hand holder (QC12-STCL...).

SPARE PARTS



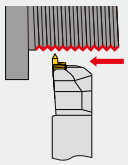


Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCR18	CSTC-4L100DL	T-1008/5	-
QC12-STCL18	CSTC-4L100DR	T-1008/5	-

Reference pages: QC12-STCR/L, QC12-STCR/L-CHP: Inserts → G174, G175
Shank, Accessory → G115, G116, Standard cutting conditions → G175

STCR/L-18

External grooving and threading toolholder



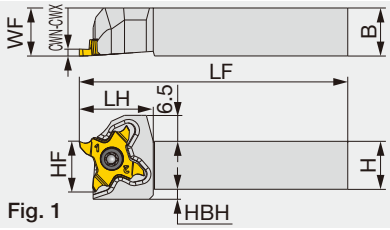


Fig. 1

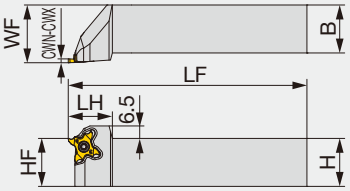
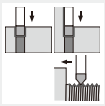


Fig. 2



Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.013	0.118	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.013	0.118	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.013	0.118	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.013	0.118	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.013	0.118	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2

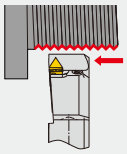
Metric	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*	Fig.
STCR/L1010X18	0.33	3.18	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.33	3.18	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.33	3.18	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.33	3.18	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.33	3.18	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.33	3.18	20	20	120	23	20	25	-	TC*18...	1.2	2

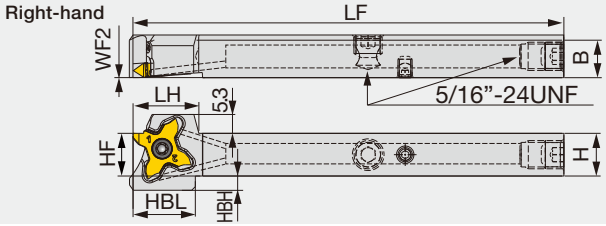
The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert is used for the left hand toolholders
Torque: Recommended clamping torque: lbs·ft (*N·m)

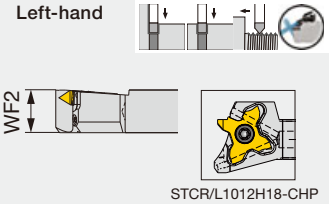
STCR/L-H/X18-CHP

Direct connection

External grooving and threading toolholder, high pressure coolant compatible







STCR/L1012H18-CHP
STCR/L1212*18**B**-CHP

Inch	Pitch (mm)	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque
STCR/L08X18-CHP	0.4 - 3	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR/L10X18-CHP	0.4 - 3	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	TC*18...	0.89

Metric	Pitch	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque*
STCR/L1012H18-CHP	0.4 - 3	10	12	100	17.1	17.1	10	0/12	4	TC**18	1.2
STCR/L1212X18B-CHP	0.4 - 3	12	12	120	18.5	17.5	12	0/12	4	TC**18	1.2
STCR/L1616X18-CHP	0.4 - 3	16	16	120	18.5	-	16	0/16	0	TC**18	1.2

The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
WF2** : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS





Designation	Clamping screw	Wrench
STCFVR**18,STCL**18	CSTC-4L100DR	T-1008/5
STCR**18	CSTC-4L100DL	T-1008/5

Threading pitch range: 0.8 ~ 3 mm

SPARE PARTS













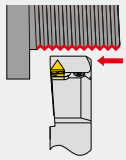
Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR...18	CSTC-4L100DL	T-1008/5	-	-	-	-
STCL...18	CSTC-4L100DR	T-1008/5	-	-	-	-
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

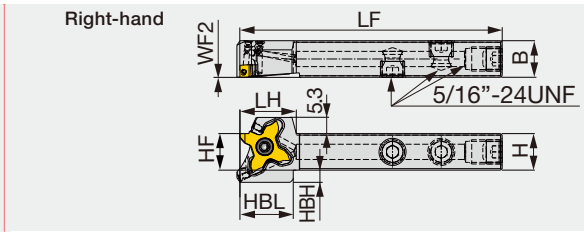
Reference pages : STCR/L-18, STCR/L-H/X18-CHP: Inserts → G174, G175, Standard cutting conditions → G175

STCR/L-F18-CHP

Tube connection

External grooving and threading toolholder. High pressure coolant capability.





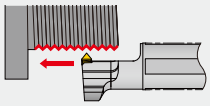
Inch	Pitch (mm)	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque
STCR/L08F18-CHP	0.4 - 3	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89

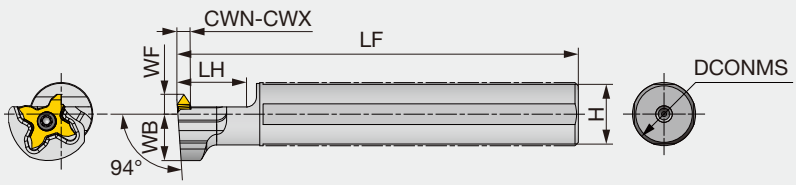
Metric	Pitch	H	B	LF	LH	HBL	HF	WF2**	HBH	Insert	Torque*
STCR/L1212F18B-CHP	0.4 - 3	12	12	85	18.5	17.5	12	0/12	4	TC**18	1.2

The right hand insert (TC*18R***) is used for the right hand toolholders (STCR***), and the left hand insert (TC*18L***) is used for the left hand toolholders (STCL***).
WF2** : The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.
Torque: Recommended clamping torque: lbs·ft (*N·m)

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





Left-hand (L) shown.

Metric	Pitch	DCONMS	H	LF	LH	WB	WF	Insert	Torque*
JS14H-STCL18	0.4 - 3	14	13	100	20	14	6	TC*18R...	1.2
JS159F-STCL18	0.4 - 3	15.875	15	85	20	14	6	TC*18R...	1.2
JS16F-STCL18	0.4 - 3	16	15	85	20	14	6	TC*18R...	1.2
JS19G-STCL18	0.4 - 3	19.05	18	90	20	14	6	TC*18R...	1.2
JS19X-STCL18	0.4 - 3	19.05	18	120	20	14	6	TC*18R...	1.2
JS20G-STCL18	0.4 - 3	20	19	90	20	14	6	TC*18R...	1.2
JS20X-STCL18	0.4 - 3	20	19	120	20	14	6	TC*18R...	1.2
JS22X-STCL18	0.4 - 3	22	21	120	20	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.4 - 3	25	24	100	20	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.4 - 3	25.4	24	120	20	12.25	10	TC*18R...	1.2

- The left hand toolholder (STCL...) is used with the right hand inserts (TC*18R...)
Torque*: Recommended torque (N·m) for clamping

SPARE PARTS



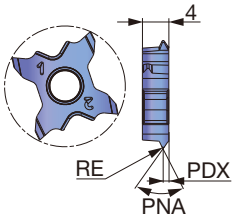



Designation	Clamping screw	Wrench	Coolant plug	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4
STCR**18-CHP	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
JS...STCL18	CSTC-4L100DL	T-1008/5	-	-

Reference pages : STCR/L-F18-CHP, JS-STCL18: Inserts → G174, G175, Standard cutting conditions → G175

TCT18FR/R-ISO (Full profile threading insert)





Right-hand (R) shown.

P	Steel	★ ★
M	Stainless	★ ★
K	Cast iron	★ ★
N	Non-ferrous	
S	Superalloys	★ ★
H	Hard materials	

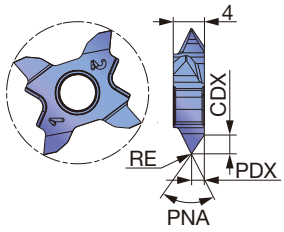
★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated SH725	Coated AH725	Pitch (mm)	PDX (in)	PNA
TCT18FR-05ISO	R	0.002	●		0.5	0.014	60°
TCT18FR-07ISO	R	0.004	●		0.7	0.018	60°
TCT18FR-075ISO	R	0.004	●		0.75	0.020	60°
TCT18FR-08ISO	R	0.004	●		0.8	0.020	60°
TCT18R-10ISO	R	0.005		●	1	0.024	60°
TCT18R-125ISO	R	0.007		●	1.25	0.028	60°
TCT18R-15ISO	R	0.008		●	1.5	0.031	60°

● : Line up

TCT18R/L (for threading)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

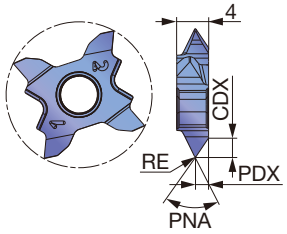
Designation	HAND	RE (in)	Coated AH725	Pitch min (mm)	Pitch max (mm)	PDX (in)	CDX (in)	PNA
TCT18R-60N-010	R	0.004	●	0.8	3	0.063	0.105	60°
TCT18L-60N-010	L	0.004	●	0.8	3	0.063	0.105	60°
TCT18R-60N-020	R	0.008	●	0.8	3	0.063	0.101	60°
TCT18L-60N-020	L	0.008	●	0.8	3	0.063	0.101	60°

● : Line up

Reference pages: Toolholder → G170 - G173

TCT18FR (sharp edge for threading)





Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated SH725	Pitch min (mm)	Pitch max (mm)	PDX (in)	CDX (in)	PNA
TCT18FR-60A-005	R	0.004	●	0.4	1	0.024	0.039	60°
TCT18FR-60A-010	R	0.004	●	1	2	0.039	0.064	60°

● : Line up

STANDARD CUTTING CONDITIONS

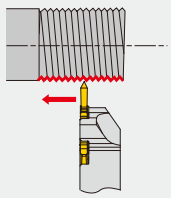
TCT18FR/R-ISO (Full profile threading insert) / TCT18FR (Threading insert)

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Pitch (mm)	TPI
P	Low carbon steel 1015, 1020, etc.	First choice	SH725	197 - 492	0.4 - 2.0	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3.0	32 - 8
	Carbon steels, Alloy steel 1045, 1055 etc.	First choice	SH725	197 - 492	0.4 - 2.0	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3.0	32 - 8
	Prehardened steel NAK80, PX5, etc.	First choice	SH725	197 - 492	0.4 - 2.0	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3.0	32 - 8
M	Stainless steel 304SS, etc	First choice	SH725	164 - 262	0.4 - 2.0	64 - 18
		Toughness	AH725	164 - 262	0.8 - 3.0	32 - 8
K	Gray cast iron Class 25, etc.	First choice	AH725	164 - 328	0.8 - 3.0	32 - 8
		Sharpness	SH725	164 - 328	0.4 - 2.0	64 - 18
	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 328	0.8 - 3.0	32 - 8
		Sharpness	SH725	164 - 328	0.4 - 2.0	64 - 18
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 328	0.4 - 2.0	64 - 18
		Toughness	AH725	98 - 328	0.8 - 3.0	32 - 8
	Superalloys Inconel718, etc.	First choice	SH725	98 - 328	0.4 - 2.0	64 - 18
		Toughness	AH725	98 - 328	0.8 - 3.0	32 - 8

Reference pages: Toolholder → G170 - G173

JSXXR/L

Parting toolholder, for Swiss lathes



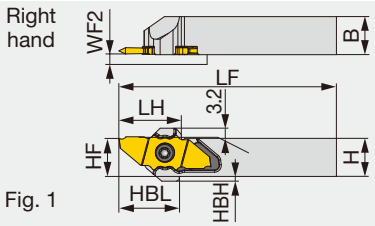


Fig. 1

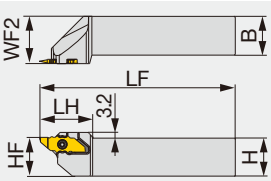
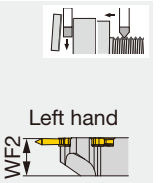


Fig. 2



Right hand (R) shown.

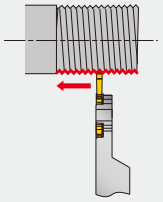
Inch	CWN	CWX	H	B	LF**	LH**	HF	WF2(1)	HBL	HBH	Insert	Torque	Fig.
JSXXR/L063	0.024	0.098	0.375	0.375	4.646	0.774	0.375	0.008 / 0.386	0.748	0.12	JX...	0.89	1
JSXXR/L083	0.024	0.098	0.500	0.500	3.268	0.774	0.500	0.008 / 0.386	0.748	0.06	JX...	0.89	1
JSXXR/L103	0.024	0.098	0.625	0.625	4.646	0.774	0.625	0.008 / 0.386	-	0.06	JX...	0.89	1
JSXXR/L123	0.024	0.098	0.750	0.750	3.950	0.886	0.750	0.008 / 0.742	-	-	JX...	0.89	1
JSXXR/L163	0.024	0.098	1.000	1.000	5.350	1.339	1.000	1.250 / 1.250	-	-	JX...	0.89	2

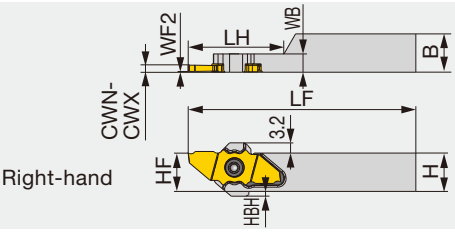
Metric	CWN	CWX	H	B	LF**	LH**	HF	WF2(1)	HBL**	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	0.6	2.5	10	10	120	19.65	10	0.2/9.8	19	3	JX...	1.2	1
JSXXR/L1212F09	0.6	2.5	12	12	85	19.65	12	0.2/11.8	19	1.5	JX...	1.2	1
JSXXR/L1212X09	0.6	2.5	12	12	120	19.65	12	0.2/11.8	19	1.5	JX...	1.2	1
JSXXR/L1616X09	0.6	2.5	16	16	120	19.65	16	0.2/15.8	-	-	JX...	1.2	1
JSXXR/L2020H09	0.6	2.5	20	20	100	22.5	20	0.2/19.8	-	-	JX...	1.2	1

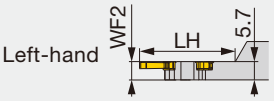
Torque: Recommended clamping torque: lbs·ft (*N·m)
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX*G12... and JXPG20...inserts, and 0.157" (4 mm) shorter for JXPG06... insert.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-S

Parting toolholder, for Swiss lathes (for sub spindle)







Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L063-S	0.024	0.098	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.890
JSXXR/L083-S	0.024	0.098	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF2	HBH	Insert	Torque*
JSXXR/L1010X09-S	0.6	2.5	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...	1.2
JSXXR/L1212F09-S	0.6	2.5	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...	1.2
JSXXR/L1212X09-S	0.6	2.5	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...	1.2
JSXXR/L1616X09-S	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16...,20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**LF (Functional Length) and LH (Head Length) values shown above are true with JXPG16... insert. LF and LH will be 2 mm shorter than the above values with JX*G12... insert, and 0.157" (4 mm) shorter for JXPG06... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter with JXPG20... insert.
***JXPG20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS





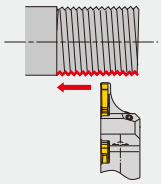
Designation	Clamping screw	Wrench
JSXXR..., JSXXR*****-S	CSTC-4L055DL	T-1008/5
JSXXL..., JSXXL*****-S	CSTC-4L055DR	T-1008/5

Reference pages: JSXXR/L, JSXXR/L-S: Inserts → G178, Standard cutting conditions → G179

JSXXR/L-F/H/X-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes

Direct connection **Tube connection**



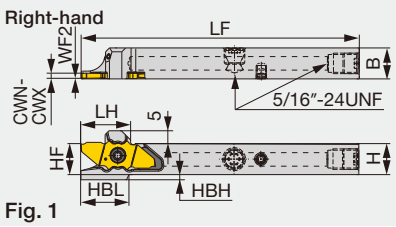


Fig. 1

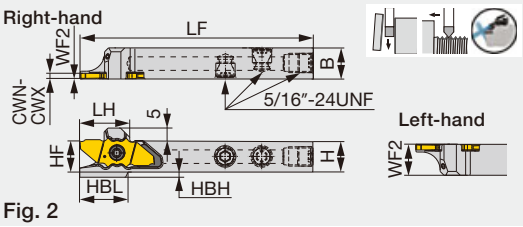


Fig. 2

Inch	CWN	CWX	H	B	WF	LF**	HF	HBH	LH**	HBL**	Insert	Torque	Fig.
JSXXR/L083X-CHP	0.024	0.098	0.500	0.500	0.008/0.492	4.750	0.500	0.051	0.764	0.736	JX*G06...,12...,16..., 20...	0.890	1
JSXXR/L103X-CHP	0.024	0.098	0.625	0.625	0.008/0.617	4.750	0.625	-	0.764	-	JX*G06...,12...,16..., 20...	0.890	1
JSXXR/L083F-CHP	0.024	0.098	0.500	0.500	0.008/0.492	3.344	0.500	0.051	≤ 0.764	0.736	JX*G06...,12...,16..., 20...	0.890	1

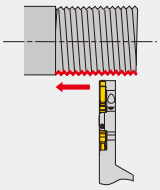
Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(3)	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-CHP(3)	0.6	2.5	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-CHP(3)	0.6	2.5	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 4 mm shorter for JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F/X-S-CHP

Parting-off toolholders with high pressure coolant capability, for swiss lathes (for sub spindle)

Direct connection **Tube connection**



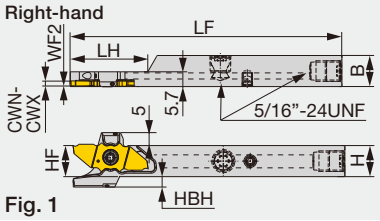


Fig. 1

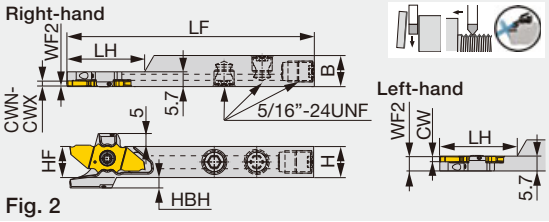


Fig. 2

Inch	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR/L083F-S-CHP	0.024	0.098	0.5	0.5	3.344	1.024	0.5	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	2
JSXXR/L083X-S-CHP	0.024	0.098	0.5	0.5	4.75	1.181	0.5	0.008/0.217	0.051	JX**06...,12...,16..., 20...	0.89	1
JSXXR/L103X-S-CHP	0.024	0.098	0.625	0.625	4.75	1.181	0.625	0.008/0.217	-	JX**06...,12...,16..., 20...	0.89	1

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF2(2)	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP(4)	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-S-CHP(3),(4)	0.6	2.5	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09B-S-CHP(3)	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-S-CHP(3),(4)	0.6	2.5	16	16	120	30	16	0.2	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-S-CHP(3)	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2	1

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 4 mm shorter for JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS



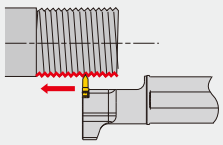


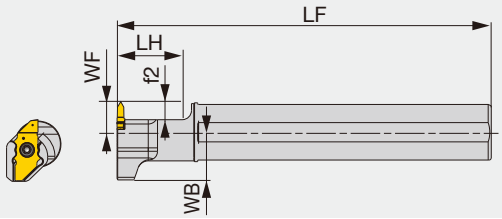



Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**F...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Reference pages: JSXXR/L-F/H/X-CHP, JSXXR/L-F/X-S-CHP:
Inserts → G178, Standard cutting conditions → G179

Round shanks, for threading





Metric	DCONMS	H	B	LF	LH	WB	WF(1)	f2(1)	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX**06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX**06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX**06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX**06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX**06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX**06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX**06,12*R	1.2

Torque*: Recommended clamping torque (N·m)
(1) When using JX..06... insert, both WF and f2 sizes will be 2 mm shorter than the values provided above.

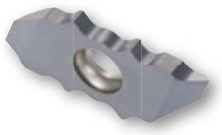
SPARE PARTS

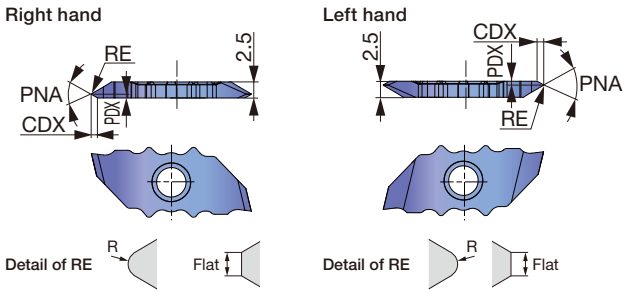



Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L100DL	T-1008/5

INSERT

JXTG12FR/L-60 (For Threading / Sharp edge)





P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice

Designation	HAND	RE (mm)	Coated	Pitches (mm)	PDX (mm)	CDX (mm)	PNA
			SH725				
JXTG12FR-60A-000	R	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	60°
JXTG12FL-60A-000	L	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	60°
JXTG12FR-60B-000	R	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	60°
JXTG12FL-60B-000	L	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	60°
JXTG12FR-60A-005	R	R 0.05	●	0.4 - 1	0.6	0.99	60°
JXTG12FL-60A-005	L	R 0.05	●	0.4 - 1	0.6	0.99	60°
JXTG12FR-60B-005	R	R 0.05	●	0.4 - 1	1.9	0.99	60°
JXTG12FL-60B-005	L	R 0.05	●	0.4 - 1	1.9	0.99	60°
JXTG12FR-60N-010	R	R 0.1	●	1 - 1.5	1.25	2.07	60°
JXTG12FL-60N-010	L	R 0.1	●	1 - 1.5	1.25	2.07	60°

● : Line-up

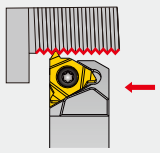
Reference pages: Toolholder → G176 - G178

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)
P	Low carbon steels 1015, etc.	SH725	164 - 656
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656
M	Stainless steels 304, etc.	SH725	164 - 656
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656
	Copper alloy C2600, C280C, etc.	SH725	328 - 656
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262
	Superalloys Inconel718, etc.	SH725	98 - 262

JSE2R16-CHP

Screw-on external threading toolholders-High-pressure coolant capability with tube and direct connection



Tube connection

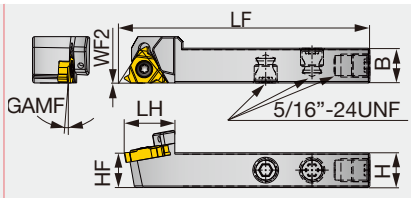


Fig.1

Direct connection

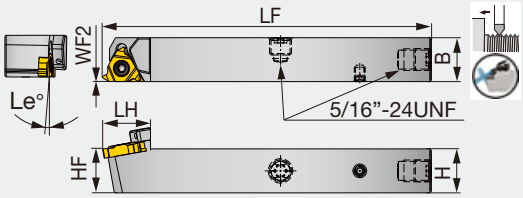


Fig.2

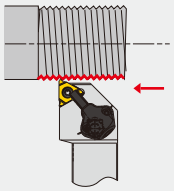
Right hand (R) shown.

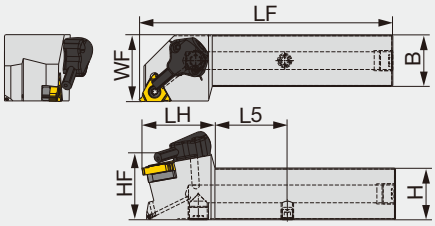
Inch	H	B	LF	LH	HF	WF	GAMF	Insert	Fig.
JSE2R08F16-CHP	0.500	0.500	3.344	0.748	0.500	0.000	1°	16ER...	1
JSE2R08X16-CHP	0.500	0.500	4.750	0.748	0.500	0.000	1°	16ER...	2
JSE2R10X16-CHP	0.625	0.625	4.750	0.748	0.625	0.000	1°	16ER...	2

Metric	H	B	LF	LH	HF	WF2	GAMF	Insert	Fig.
JSE2R1212F16-CHP	12	12	85	19	12	0	1°	16ER...	1
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	16ER...	2
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	16ER...	2

SER-X-CHP-MC

Screw-on external threading toolholders-High-pressure coolant capability with tube and direct connection





Metric	H	B	LF	LH	HF	WF	L5	Insert
SER2020X16-CHP-MC	20	20	107	36	20	25	27.9	16ER...

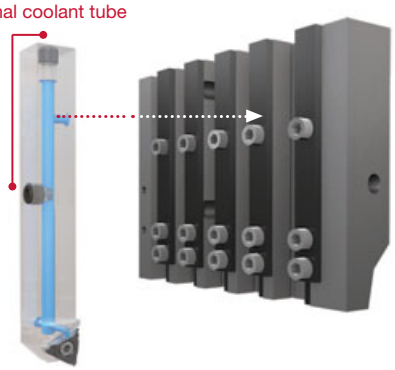
SPARE PARTS

Designation	Clamping screw	Wrench	Shim screw	Shim	Coolant unit	Coolant plug	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F	-	-	-	SR5/16UNFTL360	P-4
SER**X16-CHP-MC	CSTB-3.5ST	T-15F	DTS5-3.5	A16-1DT	CU-V-CHP	PLUGG1/8-6.5TL360	P-3.5

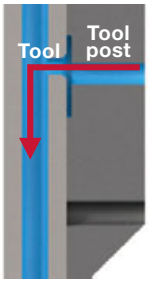
No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant tube



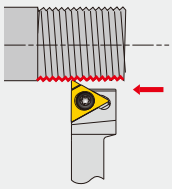
Detailed view of the coolant flow after connection

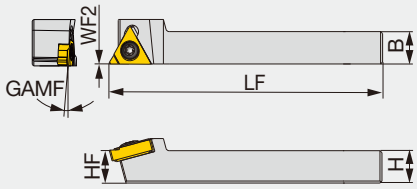


Reference pages: JSE2R16-CHP, SER-X-CHP-MC: Inserts → E010 -, Standard cutting conditions → E068

SER

Screw-on external threading toolholders

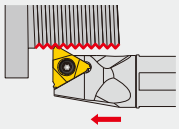


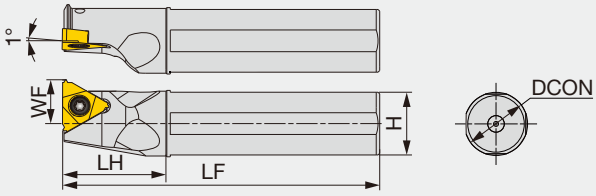


Metric	H	B	LF	HF	WF2	GAMF	Insert
SER0808H11	8	8	100	8	0	1.5°	11ER...
SER1010H11	10	10	100	10	0	1.5°	11ER...

JS-SEL16

External threading toolholder, for Swiss lathes





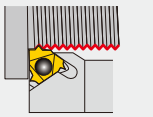
Right hand (R) shown.

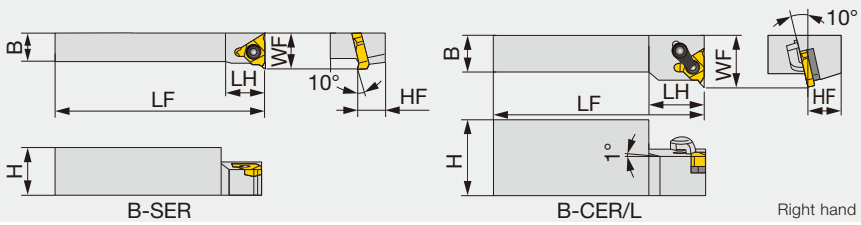
Metric	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25H-SEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Note: Use left-hand toolholders (L) with right-hand inserts (R).

B-S/CER/L

External threading toolholder, for Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

SPARE PARTS





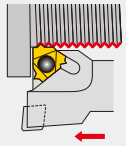
Designation	Clamping screw	Wrench 1
SER**H11	SR M2.6-L6.7-S11	T-8/5
JS***-SEL16, B-SER**16, BC-SER12K16	CSTB-3.5	T-15F

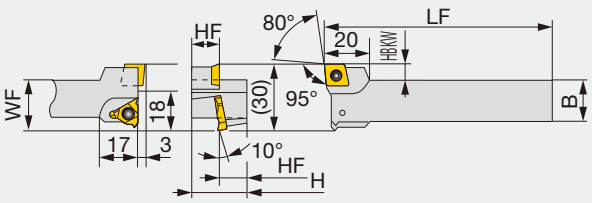
Reference pages: SER, JS-SEL16, B-S/CER/L:
Inserts → E010 -, Standard cutting conditions → E068

TUNGTHREAD

BC-SER/L

External threading toolholder, for multi-functional Swiss lathes





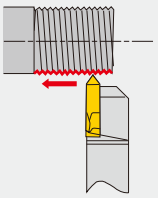
Right hand (R) shown.

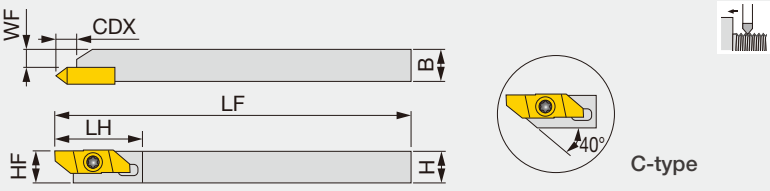
Metric	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

J-SERIES

JSXBR/L

Screw-on external threading toolholder, for Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR/L1010K8-C	10	10	125	29	6.7	10	5.7	JXT*R...
JSXBR/L1212K8-C	12	12	125	29	6.7	12	7.7	JXT*R...
JSXBR/L1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR/L2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR/L2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

Can be wrenched from back side with both end torx screw.
This toolholder is compatible with JXB-type inserts and JXT-type inserts.

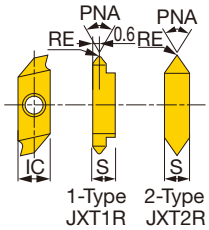
SPARE PARTS

Designation	Clamp set	Shim set	Clamping screw	Wrench	Wrench 2 (Optional)
BC-SER12K16	-	-	CSTB-3.5	T-15F	-
JSXBR...	CSP16	A16-1	CSTB-4SD	T-8F	(T-8L)

INSERT

JXT (sharp edge)





		Coated		Uncoated	
		J740		TH10	
P	Steel	★			
M	Stainless	★			
K	Cast iron				
N	Non-ferrous			☆	
S	Superalloys	☆		☆	
H	Hard materials			☆	

★ : First choice
☆ : Second choice

Designation	RE (mm)	Coated J740	Uncoated TH10	PNA	IC (mm)	S (mm)
JXT1R6000F	0.03	●	●	60°	8	3.97
JXT2R6000F	0.03	●	●	60°	8	3.97

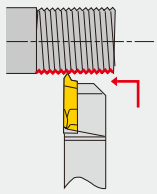
Machinable pitch range: 0.5 to 1 mm

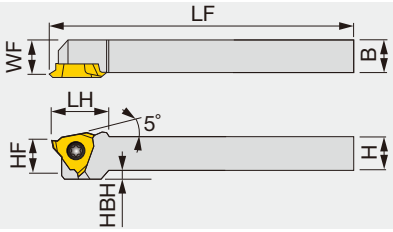
● : Line up

Reference pages: BC-SER/L: Inserts → B112 - (CC*T09T3...), E010 - (16ER...),
Standard cutting conditions → E068

JSTTR/L

Screw-on external threading toolholder, for Swiss lathes





Right hand (R) shown.

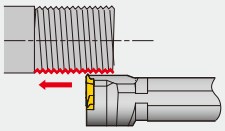
Inch	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L063	0.375	0.375	5.000	0.6875	0.375	0.375	0.100	JTTR/L30...
JSTTR/L083	0.500	0.500	5.000	0.6875	0.500	0.500	-	JTTR/L30...
JSTTR/L103	0.625	0.625	5.000	0.6875	0.625	0.625	-	JTTR/L30...

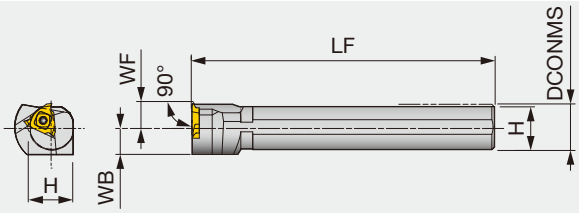
Metric	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L3...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L3...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L3...
JSTTR/L1616X3	16	16	120	18.5	16	15.5	-	JTTR/L3...

Recommended clamping torque: 0.89 lbs·ft, 1.2 N·m

JS-TTL3

Screw-on external threading toolholder, for Swiss lathes





Left hand (L) shown.

Metric	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

SPARE PARTS





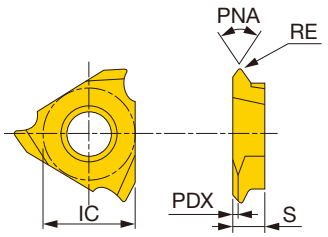
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSTTR/L...	CSTB-4SD	T-8F	(T-8L)
JS**-TTL3	CSTB-4S	T-15F	-

Reference pages: JSTTR/L, JS-TTL3: Inserts, Standard cutting conditions → G184

INSERT

JTT (sharp edge)





Right hand (R) shown.

P	Steel	★	☆			★			★		
M	Stainless	★	☆								
K	Cast iron	★				☆			★		
N	Non-ferrous								★		
S	Superalloys	☆							★		
H	Hard materials	☆							★		

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated			Cermet		Uncoated			PNA	IC (mm)	S (mm)	PDX (mm)
		SH725	J740		NS9530		TH10						
JTTR3005F-55	0.002	●	●							55°	9.525	3.18	0.6
JTTL3005F-55	0.002									55°	9.525	3.18	0.6
JTTR3005F	0.002	●	●		●		●			60°	9.525	3.18	0.9
JTTL3005F	0.002	●								60°	9.525	3.18	0.9
JTTR3010F	0.004	●	●		●		●			60°	9.525	3.18	0.9
JTTL3010F	0.004	●								60°	9.525	3.18	0.9

Machinable pitch range: 0.020" to 0.039" (0.5 to 1 mm)

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	TPI
P	Low carbon steel 1025, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
	Carbon steel, Alloy steel 1045, 4140, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
	Pre-hardened steel NAK80, PX5, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	SH725	164 - 262	0.020 - 0.039	50 - 25
K	Gray cast iron Class 25, Class 30, etc.	TH10	164 - 328	0.020 - 0.039	50 - 25
	Ductile cast iron 60-40-18, etc.	TH10	164 - 328	0.020 - 0.039	50 - 25
S	Titanium alloy Ti-6Al-4V, etc.	SH725	98 - 328	0.020 - 0.039	50 - 25
	Heat resistant alloy Inconel 718, etc.	SH725	98 - 328	0.020 - 0.039	50 - 25

Reference pages: Toolholder → G183

MEMO

Alphanumeric Index

Turning Grooving

Designation	Product name	Page
06IR□□ISO	ISO metric threading insert	E017
06IRA55	55° angle threading insert	E015
06IRA60	60° angle threading insert	E010
08IRA55	55° angle threading insert	E015
08IRA60	60° angle threading insert	E010
10ER/L□□□B	Positive insert for back turning	B162, G080
10ER/L300	Positive insert for back turning	B162, G080
11ER□□ISO	ISO metric threading insert	E017
11ERA55	55° angle threading insert	E015
11ERA60	60° angle threading insert	E010
11IR/L□□ISO	ISO metric threading insert	E017
11IR/LA60	60° angle threading insert	E010
11IR□□ISO-B	ISO metric threading insert	E019
11IR□□ISO-M	ISO metric threading insert	E019
11IR□□PT	BSPT threading insert	E024
11IR□□UN	Unified threading insert	E021
11IR□□W	Whitworth threading insert	E023
11IR10MJ	MJ threading insert	E028
11IRA55	55° angle threading insert	E015
11IRA60-B	60° angle threading insert	E011
11IRA60-M	60° angle threading insert	E011
15GR/L...	Internal grooving insert	F185, G122
16ELA60	60° angle threading insert	E010
16ER/L□□ISO	ISO metric threading insert	E018
16ER/L□□W	Whitworth threading insert	E023
16ER/LG60	60° angle threading insert	E010
16ER□□□ISO	ISO metric threading insert	E018
16ER□□□ISO-B	ISO metric threading insert	E019
16ER□□□ISO-M	ISO metric threading insert	E019
16ER□□ACME	29° Trapezoidal threading insert	E029
16ER□□ISO-B	ISO metric threading insert	E019
16ER□□ISO-M	ISO metric threading insert	E019
16ER□□NPT	NPT threading insert	E025
16ER□□NPT-B	NPT threading insert	E025
16ER□□NPTF	NPTF threading insert	E026
16ER□□NPT-M	NPT threading insert	E025
16ER□□PT	BSPT threading insert	E024
16ER□□PT-B	BSPT threading insert	E024
16ER□□PT-M	BSPT threading insert	E024
16ER□□TR	30° Trapezoidal threading insert	E027
16ER□□UN	Unified threading insert	E021
16ER□□UN-B	Unified threading insert	E022
16ER□□UNJ	UNJ threading insert	E028
16ER□□UN-M	Unified threading insert	E022
16ER□□W-B	Whitworth threading insert	E023
16ER□□W-M	Whitworth threading insert	E023
16ER□RD-B	Round threading insert	E027
16ER□UN	Unified threading insert	E021
16ER□W	Whitworth threading insert	E023
16ER10RAPI	API Round threading insert	E030
16ER10RD-CB	API Round threading insert	E030

Designation	Product name	Page
16ER115NPT	NPT threading insert	E025
16ER115NPT-B	NPT threading insert	E025
16ER115NPTF	NPTF threading insert	E026
16ER115NPT-M	NPT threading insert	E025
16ER8ACME	29° Trapezoidal threading insert	E029
16ER8NPT	NPT threading insert	E025
16ER8NPT-B	NPT threading insert	E025
16ER8NPTF	NPTF threading insert	E026
16ER8RAPI	API Round threading insert	E030
16ER8RD-CB	API Round threading insert	E030
16ER8UN-B	Unified threading insert	E022
16ER8UNJ	UNJ threading insert	E028
16ER8UN-M	Unified threading insert	E022
16ERA55	55° angle threading insert	E015
16ERA60	60° angle threading insert	E010
16ERA60-B	60° angle threading insert	E011
16ERA60-M	60° angle threading insert	E011
16ERAG55	55° angle threading insert	E015
16ERAG55-B	55° angle threading insert	E015
16ERAG60	60° angle threading insert	E010
16ERAG60-B	60° angle threading insert	E011
16ERAG60-M	60° angle threading insert	E011
16ERG55	55° angle threading insert	E015
16ERG55-B	55° angle threading insert	E015
16ERG60-B	60° angle threading insert	E011
16ERG60-M	60° angle threading insert	E011
16IR/L□□ISO	ISO metric threading insert	E018
16IR/LA60	60° angle threading insert	E010
16IR/LG60	60° angle threading insert	E010
16IR□□□ISO-B	ISO metric threading insert	E019
16IR□□□ISO-M	ISO metric threading insert	E019
16IR□□ACME	29° Trapezoidal threading insert	E029
16IR□□ISO-B	ISO metric threading insert	E019
16IR□□ISO-M	ISO metric threading insert	E019
16IR□□NPT	NPT threading insert	E025
16IR□□NPT-M	NPT threading insert	E025
16IR□□PT	BSPT threading insert	E024
16IR□□PT-B	BSPT threading insert	E024
16IR□□PT-M	BSPT threading insert	E024
16IR□□TR	30° Trapezoidal threading insert	E027
16IR□□UN	Unified threading insert	E021
16IR□□UN-B	Unified threading insert	E022
16IR□□UN-M	Unified threading insert	E022
16IR□□W	Whitworth threading insert	E023
16IR□□W-B	Whitworth threading insert	E023
16IR□□W-M	Whitworth threading insert	E023
16IR□UN	Unified threading insert	E021
16IR□W	Whitworth threading insert	E023
16IR10RAPI	API Round threading insert	E030
16IR10RD-CB	API Round threading insert	E030
16IR115NPT	NPT threading insert	E025

Designation	Product name	Page
16IR115NPT-B	NPT threading insert	E025
16IR115NPTF	NPTF threading insert	E026
16IR115NPT-M	NPT threading insert	E025
16IR□□NPT-B	NPT threading insert	E025
16IR14NPTF	NPTF threading insert	E026
16IR6RD-B	Round threading insert	E027
16IR8ACME	29° Trapezoidal threading insert	E029
16IR8NPT	NPT threading insert	E025
16IR8NPT-B	NPT threading insert	E025
16IR8NPTF	NPTF threading insert	E026
16IR8RAPI	API Round threading insert	E030
16IR8RD-CB	API Round threading insert	E030
16IR8UN-B	Unified threading insert	E022
16IR8UN-M	Unified threading insert	E022
16IRA55	55° angle threading insert	E015
16IRA60-B	60° angle threading insert	E011
16IRA60-M	60° angle threading insert	E011
16IRAG55	55° angle threading insert	E015
16IRAG55-B	55° angle threading insert	E015
16IRAG60	60° angle threading insert	E010
16IRAG60-B	60° angle threading insert	E011
16IRAG60-M	60° angle threading insert	E011
16IRG55	55° angle threading insert	E015
16IRG55-B	55° angle threading insert	E015
16IRG60-B	60° angle threading insert	E011
16IRG60-M	60° angle threading insert	E011
1QP-16ER60-□□□-SP	60° angle threading insert	E010
1QP-CCG□□□□□□NS	PCD insert, 80° rhombic, positive	B213
1QP-CCGW...	CBN insert, 80° rhombic, positive	B189
1QP-CCMT...	PCD insert, 80° rhombic, positive	B213
1QP-CNMM...	PCD insert, 80° rhombic, negative	B211
1QP-DCG□□□□□□NS	PCD insert, 55° rhombic, positive	B214
1QP-EPGW...	CBN insert, 75° rhombic, positive	B195
1QP-TCMT...	PCD insert, traiangular, positive	B216
1QP-TNMM...	PCD insert, traiangular, negative	B212
1QP-VBGT□□□□□□NS	PCD insert, 35° rhombic, positive	B221
1QP-VCGT□□□□□□NS	PCD insert, 35° rhombic, positive	B220
22ER/LN60	60° angle threading insert	E010
22ER□□ISO	ISO metric threading insert	E018
22ER□□ISO-B	ISO metric threading insert	E019
22ER□□TR	30° Trapezoidal threading insert	E027
22ER□ACME	29° Trapezoidal threading insert	E029
22ER□UN	Unified threading insert	E021
22ER□W	Whitworth threading insert	E023
22ER5BAPI	API Buttress threading insert	E032
22ERN55	55° angle threading insert	E015
22ERN60-B	60° angle threading insert	E011
22IR/LN60	60° angle threading insert	E010
22IR□□ISO	ISO metric threading insert	E018
22IR□□TR	30° Trapezoidal threading insert	E027
22IR□ACME	29° Trapezoidal threading insert	E029
22IR□UN	Unified threading insert	E021
22IR□W	Whitworth threading insert	E023
22IR5BAPI	API Buttress threading insert	E032
22IR8RAPI-2T	API Round threading insert	E030
22IRN55	55° angle threading insert	E015
22IRN60-B	60° angle threading insert	E011
27ER60ISO	ISO metric threading insert	E018
27ER60TR	30° Trapezoidal threading insert	E027
27ERZ60	60° angle threading insert	E010
27IR60ISO	ISO metric threading insert	E018
27IRZ60	60° angle threading insert	E010
2D-DCMT□□-ZF	AddY-axisTurn insert	C056
2QP-CCGT□□□HP	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGT□□□HS	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGT□□□WL-HP	CBN insert, 80° rhombic, positive	B191
2QP-CCGT□□□WL-HS	CBN insert, 80° rhombic, positive	B191
2QP-CCGW□□□...	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGW□□□-L	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGW□□□-LC	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGW□□□-LF	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGW□□□SR	CBN insert, 80° rhombic, positive	B190, B191
2QP-CCGW□□□FW	CBN insert, 80° rhombic, positive	B191
2QP-CCMW□□□...	CBN insert, 80° rhombic, positive	B190, B191
2QP-CNGA□□□..	CBN insert, 80° rhombic, negative	B168, B169
2QP-CNGA□□□-E	CBN insert, 80° rhombic, negative	B168
2QP-CNGA□□□F	CBN insert, 80° rhombic, negative	B168

Designation	Product name	Page
2QP-CNGA□□□-H	CBN insert, 80° rhombic, negative	B169
2QP-CNGA□□□HC	CBN insert, 80° rhombic, negative	B169
2QP-CNGA□□□-L	CBN insert, 80° rhombic, negative	B168
2QP-CNGA□□□-LC	CBN insert, 80° rhombic, negative	B168, B169
2QP-CNGA□□□-LF	CBN insert, 80° rhombic, negative	B168
2QP-CNGA□□□-LT	CBN insert, 80° rhombic, negative	B168
2QP-CNGA□□□SR	CBN insert, 80° rhombic, negative	B168, B169
2QP-CNGA□□□FW	CBN insert, 80° rhombic, negative	B168
2QP-CNGM□□□-HF	CBN insert, 80° rhombic, negative	B170
2QP-CNGM□□□-HM	CBN insert, 80° rhombic, negative	B170
2QP-CNGM□□□-HP	CBN insert, 80° rhombic, negative	B170
2QP-CNGM□□□-HS	CBN insert, 80° rhombic, negative	B170
2QP-CNGM□□□FW-HP	CBN insert, 80° rhombic, negative	B170
2QP-CNGM□□□FW-HS	CBN insert, 80° rhombic, negative	B170
2QP-CNMA□□□W	CBN insert, 80° rhombic, negative	B168
2QP-CPGW□□□...	CBN insert, 80° rhombic, positive	B192
2QP-DCGT□□□-HP	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGT□□□-HS	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□...	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□-L	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□-LC	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□-LF	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□SR	CBN insert, 55° rhombic, positive	B193, B194
2QP-DCGW□□□-E	CBN insert, 55° rhombic, positive	B194
2QP-DCGW□□□F	CBN insert, 55° rhombic, positive	B194
2QP-DCGW□□□-H	CBN insert, 55° rhombic, positive	B194
2QP-DCGW□□□HC	CBN insert, 55° rhombic, positive	B194
2QP-DCGW□□□-LT	CBN insert, 55° rhombic, positive	B194
2QP-DCMW□□□...	CBN insert, 55° rhombic, positive	B193, B194
2QP-DNGA□□□...	CBN insert, 55° rhombic, negative	B172, B173, B175
2QP-DNGA□□□-E	CBN insert, 55° rhombic, negative	B172
2QP-DNGA□□□-H	CBN insert, 55° rhombic, negative	B173, B175
2QP-DNGA□□□HC	CBN insert, 55° rhombic, negative	B173, B175
2QP-DNGA□□□-L	CBN insert, 55° rhombic, negative	B172, B175
2QP-DNGA□□□-LC	CBN insert, 55° rhombic, negative	B172, B173, B175
2QP-DNGA□□□-LF	CBN insert, 55° rhombic, negative	B172, B175
2QP-DNGA□□□-LT	CBN insert, 55° rhombic, negative	B172
2QP-DNGA□□□SR	CBN insert, 55° rhombic, negative	B172, B173, B175
2QP-DNGA□□□WJ	CBN insert, 55° rhombic, negative	B172
2QP-DNGM□□□-HF	CBN insert, 55° rhombic, negative	B174
2QP-DNGM□□□-HM	CBN insert, 55° rhombic, negative	B174
2QP-DNGM□□□-HP	CBN insert, 55° rhombic, negative	B174, B175
2QP-DNGM□□□-HS	CBN insert, 55° rhombic, negative	B174, B175
2QP-FNGA□□□...	CBN insert, 45° rhombic, negative	B176, B177
2QP-FNGA□□□-H	CBN insert, 45° rhombic, negative	B176, B177
2QP-FNGA□□□-L	CBN insert, 45° rhombic, negative	B176, B177
2QP-FNGA□□□-LC	CBN insert, 45° rhombic, negative	B176, B177
2QP-FNGA□□□-LF	CBN insert, 45° rhombic, negative	B176, B177
2QP-FNGG□□□-HP	CBN insert, 45° rhombic, negative	B176, B177
2QP-GNGA□□□...	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□-H	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□-HC	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□-L	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□-LC	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□-LF	CBN insert, 70° rhombic, negative	B178
2QP-GNGA□□□SR	CBN insert, 70° rhombic, negative	B178
2QP-GNGG□□□-HP	CBN insert, 70° rhombic, negative	B178
2QP-GNGG□□□-HS	CBN insert, 70° rhombic, negative	B178
2QP-SNGA□□□...	CBN insert, square, negative	B180
2QP-SNGA□□□-H	CBN insert, square, negative	B180
2QP-SNGA□□□-L	CBN insert, square, negative	B180
2QP-SNGA□□□-LF	CBN insert, square, negative	B180
2QP-SNGA□□□SR	CBN insert, square, negative	B180
2QP-SPGN□□□...	CBN insert, square, positive	B196
2QP-SPGW□□□..	CBN insert, square, positive	B195, B196
2QP-SPMN□□□...	CBN insert, square, positive	B196
2QP-VBGT□□□-HP	CBN insert, 35° rhombic, positive	B208, B209
2QP-VBGT□□□-HS	CBN insert, 35° rhombic, positive	B208, B209
2QP-VBGW□□□...	CBN insert, 35° rhombic, positive	B207, B208
2QP-VBGW□□□-L	CBN insert, 35° rhombic, positive	B207, B208
2QP-VBGW□□□-LC	CBN insert, 35° rhombic, positive	B207, B208
2QP-VBGW□□□-LF	CBN insert, 35° rhombic, positive	B207, B208
2QP-VBGW□□□SR	CBN insert, 35° rhombic, positive	B207, B208
2QP-VBGW□□□-H	CBN insert, 35° rhombic, positive	B208

Alphanumeric Index

Designation	Product name	Page
2QP-VBGW□□□HC	CBN insert, 35° rhombic, positive	B208
2QP-VBMW□□□...	CBN insert, 35° rhombic, positive	B208
2QP-VCGW□□□...	CBN insert, 35° rhombic, positive	B209
2QP-VCGW□□□-E	CBN insert, 35° rhombic, positive	B209
2QP-VCGW□□□-H	CBN insert, 35° rhombic, positive	B209
2QP-VCGW□□□-LT	CBN insert, 35° rhombic, positive	B209
2QP-VNGA□□□...	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□-H	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□HC	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□-L	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□-LC	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□-LF	CBN insert, 35° rhombic, negative	B186
2QP-VNGA□□□SR	CBN insert, 35° rhombic, negative	B186
2QP-VNGM□□□-HP	CBN insert, 35° rhombic, negative	B187
2QP-VNGM□□□-HS	CBN insert, 35° rhombic, negative	B187
2QP-VNGM□□□-HF	CBN insert, 35° rhombic, negative	B187
2QP-VNGM□□□-HM	CBN insert, 35° rhombic, negative	B187
2QP-YNGA□□□...	25° rhombic, negative insert	B188
2QP-YNGA□□□-L	25° rhombic, negative insert	B188
2QP-YNGA□□□-LC	25° rhombic, negative insert	B188
2QP-YNGA□□□-LF	25° rhombic, negative insert	B188
2QP-YNGG□□□-HP	25° rhombic, negative insert	B188
30S□□□□□R/L	My-T Series face grooving and turning adapter	F238, F239
3C-TCMT□□□□□□-TM	AddMultiTurn, AddY-axisTurn insert	C100, C101
3QP-TCGW□□□...	CBN insert, traiangular, positive	B197, B198
3QP-TNGA□□□...	CBN insert, traiangular, negative	B182, B183
3QP-TNGA□□□F	CBN insert, traiangular, negative	B182
3QP-TNGA□□□-H	CBN insert, traiangular, negative	B183
3QP-TNGA□□□HC	CBN insert, traiangular, negative	B183
3QP-TNGA□□□-L	CBN insert, traiangular, negative	B182
3QP-TNGA□□□-LC	CBN insert, traiangular, negative	B182, B183
3QP-TNGA□□□-LF	CBN insert, traiangular, negative	B182
3QP-TNGA□□□SR	CBN insert, traiangular, negative	B182, B183
3QP-TNGA□□□WG	CBN insert, traiangular, negative	B182
3QP-TNGA□□□-E	CBN insert, traiangular, negative	B182
3QP-TNGA□□□-LT	CBN insert, traiangular, negative	B182
3QP-TNGM□□□-HF	CBN insert, traiangular, negative	B184
3QP-TNGM□□□-HM	CBN insert, traiangular, negative	B184
3QP-TNGM□□□-HP	CBN insert, traiangular, negative	B184
3QP-TNGM□□□-HS	CBN insert, traiangular, negative	B184
3QP-TPGN□□□...	CBN insert, traiangular, positive	B202, B203
3QP-TPGT□□□-HP	CBN insert, traiangular, positive	B200
3QP-TPGT□□□-HS	CBN insert, traiangular, positive	B200
3QP-TPGW□□□...	CBN insert, traiangular, positive	B198, B199, B200, B201, B202
3QP-TPGW□□□F	CBN insert, traiangular, positive	B200
3QP-TPGW□□□-H	CBN insert, traiangular, positive	B200, B202
3QP-TPGW□□□HC	CBN insert, traiangular, positive	B200
3QP-TPGW□□□-L	CBN insert, traiangular, positive	B200
3QP-TPGW□□□-LC	CBN insert, traiangular, positive	B200
3QP-TPGW□□□-LF	CBN insert, traiangular, positive	B200
3QP-TPGW□□□SR	CBN insert, traiangular, positive	B200
3QP-TPMN□□□...	CBN insert, traiangular, positive	B202, B203
3QP-TPMW□□□...	CBN insert, traiangular, positive	B198, B199, B200, B201, B202
3QP-WNGA□□□...	CBN insert, 80° hexagonal, negative	B187
3QP-WNGA□□□-H	CBN insert, 80° hexagonal, negative	B187
3QP-WNGA□□□-L	CBN insert, 80° hexagonal, negative	B187
3QP-WNGA□□□-LF	CBN insert, 80° hexagonal, negative	B187
3QP-WNGA□□□FW	CBN insert, 80° hexagonal, negative	B187
40D□□□□□R/L	My-T Series face grooving and turning adapter	F238, F239
40S □□□□□R/L	My-T Series face grooving and turning adapter	F238, F239
4QP-CNGA□□□...	CBN insert, 80° rhombic, negative	B168, B169
4QP-CNGA□□□-H	CBN insert, 80° rhombic, negative	B169
4QP-CNGG□□□-HF	CBN insert, 80° rhombic, negative	B170
4QP-CNGG□□□-HM	CBN insert, 80° rhombic, negative	B170
4QP-CNMA□□□W	CBN insert, 80° rhombic, negative	B168
4QP-DNGA□□□...	CBN insert, 55° rhombic, negative	B172
4QP-DNGA□□□-H	CBN insert, 55° rhombic, negative	B173
4QP-DNGG□□□-HF	CBN insert, 55° rhombic, negative	B174
4QP-DNGG□□□-HM	CBN insert, 55° rhombic, negative	B174
4QP-SNGA□□□...	CBN insert, square, negative	B180
4QP-SNGA□□□-H	CBN insert, square, negative	B180
4QP-VNGA□□□...	CBN insert, 35° rhombic, negative	B186
4QP-VNGA□□□-H	CBN insert, 35° rhombic, negative	B186
4QP-VNGG□□□-HF	CBN insert, 35° rhombic, negative	B187
4QP-VNGG□□□-HM	CBN insert, 35° rhombic, negative	B187
4QS-CNGA□□□□...	CBN insert, 80° rhombic, negative	B168, B169
4QS-CNGA□□□-H	CBN insert, 80° rhombic, negative	B169
4QS-CNGA□□□HC	CBN insert, 80° rhombic, negative	B169
4QS-CNGA□□□-LC	CBN insert, 80° rhombic, negative	B168, B169
4QS-CNGA□□□-LF	CBN insert, 80° rhombic, negative	B168
4QS-CNGA□□□SR	CBN insert, 80° rhombic, negative	B168, B169
4QS-CNGA□□□FW	CBN insert, 80° rhombic, negative	B168
4QS-CNGG□□□-HF	CBN insert, 80° rhombic, negative	B170
4QS-CNGG□□□-HM	CBN insert, 80° rhombic, negative	B170
4QS-CNGG□□□-HP	CBN insert, 80° rhombic, negative	B170
4QS-CNGG□□□-HS	CBN insert, 80° rhombic, negative	B170
4QS-CNGG□□□FW-HP	CBN insert, 80° rhombic, negative	B170
4QS-DNGA□□□...	CBN insert, 55° rhombic, negative	B172, B173
4QS-DNGA□□□-H	CBN insert, 55° rhombic, negative	B173
4QS-DNGA□□□HC	CBN insert, 55° rhombic, negative	B173
4QS-DNGA□□□-LC	CBN insert, 55° rhombic, negative	B172, B173
4QS-DNGA□□□-LF	CBN insert, 55° rhombic, negative	B172
4QS-DNGA□□□SR	CBN insert, 55° rhombic, negative	B172, B173
4QS-DNGG□□□-HF	CBN insert, 55° rhombic, negative	B174
4QS-DNGG□□□-HM	CBN insert, 55° rhombic, negative	B174
4QS-DNGG□□□-HP	CBN insert, 55° rhombic, negative	B174
4QS-DNGG□□□-HS	CBN insert, 55° rhombic, negative	B174
4QS-SNGA□□□...	CBN insert, square, negative	B180
4QS-SNGA□□□SR	CBN insert, square, negative	B180
4QS-VNGA□□□...	CBN insert, 35° rhombic, negative	B186
4QS-VNGA□□□-H	CBN insert, 35° rhombic, negative	B186
4QS-VNGA□□□HC	CBN insert, 35° rhombic, negative	B186
4QS-VNGA□□□-LC	CBN insert, 35° rhombic, negative	B186
4QS-VNGA□□□-LF	CBN insert, 35° rhombic, negative	B186
4QS-VNGA□□□SR	CBN insert, 35° rhombic, negative	B186
4QS-VNGG□□□-HP	CBN insert, 35° rhombic, negative	B187
4QS-VNGG□□□-HS	CBN insert, 35° rhombic, negative	B187
4QS-VNGG□-HM	CBN insert, 35° rhombic, negative	B187
50D□□□□□R/L	My-T Series face grooving and turning adapter	F238, F239
50S□□□□□R/L	My-T Series face grooving and turning adapter	F238, F239
6GR/L...	Internal grooving insert	F185, G122
6C-TOMG□□□□□□M-TM	AddMultiTurn insert	C102
6GMR100-015	Internal grooving INSERT	F184, G121
6IR□□ISO	ISO metric threading insert	E017
6IR18NPT	NPT threading insert	E025
6IR19PT	BSPT threading insert	E024
6IR19W	Whitworth threading insert	E023
6IRA55	55° angle threading insert	E015
6IRA60	60° angle threading insert	E010
6QP-TNGA□□□...	CBN insert, traiangular, negative	B182, B183
6QP-TNGA□□□-H	CBN insert, traiangular, negative	B183
6QP-TNGG□□□-HF	CBN insert, traiangular, negative	B184
6QP-TNGG□□□-HM	CBN insert, traiangular, negative	B184
6QP-WNGA□□□...	CBN insert, 80° hexagonal, negative	B187
6QS-TNGA□□□...	CBN insert, traiangular, negative	B182, B183
6QS-TNGA□□□-H	CBN insert, traiangular, negative	B183
6QS-TNGA□□□HC	CBN insert, traiangular, negative	B183
6QS-TNGA□□□-LC	CBN insert, traiangular, negative	B182, B183
6QS-TNGA□□□-LF	CBN insert, traiangular, negative	B182
6QS-TNGA□□□SR	CBN insert, traiangular, negative	B182, B183
6QS-TNGG□□□-HF	CBN insert, traiangular, negative	B184
6QS-TNGG□□□-HP	CBN insert, traiangular, negative	B184
6QS-TNGG□□□-HS	CBN insert, traiangular, negative	B184
6QS-TNGG□□□-HM	CBN insert, traiangular, negative	B184
6QS-WNGA□□□...	CBN insert, 80° hexagonal, negative	B187
6QS-WNGA□□□-H	CBN insert, 80° hexagonal, negative	B187
6QS-WNGA□□□-LF	CBN insert, 80° hexagonal, negative	B187
6QS-WNGA□□□FW	CBN insert, 80° hexagonal, negative	B187
6QS-WXGQ□□□SPR/L	MiniForce-Turn insert, 80° trigon, positive, double-sided	B210
6QS-WXGU□□□R/L-HP	MiniForce-Turn insert, 80° trigon, positive, double-sided	B210
6V-TOMG□□□□□□F-TSF	AddMultiTurn insert	C102
7GR/L...	Internal grooving insert	F185, G122
7GMR...	Internal grooving insert	F184, G121
8GR/L...	Internal grooving insert	F185, G122
8GMR...	Internal grooving insert	F184, G121
9GR/L...	Internal grooving insert	F185, G122
9GMR...	Internal grooving insert	F184, G121

Designation	Product name	Page
A		
A/E□□□-SNGR□□-D...	Internal grooving toolholder	F182, G119
A/E□□□-STCIR/L□□-D...	AddInternalCut internal grooving toolholder	F134, G117
A□□□-ACLNR/L□-...	TurningA boring bar, steel shank	D031
A□□□-ADUNR/L□-...	TurningA boring bar, steel shank	D045
A□□□-ASKNR/L□-...	TurningA boring bar, steel shank	D055
A□□□-ATFNR/L□-...	TurningA boring bar, steel shank	D065
A□□□-AVUNR/L□-...	TurningA boring bar, steel shank	D078
A□□□-AWLNR/L□□-...	TurningA boring bar, steel shank	D085
A□□□-PCLNR/L□□-...	StreamJet-Bar boring bar, steel shank	D027
A□□□-PDUNR/L...	StreamJet-Bar boring bar, steel shank	D042
A□□□-PDZNR/L15-...	StreamJet-Bar boring bar, steel shank	D046
A□□□-PSKNR/L12-...	StreamJet-Bar boring bar, steel shank	D054
A□□□-PTFNR/L1104-...	ISO-EcoTurn boring bar, steel shank	D063
A□□□-PTFNR/L16-...	StreamJet-Bar boring bar, steel shank	D063
A□□□-PTUNR/L□□-...	StreamJet-Bar boring bar, steel shank	D066
A□□□-PTUNR/L1104-...	ISO-EcoTurn boring bar, steel shank	D066
A□□□-PVUNR/L...	ISO-EcoTurn boring bar, steel shank	D077
A□□□-PWLNR/L□□-...	StreamJet-Bar boring bar, steel shank	D083
A□□□-PWLNR/L0604-...	ISO-EcoTurn boring bar, steel shank	D083
A□□□-SCLCR/L□□-...	StreamJet-Bar boring bar, steel shank	D018
A□□□-SCLPR/L□□-...	StreamJet-Bar boring bar, steel shank	D022
A□□□-SCLXR/L□□-...	MiniForce-Turn boring bar, steel shank	D025
A□□□-SDQCR/L□□-...	StreamJet-Bar boring bar, steel shank	D035
A□□□-SDQPR/L07-...	StreamJet-Bar boring bar, special alloy steel	D039
A□□□-SDUCR/L...	StreamJet-Bar boring bar, steel shank	D032
A□□□-SDUPR/L07-...	StreamJet-Bar boring bar, special alloy steel	D038
A□□□-SDXXR/L...	MiniForce-Turn boring bar, steel shank	D040
A□□□-SDZCR/L...	StreamJet-Bar boring bar, steel shank	D037
A□□□-SDZXR/L...	MiniForce-Turn boring bar, steel shank	D041
A□□□-SEXPR/L□□-...	StreamJet-Bar boring bar, steel shank	D048
A□□□-SEZPR/L03-...	StreamJet-Bar boring bar, steel shank	D049
A□□□-SSKPR□□-...	StreamJet-Bar boring bar, steel shank	D052
A□□□-STFCR/L...	StreamJet-Bar boring bar, steel shank	D056
A□□□-STFPR/L...	StreamJet-Bar boring bar, steel shank	D057
A□□□-STUPR/L...	StreamJet-Bar boring bar, steel shank	D060
A□□□-SVJBR/L...	StreamJet-Bar boring bar, steel shank	D070
A□□□-SVJCR/L...	StreamJet-Bar boring bar, steel shank	D075
A□□□-SVQBR/L□□-...	StreamJet-Bar boring bar, steel shank	D069
A□□□-SVQCR/L□□-...	StreamJet-Bar boring bar, steel shank	D074
A□□□-SVUBR/L□□-...	StreamJet-Bar boring bar, steel shank	D068
A□□□-SVUCR/L□□-...	StreamJet-Bar boring bar, steel shank	D072
A□□□-SVZBR/L□□-...	StreamJet-Bar boring bar, steel shank	D071
A□□□-SVZCR/L...	StreamJet-Bar boring bar, steel shank	D076
A□□□-SWLXR/L□□-...	MiniForce-Turn boring bar, steel shank	D081
A□□□-SWUBR/L03-...	StreamJet-Bar boring bar, steel shank	D080
A□□□-SXUOR/L□□-D...	TungBoreMini boring bar, steel shank	D086
A□□□-SYQBR/L...	Y-Pro Series boring bar, steel shank	D089
A□□□-SYUBR/L...	Y-Pro Series boring bar, steel shank	D088
A□□-FLER/L...	TungT-Clamp internal grooving and threading toolholder	E065, F167
A□□M-FLER/L3	TungT-Clamp internal grooving and threading toolholder	E065, F167
A070□□-SEXPR...	TinyMini-Turn Indexable boring bar	G133
A07055-SEZPR03-3	TinyMini-Turn Indexable boring bar	G133
A32S-PTUNR/L16	Boring bar, steel shank	D067
ACLNR/L□□□□X-□□-CHP-MC	TungCap external toolholder with high pressure coolant nozzle	C024
ACLNR/L...	ISO-EcoTurn / TurningA external toolholder	D019
ADJNR/L...	ISO-EcoTurn/TurningA toolholder	C036
ADJNR/L□□□□-CHP-MC	TungCap external toolholder with high pressure coolant nozzle	C040
ADPNN...	TurningA external toolholder	C049
ADQNR/L...	ISO-EcoTurn/TurningA toolholder	C045
ARGNR/L□□□□-A	TurningA external toolholder	C065
ASBNR/L...	TurningA external toolholder	C085
ASDNN...	TurningA external toolholder	C076
ASKNR/L...	TurningA external toolholder	C082
ASSNR/L...	TurningA external toolholder	C078
ATFNR/L...	TurningA external toolholder	C094
ATGNR/L...	TurningA external toolholder	C091
ATJNR/L...	TurningA external toolholder	C088
ATQNR/L...	TurningA external toolholder	C096
ATXOR/L...	AddMultiTurn external toolholder	C102
AVC-SET...	BoreMeiser center height set up device	D092, E060,
AVJNR/L...	ISO-EcoTurn/TurningA external toolholder	C103
AVQNR/L...	ISO-EcoTurn/TurningA external toolholder	C110
AVVNN...	ISO-EcoTurn/TurningA external toolholder	C107
AWLNR/L□□□□X-08-CHP-MC	TungCap external toolholder with high pressure coolant nozzle	C125
AWLNR/L...	ISO-EcoTurn/TurningA external toolholder	C121
B		
B-CER/L□□□16	External threading toolholder for Swiss lathes	E039, F105,
BC-SER12K16	External threading toolholder for Swiss lathes	E040, G182
BLC□□-...	Sleeve for boring bar	D095
BLM□□□-...	Sleeve for boring bar	D093, D095
BLM□□-...	Sleeve for boring bar	D093, D095
BLS16-□□C	Sleeve for boring bar	D094
BLS16-...	Sleeve for boring bar	D094
B-SER□□□16	External threading toolholder for Swiss lathes	E039, G181
C		
C□□□-CTFPR/L...	Boring bar, carbide shank	D058
C□ACLNN...	TungCap TurningA external toolholder	C020
C□ACLNR/L...	TungCap TurningA external toolholder	C020
C□ADJNR/L...	TungCap TurningA external toolholder	C036
C□ADNNN...	TungCap TurningA external toolholder	C043
C□ADQNR/L...	TungCap TurningA external toolholder	C046
C□ADUNR/L...	TungCap TurningA external toolholder	C051
C□AVJNR/L...	TungCap TurningA external toolholder	C104
C□AWLNR/L...	TungCap TurningA external toolholder	C122
C□CER/L□□□□□-16ER	TungCap external threading toolholder	E036
C□CER/L□□□□□-16ERN	TungCap external threading toolholder	E036
C□CHFVN□□□□□-CHP	Toolholder with TungCap connection for perpendicularly-mounted adapter, with high pressure coolant	F026, F051, F065, F202, F228
C□CHFVR/L□□□□□N	TungCut toolholder with TungCap connection for adapter, perpendicularly mounted	F029, F205
C□CHSN□□□□□-CHP	Toolholder with TungCap connection for adapter, with high pressure coolant	F026, F051, F065, F202, F228
C□CHSR/L□□□□□N	TungCut toolholder with TungCap connection for adapter	F029, F205
C□PCLNR/L...	TungCap external toolholder	C021
C□PCLNR/L...CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C026
C□PDJNR/L□□□□□-1104-CHP	TungCap external/profiling toolholder with highpressure coolant nozzle	C041
C□PDJNR/L□□□□□-15-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C041
C□PDJNR/L...	TungCap TurningA external toolholder	C040
C□PVJNR/L□□□□□-1204-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C106
C□PVJNR/L□□□□□-16-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C106
C□PWLNR/L□□□□□-0604-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	C126
C□PWLNR/L□□□□□-08-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	C126
C□-SH-D□□-...	Tool adapter with PSC connection	F137
C□-SH-D□□-5D-E-CHP	BoreMeister PSC compatible adapter with carbide core	E059, F137
C□STCFL□□□□□-18-CHP	TetraMini-Cut external grooving toolholder for high pressure coolant	F052
C□STCR/L□□□□□-18-CHP	External grooving and threading toolholder with high pressure coolant capability	E043, F052
C□SVJCR/L...	TungCap external toolholder	C114
C□SVVCN...	TungCap external toolholder	C114
C3CEL18065-16ERB-CHP	TungCap external threading toolholder	E037
C3CEL22040-16ERN-B	TungCap external threading toolholder	E037
C3PTUNL□□□□□-16-CHP	TungCap external toolholder with high pressure coolant nozzle	C097
C3SCLCL180□□-09-CHP	TungCap external toolholder with high pressure coolant nozzle	C035
C3SDJCR/L22040-11-CHP	TungCap external toolholder with high pressure coolant nozzle	C053
C3SDUCL□□□□□-11-CHP	TungCap external toolholder with high pressure coolant nozzle	C055
C3STCFL18□□□-18-CHP	External grooving and threading toolholder with high pressure coolant capability	E043, F052
C3SVUCL18065-11-CHP	TungCap external toolholder with high pressure coolant nozzle	C118

Alphanumeric Index

Designation	Product name	Page
C4ATJNR/L...	TungCap external toolholder	C089
C4AVQNR/L27050-16N	TungCap TurningA external toolholder	C110
C4PTJNR/L27050-1104N	TungCap external toolholder	C090
C4-SH-D□□-2.5D-CHP	BoreMeister PSC compatible adapter with steel core	D091, E059, F137
C4-SH-D40-3D-CHP	BoreMeister PSC compatible adapter with steel core	D092, E059
C4STCR/L27050-27-CHP	TetraForce-Cut external grooving toolholder for high pressure coolant	F066
C6ACMNN...	TungCap TurningA external toolholder	C032
C6-D□□-L□□□-9D-C	BoreMeister PSC adapter with anti vibration, L/D = 9	D090, E060, F137
C6PCLNL17100-12-CHP	TungCap internal toolholder with high pressure coolant nozzle	D028
C6PCMNN00130-12-CHP	TungCap lever-lock external/facing toolholder with high pressure coolant nozzle	C033
C6PDMNL00130-1104-CHP	TungCap lever-lock external/facing toolholder with high pressure coolant nozzle	C048
C6PDUNL17100-1104-CHP	TungCap lever-lock external/facing toolholder with high pressure coolant nozzle	D044
C6SDNCN00125-13-Y-CHP	AddY-axisTurn Y-axis turning toolholder	C056
C6-SH-D□□-5D-E-CHP	BoreMeister PSC compatible adapter with carbide core	D091
C6STECN00125-29-Y-CHP	AddY-axisTurn Y-axis turning toolholder	C101
C6TBK-32R/L	Toolholder with TungCap connection for parting-off blade	F249, F255
CAEFR/L-□T04-CHP	TungCut external and face grooving adapter for high pressure coolant	F023, F199
CAER/L-□T...	TungCut external grooving and turning adapter	F027
CAER/L-□T□□-CHP	TungCut external grooving and parting adapter for high pressure coolant	F023
CAER/L-□T□□-MD	TungCut external grooving and parting adapter	F023
CAFR/L-□T□□-...	TungCut face grooving and turning adapter	F203
CAFR/L-□T□□-□□□□□□-CHP	TungCut face grooving and turning adapter for high pressure coolant	F199
CCBS□□-32	My-T Series tool block for CCH blade	F276, F280
CCGT...	80° rhombic, positive, ISO insert	B116
CCGT□□-01	80° rhombic, positive, ISO insert	B112
CCGT□□-AL	80° rhombic, positive, ISO insert	B116
CCGT□□F-01	80° rhombic, positive, ISO insert	B112
CCGT□□F-JS	80° rhombic, positive, ISO insert	B112
CCGT□□FN-JP	80° rhombic, positive, ISO insert	B112
CCGT□□FN-JS	80° rhombic, positive, ISO insert	B112
CCGT□□FR/L-J10	80° rhombic, positive, ISO insert	B113
CCGT□□FR/L-W08	80° rhombic, positive, ISO insert	B114
CCGT□□-JS	80° rhombic, positive, ISO insert	B112
CCGT□□N-JS	80° rhombic, positive, ISO insert	B112
CCGT□□R/L	80° rhombic, positive, ISO insert	B116
CCGT□□R/L-W08	80° rhombic, positive, ISO insert	B114
CCGT□□R/L-W15	80° rhombic, positive, ISO insert	B114
CCGT□□R/L-W20	80° rhombic, positive, ISO insert	B115
CCGW...	80° rhombic, positive, ISO insert	B117
CCGW0602□□-DIA	PCD insert, 80° rhombic, positive	B213
CCGW09T3□□-DIA	PCD insert, 80° rhombic, positive	B213
CCH32-...	My-T Seires external grooving and parting blade	F280
CCH32-W...	My-T Series external grooving and parting blade	F276
CCLNR/L...	DimpleFX external toolholder	C027
CCMT□□-23	80° rhombic, positive, ISO insert	B116
CCMT□□-24	80° rhombic, positive, ISO insert	B117
CCMT□□-CM	80° rhombic, positive, ISO insert	B115
CCMT□□-PF	80° rhombic, positive, ISO insert	B113
CCMT□□-PM	80° rhombic, positive, ISO insert	B117
CCMT□□-PS	80° rhombic, positive, ISO insert	B115
CCMT□□-PSF	80° rhombic, positive, ISO insert	B113
CCMT□□-PSS	80° rhombic, positive, ISO insert	B115
CCMT□□-SW	80° rhombic, positive, ISO insert	B116
CCMT□□-TM	80° rhombic, positive, ISO insert	B115
CCMT□□-TSF	80° rhombic, positive, ISO insert	B113
CCMT0602□□-DIA	PCD insert, 80° rhombic, positive	B213
CCMT09T3□□-DIA	PCD insert, 80° rhombic, positive	B213
CCMW...	80° rhombic, positive, ISO insert	B116
CDJNR/L...	DimpleFX external/profiling toolholder	C042
CDNNN2525M1507-RD	DimpleFX external toolholder	C044
CER/L□□□□□□□DT	External threading toolholder	E036, F105
CER□□□□□□□T	External threading toolholder	E036, F105

Designation	Product name	Page
CGD...	My-T Series grooving insert	F113
CGER/L□□□□-□T...	TungCut external deep grooving and parting tolholder	F022, F151
CGEUR/L□□□□-□T...	TungCut 45° external undercutting toolholder	F286
CGIUR/L□□-□T□□-D□□□	TungCut 45° internal undercutting toolholder	F287
CGIUR/L□□-□T□□-D□□□-15A	TungCut toolholder for aluminium wheel profiling	F287
CGP□□-□D	TungCut external deep grooving and parting blade	F254, G152
CGP□□-□S	TungCut external deep grooving and parting blade	F254, G152
CGP32-□D-CHP	TungCut external deep grooving and parting blade for high pressure coolant	F256
CGP32-8S-CL	TungCut external deep grooving and parting blade	F254, G152
CGSSR/L□□□□-...	My-T Series monoblock toolholder for external grooving and parting	F083
CGSSR/L□□□□-□□D	My-T Series monoblock toolholder for external deep grooving and parting	F083
CGWSR/L...	My-T Series toolholder for adapter	F085, F240
CGWSR/L□□□□-□□GR/L	My-T Series adapter set for external grooving and parting	F081
CGWSR/L□□□□-CGDR/L...	My-T Series external grooving and parting toolholder	F132
CGWSR/L□□□□-FLR/L□GP	My-T Series external grooving toolholder	F129
CGWSR/L□□□□-FLR/L5TP	My-T Series face grooving and turning	F247
CGWSR/L□□□□-W...	My-T Series monoblock toolholder for external grooving and parting	F079
CGWSR/L□□□□-W□□GR/L	My-T Series adapter set for external grooving and parting	F080
CGWSR/L□□□□-W□□GR/L-L	My-T Series adapter set for external deep grooving and parting	F080
CGWSR/L□□□□-W□□-L	My-T Series monoblock toolholder for external deep grooving and parting	F079
CGWSR□□□□-8	My-T Series external grooving and parting toolholder	F132
CGWTR/L...	My-T Series toolholder for adapter	F085, F240
CGWTR/L□□□□-□□GL/R	My-T Series adapter set for external grooving and parting	F082
CGWTR/L0040-FLL/R3NP	Internal grooving and turning toolholder	F189
CGXR/L...	Internal grooving toolholder	F186
CGXR/L16SC	Internal grooving toolholder	F186
CHFVR/L...	TungCut shank for adapter, perpendicularly mounted	F028, F204
CHFVR/L□□□□-CHP	Shank for perpendicularly-mounted adapter for high pressure coolant	F025, F050, F064, F201, F227
CHGP□□-□T	TungCut parting-off and external grooving blade	F259, G152
CHGP...	TungCut external deep grooving and parting adaptor	F259, G152
CHP-CONECTOR...	Connedtor	C133
CHP-COPPER-SEAL...	Seal washer	C133, F290
CHP-ELBOW-90-□□-□□UNF	Connector elbow	C133, F290
CHP-HOSE-□□□□-...	TungTurn-Jet connecting hose	C133, F290
CHP-NIPPLE-G1/8-7/16UNF	Connedtor	C133, F290
CHSNR2525M0507-RD	DimpleFX external toolholder	C059
CHSR/L...	TungCut shank for adapter	F028, F204
CHSR/L□□□□-CHP	Shank for adapter for high pressure coolant	F024, F049, F063, F200, F226
CHSR/L□□□□-CHP-MC	Shank for adapter for high pressure coolant	F024, F049, F063, F200, F226
CHTBR/L□□□□-...	Tool block for QSG, CHGP blades	F251, F260, G165
CHTBR/L2020-...	AddForceCut toolblock for QSG blade	F251, F260, G165
CLVOR-□□M...	External threading toolholder for chaser	E053
CLVOR-□□□	External threading toolholder for chaser	E053
CNGA...	80° rhombic, negative, ISO insert	B064
CNGA-10R-3E	API Round chaser insert	E031
CNGA1204□□-DIA	PCD insert, 80° rhombic, negative	B211
CNGA1204□□-QBN	CBN insert, 80° rhombic, negative	B171
CNGA-5B75-3E	API Round chaser insert	E033
CNGA-8R-3E	API Round chaser insert	E031
CNGD...	80° rhombic, negative, ISO insert	B065

Designation	Product name	Page
CNGG□□-28	80° rhombic, negative, ISO insert	B061
CNGG□□-01	80° rhombic, negative, ISO insert	B056
CNGG□□R/L-C	80° rhombic, negative, ISO insert	B056
CNGG□□R/L-P	80° rhombic, negative, ISO insert	B060
CNGN...	80° rhombic, negative, ISO insert	B065
CNGN12□□-E/T1	80° rhombic, negative, ISO insert	B065, C028
CNGR/L□□□15	Internal grooving toolholder	F183, F120
CNMA...	80° rhombic, negative, ISO insert	B063
CNMA□□W	80° rhombic, negative, ISO insert	B064
CNMG...	80° rhombic, negative, ISO insert	B058
CNMG□□-11	80° rhombic, negative, ISO insert	B056
CNMG□□-17	80° rhombic, negative, ISO insert	B056
CNMG□□-27	80° rhombic, negative, ISO insert	B056
CNMG□□-28	80° rhombic, negative, ISO insert	B061
CNMG□□-33	80° rhombic, negative, ISO insert	B061
CNMG□□-37	80° rhombic, negative, ISO insert	B061
CNMG□□-38	80° rhombic, negative, ISO insert	B061
CNMG□□-AFW	80° rhombic, negative, ISO insert	B056
CNMG□□-AM	80° rhombic, negative, ISO insert	B058
CNMG□□-AS	80° rhombic, negative, ISO insert	B054
CNMG□□-ASW	80° rhombic, negative, ISO insert	B060
CNMG□□-CB	80° rhombic, negative, ISO insert	B056
CNMG□□-CF	80° rhombic, negative, ISO insert	B054
CNMG□□-CH	80° rhombic, negative, ISO insert	B062
CNMG□□-CM	80° rhombic, negative, ISO insert	B059
CNMG□□-DM	80° rhombic, negative, ISO insert	B058
CNMG□□E-FW	80° rhombic, negative, ISO insert	B056
CNMG□□E-SM	80° rhombic, negative, ISO insert	B059
CNMG□□E-SS	80° rhombic, negative, ISO insert	B054
CNMG□□E-SW	80° rhombic, negative, ISO insert	B059
CNMG□□E-TF	80° rhombic, negative, ISO insert	B054
CNMG□□E-TM	80° rhombic, negative, ISO insert	B057
CNMG□□E-TSF	80° rhombic, negative, ISO insert	B054
CNMG□□E-ZF	80° rhombic, negative, ISO insert	B054
CNMG□□E-ZM	80° rhombic, negative, ISO insert	B057
CNMG□□-FW	80° rhombic, negative, ISO insert	B056
CNMG□□-HMM	80° rhombic, negative, ISO insert	B060
CNMG□□-HRF	80° rhombic, negative, ISO insert	B054
CNMG□□-HRM	80° rhombic, negative, ISO insert	B059
CNMG□□-NM	80° rhombic, negative, ISO insert	B058
CNMG□□-NS	80° rhombic, negative, ISO insert	B054
CNMG□□-PM	80° rhombic, negative, ISO insert	B057
CNMG□□-PS	80° rhombic, negative, ISO insert	B054
CNMG□□R/L-S	80° rhombic, negative, ISO insert	B060
CNMG□□-SA	80° rhombic, negative, ISO insert	B060
CNMG□□-SDM	80° rhombic, negative, ISO insert	B059
CNMG□□-SF	80° rhombic, negative, ISO insert	B054
CNMG□□-SH	80° rhombic, negative, ISO insert	B062
CNMG□□-SM	80° rhombic, negative, ISO insert	B059
CNMG□□-SS	80° rhombic, negative, ISO insert	B054
CNMG□□-SW	80° rhombic, negative, ISO insert	B059
CNMG□□-TA	80° rhombic, negative, ISO insert	B060
CNMG□□-TF	80° rhombic, negative, ISO insert	B054
CNMG□□-TH	80° rhombic, negative, ISO insert	B061
CNMG□□-THS	80° rhombic, negative, ISO insert	B062
CNMG□□-TM	80° rhombic, negative, ISO insert	B057
CNMG□□-TQ	80° rhombic, negative, ISO insert	B060
CNMG□□-TS	80° rhombic, negative, ISO insert	B054
CNMG□□-TSF	80° rhombic, negative, ISO insert	B054
CNMG□□-ZF	80° rhombic, negative, ISO insert	B054
CNMG□□-ZM	80° rhombic, negative, ISO insert	B057
CNMM□□-57	80° rhombic, negative, ISO insert	B062
CNMM□□-65	80° rhombic, negative, ISO insert	B062
CNMM□□-TRS	80° rhombic, negative, ISO insert	B062
CNMM□□-TU	80° rhombic, negative, ISO insert	B063
CNMM□□-TUS	80° rhombic, negative, ISO insert	B063
CNMM1204□□-DIA	PCD insert, 80° rhombic, negative	B211
CNMN...	80° rhombic, negative, ISO insert	B065
CNR/L...	Internal grooving and threading toolholder	E056
CNR/L□□□□□16	Internal grooving and threading toolholder	E056, F177
CPGA0902□□-DIA	PCD insert, 80° rhombic, positive	B213
CPGA0902□□-QBN	CBN insert, 80° rhombic, positive	B192
CPGT□□R/L-W15	80° rhombic, positive, ISO insert	B118
CPGT□□R/L-W20	80° rhombic, positive, ISO insert	B118
CPMT□□-24	80° rhombic, positive, ISO insert	B120
CPMT□□-CM	80° rhombic, positive, ISO insert	B119
CPMT□□-PF	80° rhombic, positive, ISO insert	B118

Designation	Product name	Page
CPMT□□-PM	80° rhombic, positive, ISO insert	B120
CPMT□□-PS	80° rhombic, positive, ISO insert	B119
CPMT□□-PSF	80° rhombic, positive, ISO insert	B118
CPMT□□-PSS	80° rhombic, positive, ISO insert	B118
CPMT□□-TM	80° rhombic, positive, ISO insert	B119
CPMT□□-TSF	80° rhombic, positive, ISO insert	B118
CPMT120408	80° rhombic, positive, ISO insert	B119
CPMW...	80° rhombic, positive, ISO insert	B120
CR-10R-3E	Chaser insert, API Round	E031
CR-10R-3I	Chaser insert, API Round	E031
CR-11.5NPT-4E	Chaser insert, NPT	E026
CR-11.5NPT-4I	Chaser insert, NPT	E026
CR-5B75-2I-W24	Chaser insert, API Buttress	E034
CR-5B75-3E #...	Chaser insert, API Buttress	E034
CR-5B75-3I	Chaser insert, API Buttress	E033
CR-5B75-4E	Chaser insert, API Buttress	E033
CR-8NPT-4E	Chaser insert, NPT	E026
CR-8NPT-4I	Chaser insert, NPT	E026
CR-8R-3E	Chaser insert, API Round	E031
CR-8R-3E #...	Chaser insert, API Round	E032
CR-8R-3I	Chaser insert, API Round	E031
CSSNR/L2525M1207-RD	DimpleFX external toolholder	C081
CTBF□□-45	TungCut tool block for CGP blade	F254
CTBU□□-...	Tool block for QSP, CGP blades	F193, F249, F255, G153, G164
CTBU□□-□□□-□-CHP	EasyMulti-Cut tool block with high pressure coolant nozzle	F193
CTBU...	TungCut toolblock for CGP blade	G153, G164
CTBU25-32-CHP	Tool block for CGP-CHP blade for high pressure coolant	F256, G153
CTD...	Grooving insert	F131
CTEFR/L□□□□-□T04	TungCut external face grooving toolholder	F019, F198
CTER/L□□□□-□T...	TungCut external grooving and parting tool-holder	F286
CTER/L□□□□-□T□□-CHP	TungCut external grooving toolholder for high pressure coolant	F018
CTER/L□□□□-6T□□-15A	TungCut toolholder for aluminium wheel profiling	F286
CTFR/L2525-□T□□-...	TungCut face grooving and turning toolholder	F196
CTFVR/L2525-□T□□-...	TungCut toolholder for face grooving and turning, perpendicular	F197
CTIFR/L□□-□T05-D...	TungCut face grooving toolholder	F206
CTIR/L□□-□T□□-D...	TungCut internal grooving toolholder	F140
CTWR/L□□□□-...	External grooving and parting toolholder	F131
CVVNN...	DimpleFX external toolholder	C109
CXMU□□R/L-TS	80° rhombic, positive, ISO insert	B120
D		
D□□-L□□□-□□D-C	Anti-vibration bars with through coolant for interchangeable turning heads	E057, F137
D□□-L□□□-...	BoreMeister anti-vibration bar	E057
D□□-L□□□-10D-C	BoreMeister anti-vibration bars with through coolant	E057
D□□-L□□□-4D-SH	BoreMeister steel shank for internal turning, with through coolant	D091, E058, F137
D□□-L□□□-7D-C	BoreMeister anti-vibration bars with through coolant	E057
DCET□□MFN-JSP	55° rhombic, positive, ISO insert	B123
DCET□□MFR/L-JPP	55° rhombic, positive, ISO insert	B123
DCET□□MFR/L-JRP	55° rhombic, positive, ISO insert	B123
DCGT...	55° rhombic, positive, ISO insert	B124
DCGT□□-01	55° rhombic, positive, ISO insert	B121
DCGT□□-AL	55° rhombic, positive, ISO insert	B124
DCGT□□F-01	55° rhombic, positive, ISO insert	B121
DCGT□□FN-JP	55° rhombic, positive, ISO insert	B121
DCGT□□FN-JS	55° rhombic, positive, ISO insert	B121
DCGT□□FR/L-J10	55° rhombic, positive, ISO insert	B122
DCGT□□N-JS	55° rhombic, positive, ISO insert	B121
DCGT□□R/L	55° rhombic, positive, ISO insert	B124
DCGT□□R/L-W10	55° rhombic, positive, ISO insert	B122
DCGT□□R/L-W15	55° rhombic, positive, ISO insert	B122
DCGT□□R-J10	55° rhombic, positive, ISO insert	B122
DCGW...	55° rhombic, positive, ISO insert	B125
DCGW0702□□-DIA	PCD insert, 55° rhombic, positive	B214
DCGW11T3□□-DIA	PCD insert, 55° rhombic, positive	B214
DCLNR/L...	D-type external toolholder	C021
DCMT□□-23	55° rhombic, positive, ISO insert	B125

Alphanumeric Index

Designation	Product name	Page
DCMT□□-23	55° rhombic, positive, ISO insert	B125
DCMT□□-24	55° rhombic, positive, ISO insert	B125
DCMT□□-CM	55° rhombic, positive, ISO insert	B124
DCMT□□-PF	55° rhombic, positive, ISO insert	B122
DCMT□□-PM	55° rhombic, positive, ISO insert	B125
DCMT□□-PS	55° rhombic, positive, ISO insert	B124
DCMT□□-PSF	55° rhombic, positive, ISO insert	B121
DCMT□□-PSS	55° rhombic, positive, ISO insert	B124
DCMT□□-TM	55° rhombic, positive, ISO insert	B124
DCMT□□-TSF	55° rhombic, positive, ISO insert	B122
DCMT0702□□-DIA	PCD insert, 55° rhombic, positive	B214
DCMT11T3□□-DIA	PCD insert, 55° rhombic, positive	B214
DCMW...	55° rhombic, positive, ISO insert	B125
DDJNR/L...	D-type external toolholder	C037
DDQNR/L...	D-type external toolholder	C046
DGE□□□-...	TungCut grooving insert	F038, G160
DGG□□□-...	TungCut grooving insert	F038, F155, F217, F268, G160
DGIM2-020	TungCut grooving insert	F147
DGIS2-020	TungCut grooving insert	F148
DGL□-...	TungCut grooving insert	F037, F154, F218, F268, G161
DGM□-...	TungCut grooving insert	F034, F150, F214, F264, G157
DGM□-□□□-□R/L	TungCut grooving insert	F034, F150, F214, F264, G157
DGS□-...	TungCut grooving insert	F036, F152, F216, F266, G156
DGS□-□□□-□R/L	TungCut grooving insert	F036, F152, F216, F266, G156
DNGA...	55° rhombic, negative, ISO insert	B074
DNGA1504□□-DIA	PCD insert, 55° rhombic, negative	B211
DNGA1504□□-QBN	CBN insert, 55° rhombic, negative	B174
DNGD...	55° rhombic, negative, ISO insert	B074
DNGG□□-01	55° rhombic, negative, ISO insert	B068
DNGG□□R/L	55° rhombic, negative, ISO insert	B072
DNGG□□R/L-P	55° rhombic, negative, ISO insert	B072
DNGN...	55° rhombic, negative, ISO insert	B074
DNMA...	55° rhombic, negative, ISO insert	B073
DNMG...	55° rhombic, negative, ISO insert	B070
DNMG□□-11	55° rhombic, negative, ISO insert	B068
DNMG□□-17	55° rhombic, negative, ISO insert	B068
DNMG□□-27	55° rhombic, negative, ISO insert	B072
DNMG□□-28	55° rhombic, negative, ISO insert	B072
DNMG□□-33	55° rhombic, negative, ISO insert	B072
DNMG□□-37	55° rhombic, negative, ISO insert	B072
DNMG□□-38	55° rhombic, negative, ISO insert	B072
DNMG□□-AM	55° rhombic, negative, ISO insert	B069
DNMG□□-AS	55° rhombic, negative, ISO insert	B066
DNMG□□-CB	55° rhombic, negative, ISO insert	B068
DNMG□□-CF	55° rhombic, negative, ISO insert	B068
DNMG□□-CH	55° rhombic, negative, ISO insert	B073
DNMG□□-CM	55° rhombic, negative, ISO insert	B071
DNMG□□-DM	55° rhombic, negative, ISO insert	B070
DNMG□□E-FW	55° rhombic, negative, ISO insert	B068
DNMG□□E-SM	55° rhombic, negative, ISO insert	B070
DNMG□□E-SS	55° rhombic, negative, ISO insert	B067
DNMG□□E-SW	55° rhombic, negative, ISO insert	B071
DNMG□□E-TF	55° rhombic, negative, ISO insert	B066
DNMG□□E-TM	55° rhombic, negative, ISO insert	B069
DNMG□□E-TSF	55° rhombic, negative, ISO insert	B066
DNMG□□E-ZF	55° rhombic, negative, ISO insert	B066
DNMG□□E-ZM	55° rhombic, negative, ISO insert	B069
DNMG□□-FW	55° rhombic, negative, ISO insert	B068
DNMG□□-HMM	55° rhombic, negative, ISO insert	B071
DNMG□□-HRF	55° rhombic, negative, ISO insert	B067
DNMG□□-HRM	55° rhombic, negative, ISO insert	B070
DNMG□□R/L-S	55° rhombic, negative, ISO insert	B072
DNMG□□-NM	55° rhombic, negative, ISO insert	B070
DNMG□□-NS	55° rhombic, negative, ISO insert	B066
DNMG□□-PM	55° rhombic, negative, ISO insert	B069
DNMG□□-PS	55° rhombic, negative, ISO insert	B066
DNMG□□-SA	55° rhombic, negative, ISO insert	B071
DNMG□□-SDM	55° rhombic, negative, ISO insert	B070
DNMG□□-SF	55° rhombic, negative, ISO insert	B067
DNMG□□-SH	55° rhombic, negative, ISO insert	B073
DNMG□□-SM	55° rhombic, negative, ISO insert	B070
DNMG□□-SS	55° rhombic, negative, ISO insert	B067
DNMG□□-SW	55° rhombic, negative, ISO insert	B071
DNMG□□-TF	55° rhombic, negative, ISO insert	B061
DNMG□□-TH	55° rhombic, negative, ISO insert	B073
DNMG□□-THS	55° rhombic, negative, ISO insert	B073
DNMG□□-TM	55° rhombic, negative, ISO insert	B069
DNMG□□-TQ	55° rhombic, negative, ISO insert	B071
DNMG□□-TS	55° rhombic, negative, ISO insert	B067
DNMG□□-TSF	55° rhombic, negative, ISO insert	B066
DNMG□□-ZF	55° rhombic, negative, ISO insert	B066
DNMG□□-ZM	55° rhombic, negative, ISO insert	B069
DNMM□□-57	55° rhombic, negative, ISO insert	B073
DNMM1504□□-DIA	PCD insert, 55° rhombic, negative	B211
DPMT□□-PS	55° rhombic, positive, ISO insert	B126
DRGNR/L2525M12	D-type external toolholder	C066
DSBNR/L...	D-type external toolholder	C086
DSDNN...	D-type external toolholder	C076
DSKNR/L...	D-type external toolholder	C082
DSSNR/L...	D-type external toolholder	C079
DTA□□□-...	TungCut grooving insert	F043, F158, F220
DTE□-...	TungCut grooving insert	F040, F155, F213, F270
DTE□□□-...	TungCut grooving insert	F039, F154, F212, F269
DTF□-040-R/L	TungCut grooving insert	F211
DTFNR/L...	D-type external toolholder	C094
DTGNR/L...	D-type external toolholder	C092
DTI□□□-...	TungCut grooving insert	F148
DTI□-040	TungCut grooving insert	F149
DTIU□□□-...	TungCut grooving insert	F042, F157, F220, F288
DTM□-...	TungCut grooving insert	F039, F149, F212, F269
DTR□-...	TungCut grooving insert	F041, F156, F219
DTR□□□-...	TungCut grooving insert	F041, F156, F218
DTX□-...	TungCut grooving insert	F040, F147, F211, F270
DWLNR/L...	TungTurn external / facing toolholder	C122
DXGU□□MFR/LE-JRP	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□MFR/L-JS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
DXGU□□MFR/L-JSS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126, B127
DXGU□□MFR/L-JTS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□MR/L-JSS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
DXGU□□MR/L-JTS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
DXGU□□R/L-SS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
DXGU□□R/L-TS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
DXMU□□R/L-TS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B127
E		
E□□□-SCLCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D018
E□□□-SCLPR/L□□-...	StreamJet-Bar boring bar, carbide shank	D022
E□□□-SCLXR/L□□-...	MiniForce-Turn boring bar, carbide shank	D025
E□□□-SDQCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D035
E□□□-SDQPR/L07-...	StreamJet-Bar boring bar, carbide shank	D039
E□□□-SDUPR/L07-...	StreamJet-Bar boring bar, carbide shank	D038
E□□□-SDXXR/L07-...	MiniForce-Turn boring bar, carbide shank	D040
E□□□-SDZCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D037
E□□□-SDZXR/L07-...	MiniForce-Turn boring bar, carbide shank	D041
E□□□-SEXPR/L□□-...	StreamJet-Bar boring bar, carbide shank	D048

Designation	Product name	Page
E□□□-SEZPR/L03-...	StreamJet-Bar boring bar, carbide shank	D049
E□□□-SNGR□□-D...	Internal grooving toolholder	G119
E□□□-STCIR/L□□-D...	AddInternalCut Internal grooving toolholder	G117
E□□□-STFCR/L1103-...	StreamJet-Bar boring bar, carbide shank	D056
E□□□-STFPR/L...	StreamJet-Bar boring bar, carbide shank	D057
E□□□-STUPR/L...	StreamJet-Bar boring bar, carbide shank	D060
E□□□-SVQBR/L□□-...	StreamJet-Bar boring bar, carbide shank	D069
E□□□-SVQCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D074
E□□□-SVUBR/L□□-...	StreamJet-Bar boring bar, carbide shank	D068
E□□□-SVUCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D072
E□□□-SWLXR/L□□-...	MiniForce-Turn boring bar, carbide shank	D081
E□□□-SWUBR/L03-...	StreamJet-Bar boring bar, carbide shank	D080
E□□□-SXUOR/L□□-D...	TungBoreMini boring bar, carbide shank	D086
E□□□-SYQBR/L11-...	Y-Pro Series boring bar, carbide shank	D089
E□□□-SYUBR/L11-...	Y-Pro Series boring bar, carbide shank	D088
E070□□-SEXPR...	TinyMini-Turn Indexable boring bar	G133
E07055-SEZPR03-5	TinyMini-Turn Indexable boring bar	G133
EFPR/L-□-...	EasyMulti-Cut face grooving blade	F192
EGM4-030	EasyMulti-Cut grooving insert	F195
EPGT□□F-JS	75° rhombic, positive, ISO insert	B128
EPGT□□FL-J08	75° rhombic, positive, ISO insert	B128
EPGT□□FR/L-W08	75° rhombic, positive, ISO insert	B129
EPGT□□-JS	75° rhombic, positive, ISO insert	B128
EPGT□□L-J08	75° rhombic, positive, ISO insert	B128
EPGT□□R/L-W08	75° rhombic, positive, ISO insert	B129
EPGW0401□-DIA	PCD insert, 75° rhombic, positive	B214
ETFR/L□□□□-□T□□-...	EasyMulti-Cut face grooving and turning toolholder	F190
ETFR□□□□-□T□□-□□□□-CHP	EasyMulti-Cut face grooving toolholder for high pressure coolant	F191
ETX□-...	EasyMulti-Cut grooving and turning insert	F194

F

FLASR/L-□□□□	TungT-Clamp external groovingand threading toolholder	E050, F095
FLASR/L-1616M3	TungT-Clamp external groovingand threading toolholder	E050, F095
FLEX□□R/L	My-T Series grooving insert	F130, F189, F247,
FLG-3M□□□R/L-CB	TungT-Clamp grooving insert	F097, F169
FLSR/L-□□□□	TungT-Clamp external groovingand threading toolholder	E050, F095
FLSR/L-□□□□M3	TungT-Clamp external groovingand threading toolholder	E050, F095
FLT-3R/L-CB	60° angle threading insert	E014
FLT-3R/LC-HCB	60° angle threading insert	E014
FLT-3R/L-HCB	60° angle threading insert	E014
FNMG□□E-TM	45° rhombic, negative insert	B075
FNMG□□E-TSF	45° rhombic, negative insert	B075
FPGN□□□□□-□□T...	TungHeavyGroove external wide profile grooving toolholder	F108, G111
FPGR□□□□□-□□T...	TungHeavyGroove external grooving toolholder	F107

G

G□□-L□□□-...	BoreMeister anti-vibration bar, carbide shank	D090, E057
G□□-L□□□-10D-E	BoreMeister anti-vibration bars with through coolant	D090, E057
GBR/L32...	External grooving insert	F114, F179
GBR/L43...	External grooving insert	F115, F180
GBR/L43□□□R	External grooving insert	F116, F181
GE...	My-T Series grooving insert	F091, F163, F242, F283,
GE□□-AL	My-T Series grooving insert	F094, F165, F244, F285
GE□□R/L	My-T Series grooving insert	F093, F282
GF...	My-T Series grooving insert	F092, F164, F243, F283
GIR/L□□□□-02	Internal grooving insert	F187
GLR/L...	External grooving insert	F118
GN...	My-T Series grooving insert	F093, F164, F244, F284
GNMG□□E-TM	70° rhombic, negative insert	B075
GNMG□□E-TSF	70° rhombic, negative insert	B075
GOR/L...	External grooving insert	F117
GR...	My-T Series grooving insert	F092, F164
GT...	My-T Series grooving insert	F091, F163, F242, F284
GTGN-16...	Grooving insert	F106, F178

Designation	Product name	Page
GX-□□□□R/LE	External wide grooving toolholder	F119
GX-□□□□REU	External wide grooving toolholder	F119
GX-2525R/LF	My-T Series face grooving toolholder	F246
GX-2525R/LI	Internal grooving toolholder	F188
GX-□□□□RIU	Internal grooving toolholder	F188

H

HNGD...	Hexagonal, negative, ISO insert	B111
HS□□-FLER3W	TungT-Clamp internal grooving and threading head	E064, F168
HS□□-LNFR-53	Head exchangeable internal threading head	E065
HS□□-LNFR-54API	Head exchangeable internal threading head	E066
HS□□-MTHOR-...	Head exchangeable internal threading head	E066
HSRNR/L...	External toolholder. H-type	C087

J

J10ER/L□□□B	J10E insert (edge preparation)	B161, G079
J10ER/L□□□BF	J10E insert (shrap edge)	B161, G079
J10ER/L...	J10E insert (edge preparation)	G079
JBBR...	TinyMini-Turn solid carbide bar	G128
JBBS□□-□-...	TinyMini-Turn sleeve for external coolant supply	E063, G134
JBBS□□□-□-...	TinyMini-Turn sleeve for external coolant supply	E063, G134
JBBS□□□-□-L100C	TinyMini-Turn sleeve for internal coolant supply	E063, G135
JBBS□□□-□-L100C-4N	TinyMini-Turn sleeve for internal coolant supply with 4 coolant holes	E061, G134
JBBS□□-□-L100C	TinyMini-Turn sleeve for internal coolant supply	E063, G135
JBBS□□-□-L100C-4N	TinyMini-Turn sleeve for internal coolant supply with 4 coolant holes	E061, G134
JBBS□□-□-L80C-4N	TinyMini-Turn sleeve for internal coolant supply with 4 coolant holes	E061, G134
JBBS127-4-L80C-4N	TinyMini-Turn sleeve for internal coolant supply with 4 coolant holes	E061, G134
JBBSA...C	TinyMini-Turn collet-chuck sleeve	E062, G135
JBCR...	TinyMini-Turn solid carbide bar	G127
JBFR/L...	TinyMini-Turn solid carbide bar	G131
JBGR/L...	TinyMini-Turn solid carbide bar	G130
JBIR...	TinyMini-Turn solid carbide bar	E061, G129
JBPR...	TinyMini-Turn solid carbide bar	G126
JBRR...	TinyMini-Turn solid carbide bar	G132
JBSR07200200-D060	TinyMini-Turn solid carbide bar	G132
JBTR/L...	TinyMini-Turn solid carbide bar	G123
JBUR...	TinyMini-Turn solid carbide bar	G127
JCCN200F...	J-Series grooving insert	F123
JCCR/L200F...	J-Series grooving insert	F123
JCCWSR/L□□□	J-Series external deep grooving and parting tolholder	F123
JCCWSR/L□□□□K2	J-Series external deep grooving and parting tolholder	F123
JCGN200F	J-Series grooving insert	F124
JCGN200FR/L	J-Series grooving insert	F124
JCGSSR/L...	My-T Series external grooving and parting toolholder	F084
JCGWSR/L□□□□K2	J-Series grooving and parting toolholder	F124
JCTER/L□□□□□□T...	TungCut external grooving and parting tool-holder	F020, F257, G150
JCTER/L□□□□X2T□□-CHP	TungCut external grooving and parting tool-holder for high pressure coolant	F021, F258, G151
JCTER/L2012H...	TungCut external grooving and parting tool-holder	G150
JPDJ2XR/L...	MiniForce-Turn external/profiling toolholder	G048
JPVJ2NR...	J-Series external toolholder	G068
JPVJ2NR/L□□□□X1204	J-Series external toolholder	G068
JPVJ2XR/L...	MiniForce-Turn external/profiling toolholder	G065
JPWL2XR/L...	MiniForce-Turn external/facing toolholder	G071
JS□□□□-STCFL18	TetraMini-Cut face grooving toolholder	F223, G137
JS□□□□-STCL18	TetraMini-Cut external grooving and threading toolholder	E042, F048, G089, G173
JS□□□-SDUXL07	MiniForce-Turn external/profiling toolholder	C058, G050
JS□□□-SEL16	External threading toolholder for Swiss lathes	E039, G181
JS□□□-STCFL18	TetraMini-Cut face grooving toolholder with round shank	F223, G137
JS□□□-STCL18	External grooving and threading toolholder	E042, F048, G089, G173
JS□□□-SVUXL09	MiniForce-Turn external/profiling toolholder	C120
JS□□□-SXXL09	DuoJust-Cut threading toolholder	E048, F075, G178
JS□□H-SEXPR...	Boring bar, steel shank	D048

Alphanumeric Index

Designation	Product name	Page
JS□□K-TBL3	J-Series external toolholder	G081
JS□□K-TGL3	J-Series external grooving toolholder	F125, G106
JS□□K-TTL3	J-Series external grooving toolholder	E049, G183
JS□□-SEL16	TungThread External threading toolholder	G181
JSCGCR/L...	J-Series external toolholder	G035
JSCL2CR/L...	J-Series external toolholder	G032
JSCL2CR□□□X-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G033
JSCL2CR1212X09B-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G033
JSCL2CR1616X09-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G033
JSCLCR/L...	J-Series external toolholder	G034
JSCLCR□□□□□09-F15	J-Series stepped head toolholder	G034
JSDFCR/L...	J-Series external toolholder	G044
JSDJ2CR/L...	J-Series external toolholder	G039
JSDJ2CR/L□□□-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G041
JSDJ2CR/L1212□□□-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G041
JSDJ2CR□□□□□□□ -CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G040
JSDJ2CR□□□X-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G040
JSDJ2XR/L□□□□□07-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G048
JSDJ2XR/L□□□-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G048
JSDJ2XR/L...	MiniForce-Turn external toolholder	C057, G047
JSDJCR/L...	J-Series external toolholder	G042
JSDJCR□□□□□□□-F15	J-Series stepped head toolholder	G042
JSDJXR/L...	MiniForce-Turn external toolholder	C057
JSDJXR□□□□□07-F15	MiniForce-Turn stepped head toolholder	G049
JSDJXR□□□-F10	MiniForce-Turn stepped head toolholder	G049
JSDN3CR...	J-Series external toolholder	G045
JSDNCN...	J-Series external toolholder	G044
JSE2R□□□□□16-CHP	TungTurn-Jet threading toolholder with high pressure coolant capability	E038, G180
JSEGR/L...	J-Series external toolholder	G078
JSTACR/L...	J-Series external toolholder	G054
JSTBR/L...	J-Series external toolholder	G081
JSTGR/L...	J-Series external grooving toolholder	F125, G106
JSTTR/L□□□□□3	External toolholder for Swiss lathes	E048, G183
JSVABR/L...	J-Series external toolholder	G061
JSVGR/L□□□□K-C	J-Series external grooving toolholder	F121, G110
JSVGR/L1616K	J-Series external grooving toolholder	F121, G110
JSVGR/L...	J-Series external grooving toolholder	F121, G110
JSVJ2BR/L□□□□□□□ -CHP	TungTurn-Jet external toolholder for high pressure coolant	G059
JSVJ2BR/L...	J-Series external toolholder for high pressure coolant	G058
JSVJ2XR/L□□□□□09-CHP	TungTurn-Jet external toolholder for high pressure coolant	G066
JSVJ2XR/L□□□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	G066
JSVJ2XR/L...	MiniForce-Turn external toolholder	C119, G065
JSVJBR/L...	J-Series external toolholder	G060
JSVJBR□□□□□11-F15	J-Series stepped head toolholder	G060
JSVJXR/L...	MiniForce-Turn external toolholder	C119
JSVJXR□□□□□09-F15	MiniForce-Turn stepped head toolholder	G067
JSVJXR□□□-F10	MiniForce-Turn stepped head toolholder	G067
JSVL2PR/L...	J-Series external toolholder	G062
JSVNBN...	J-Series external toolholder	G061
JSVP2PR/L...	J-Series external toolholder	G063
JSWL2XR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	G072
JSWL2XR/L...	MiniForce-Turn external toolholder	C129, G071
JSWLXR/L...	MiniForce-Turn external toolholder	C128
JSWLXR□□-F...	MiniForce-Turn stepped-head toolholder	G073
JSXBR/L□□□□K8	J-Series external toolholder	E049, G076
JSXBR/L□□□□K8-C	J-Series external toolholder	E049, G076
JSXGR/L□□□□K8	J-Series toolholder for front/back turning, external grooving	F122, G075, G109
JSXGR/L□□□□K8-C	J-Series toolholder for front/back turning, external grooving	F122, G075, G109

Designation	Product name	Page
JSXXR/L□□□	DuoForceCut parting toolholder	E047, F073, F272, G142, G176
JSXXR/L□□□□□05	DuoForceCut parting toolholder	G074, G140
JSXXR/L□□□□□09	DuoJust-Cut parting toolholder	E047, F073, F272, G142, G176
JSXXR/L□□□-CHP	DuoJust-Cut parting toolholder for high pressure coolant	E047, F073, F272, G143, G177
JSXXR/L□□-CHP	DuoJust-Cut parting toolholder for high pressure coolant	E047, F073, F272, G143, G177
JSXXR/L□□-S	DuoJust-Cut parting toolholder for subspindle	F074, F273, G142, G176
JSXXR/L□□-S-CHP	DuoJust-Cut parting toolholder for high pressure coolant for subspindle	F074, F273, G143, G177
JTBR/L...	JTB insert (edge preparation)	B161, G082
JTBR/L□□□□F	JTB insert (shrap edge)	B161, G082
JTCL2CR/L...	J-Series toolholder	G032
JTDJ2CR/L...	J-Series toolholder	G040
JTGR/L...	J-Series grooving insert (honed edge)	F127, G108
JTGR/L□□□□F...	J-Series grooving insert (sharp edge)	F126 -, G107 -
JTTACR/L...	J-Series toolholder	G055
JTTANR/L...	J-Series toolholder	G057
JTTER/L□□-S	TungCut Grooving & Parting toolholder for sub-spindle	F022, F259, G149
JTTER/L...	TungCut Grooving & Parting toolholder	F021, F258, G149
JTTLNR/L...	J-Series toolholder	G056
JTTR/L30□□F	Threading insert, 60° thread angle (sharp edge)	E013, G184
JTTR/L3005F-55	Threading insert, 55° thread angle (sharp edge)	E016, G184
JVFN45R/L...	JVFN45R/L insert	G074
JVGR/L□□□F	J-Series external grooving insert with hand	F121, G110
JVPN□□R/L...	DuoForceCut parting insert	G140
JXBR/L...	JXB insert (edge preparation)	B160, G077
JXBR/L□□□□F	JXB insert (shrap edge)	B160, G076
JXDX□□R□□F	DuoJust-Cut insert	F076, G145
JXFR□□□□F	Positive insert for front turning	B159, G075
JXGR/L□□□□FA...	J-Series grooving insert	F122, G109
JXGR/L8200FN...	J-Series grooving insert	F122, G109
JXPG□□R/L□□F...	DuoJust-Cut insert	F077, F274 -, G146
JXPS□□R/L□□F	DuoJust-Cut insert	F076, F274, G145
JXRR□□□□F	Positive insert for reverse turning	B160, G075
JXT□R6000F	60° angle threading insert	E013, G182
JXTG12FR/L-60□-...	DuoJust-Cut 60° angle threading insert	E012, G147, G178
K		
KNMX□□L/R-S1	Negative insert, parallelogram	B110
L		
L535B1EXT-FC	API Buttress threading insert	E032
L535B1INT-FC	API Buttress threading insert	E032
L535B75EXT-FC	API Buttress threading insert	E032
L535B75INT-FC	API Buttress threading insert	E032
LDS54□□□FT-CB #...	Threading insert	E035
LNMX□□□□□□R/L-...	TurnTec insert	C062, D051
M		
MTVNR-□□□□	External threading toolholder	E051
MTVNR-□□□□M5	External threading toolholder	E051
MTVNR-3232M54	External threading toolholder	E051
MTVOR-□□□	External threading toolholder	E052
MTVOR-□□□□M...	External threading toolholder	E052
P		
PCBNR/L2525	P-type external toolholder	C031
PCFNR/L...	P-type external toolholder	C030
PCLCR/L1616X09S-CHP-MC	TungTurn-Jet external toolholder for high pressure coolant	C034
PCLNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C023

Designation	Product name	Page
PCLNR/L□□-CHP-N	TungTurn-Jet external toolholder for high pressure coolant	C025
PCLNR/L□□□□X□□-CHP-MC	TungTurn-Jet external toolholder for high pressure coolant	C024
PCLNR/L...	P-type external toolholder	C022
PCL2NR2020H12	ISO-EcoTurn / P-type external toolholder	G036
PDJNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C039
PDJNR/L...	ISO-EcoTurn / P-type external toolholder	C038, G052
PDPNN...	P-type external toolholder	C050
PDQNR/L2525	P-type external toolholder	C047
POMG□□□□□□-MNW	TurnTenFeed insert	C064
PPXOR/L...	TurnTenFeed external toolholder	C063
PRDCN...	P-type external toolholder	C072
PRGCR/L...	P-type external toolholder	C069
PRGNR/L...	P-type external toolholder	C066
PSBNR/L...	P-type external toolholder	C086
PSDNN...	P-type external toolholder	C077
PSGB...	TungHeavyGroove wide grooving insert	F111, G112
PSGM...	TungHeavyGroove wide profile grooving insert	F110
PSKNR/L...	P-type external toolholder	C083
PSSNR/L...	P-type external toolholder	C080
PTFNR/L...	ISO-EcoTurn / P-type external toolholder	C095
PTGNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C093
PTGNR/L...	ISO-EcoTurn / P-type external toolholder	C092
PTJNR/L...	ISO-EcoTurn external toolholder	C089
PTL2NR/L...	J-Series external toolholder	C088, G056
PVJNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C105
PVJNR/L...	ISO-EcoTurn / P-type external toolholder	C104
PVQNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C112
PVQNR/L...	ISO-EcoTurn external toolholder	C111
PVVNN...	ISO-EcoTurn external toolholder	C108
PWLNR/L□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C124
PWLNR/L□□□□X□□-CHP-MC	TungTurn-Jet external toolholder for high pressure coolant	C125
PWLNR/L...	ISO-EcoTurn external toolholder	C123

Q		
QC-...	ModuMini-Turn Shank for modular heads	E046, G115
QC-12D28EXC	ModuMini-Turn Holder for insert exchange	G116
QC12-JSCL2CR09	ModuMini-Turn Head	G030
QC12-JSCL2CR09-CHP	ModuMini-Turn Head	G031
QC12-JSCL2CR09-Y	ModuMini-Turn Head	G030
QC12-JSCL2CR09-Y-CHP	ModuMini-Turn Head	G030
QC12-JSDJ2CR□□-CHP	ModuMini-Turn Head	G038
QC12-JSDJ2CR...	ModuMini-Turn Head	G038
QC12-JSDJ2CR11-Y	ModuMini-Turn Head	G037
QC12-JSDJ2CR11-Y-CHP	ModuMini-Turn Head	G038
QC12-JSDJ2XR07	ModuMini-Turn Head	G046
QC12-JSDJ2XR07-CHP	ModuMini-Turn Head	G047
QC12-JSDJ2XR07-Y	ModuMini-Turn Head	G046
QC12-JSDJ2XR07-Y-CHP	ModuMini-Turn Head	G046
QC12-JSDNXR07-CHP	ModuMini-Turn Head	G051
QC12-JSEGR10	ModuMini-Turn Head	G078
QC12-JSEGR10-CHP	ModuMini-Turn Head	G078
QC12-JSVJ2BR11	ModuMini-Turn Head	G058
QC12-JSVJ2BR11-CHP	ModuMini-Turn Head	G058
QC12-JSVJ2XR09	ModuMini-Turn Head	G064
QC12-JSVJ2XR09-CHP	ModuMini-Turn Head	G064
QC12-JSVVXR09-CHP	ModuMini-Turn Head	G067
QC12-JSWL2XR04	ModuMini-Turn Head	G070
QC12-JSWL2XR04-CHP	ModuMini-Turn Head	G070
QC12-JSWL2XR04-Y	ModuMini-Turn Head	G069
QC12-JSWL2XR04-Y-CHP	ModuMini-Turn Head	G069
QC12-JTTER/L□□□□□□-CHP	TungCut Grooving & Parting head with high pressure coolant	G148
QC12-STCR/L18	TetraMini-Cut external grooving and threading head	E044, G087, G171
QC12-STCR/L18-CHP	TetraMini-Cut external grooving and threading head with high pressure coolant capability	E044, G087, G171
QC12-STCR/L18-Y	Y-axis turning modular head for external grooving and threading	E045, G086, G170
QC12-STCR/L18-Y-CHP	Y-axis turning modular head for external grooving and threading, with high pressure coolant capability	E045, G086, G170

Designation	Product name	Page
QC12-STOPPER	ModuMini-Turn Plug	G116
QC12-SVER/L10-CHP	ModuMini-Turn Head	G083, G168
Q-CCMW060204	CBN insert, 80° rhombic, positive	B190
Q-CCMW09T304	CBN insert, 80° rhombic, positive	B191
Q-DCMW070204	CBN insert, 55° rhombic, positive	B193
Q-DCMW11T304	CBN insert, 55° rhombic, positive	B194
QGM□-...	AddForceCut grooving insert	F015, F138, F252, G166
QGS□-...	AddForceCut grooving insert	F015, F139, F253, G166
QSER/L□□-□T...	AddForceCut external grooving and parting toolholder	F014, F248, G163
QSG□□-□T	AddForceCut parting-off and external grooving blade	F250, G164
QSP□□-□D	AddForceCut external deep grooving and parting blade	F248, G163
Q-SPGN...	CBN insert, square, positive	B196
Q-TPGN...	CBN insert, traiangular, positive	B202 -
Q-TPGW...	CBN insert, traiangular, positive	B201
Q-TPMW...	CBN insert, traiangular, positive	B198

R		
RCGT□□□□M0-AL	Round, positive, ISO insert	B130
RCGX...	Round, positive, ISO insert	B132
RCGX□□□□□□-E/T1	Round, positive, ISO insert	C075
RCMM□□□□M0-61	Round, positive, ISO insert	B131
RCMT□□□□M0-61	Round, positive, ISO insert	B131
RCMT□□□□M0-CM	Round, positive, ISO insert	B130
RCMT□□□□M0-RS	Round, positive, ISO insert	B130
RCMT1204M0-6R...	FixR-Turn / Round, positive, ISO insert	B130, C071, C074
RNGA120400	Round, negative, ISO insert	B076
RNGN120...	Round, negative, ISO insert	B076
RNGN□□-E/T1	Round, negative, ISO insert	B076, C067
RNMG□□-61	Round, negative, ISO insert	B076
RSL-□□-□□-L...	BoreMeister split sleeve for anti-vibration bar	E059
RT...	Special round, positive insert	B131

S		
S□□□-CGTR/L...	My-T Series internal grooving toolholder	F161
S□□□-CSKPR/L...	Boring bar, steel shank	D053
S□□□-CTFPR/L...	Boring bar, steel shank	D058
S□□□-PCLNR/L...	Boring bar, steel shank	D028
S□□□-PDUNR/L...	Boring bar, steel shank	D043
S□□□-PDZNR/L15	Boring bar, steel shank	D047
S□□□-PSKNR12-...	Boring bar, steel shank	D054
S□□□-PTFNR/L16	Boring bar, steel shank	D064
S□□□-PTUNR/L...	Boring bar, steel shank	D067
S□□□-PWLNR/L06	Boring bar, steel shank	D084
S□□□-TLANR/L□□-...	TurnTec boring bar, steel shank	D050
S□□-DDUNR/L□□T-H	BoreMeister exchangeable boring head	D046
S□□-PCLNR/L□□-H	BoreMeister exchangeable boring head	D030
S□□-PTFNR/L□□-H	BoreMeister exchangeable boring head	D064
S□□-QSIR/L□T□□D□□□-H	AddForceCut internal grooving head	F136
S□□-SGTR/L...	Internal grooving toolholder	F179
S□□-SCLCR/L□□-H	BoreMeister exchangeable boring head	D021
S□□-SCLXR/L□□-H	BoreMeister exchangeable boring head	D026
S□□-SDUCR/L□□-H	BoreMeister exchangeable boring head	D034
S□□-SDUCR/L□□T-H	BoreMeister exchangeable boring head	D034
S□□-SNR16-H	BoreMeister internal threading head	E056
S□□-STFPR/L□□-H	BoreMeister exchangeable boring head	D059
S□□-SVLCR/L16T-H	BoreMeister exchangeable boring head	D072
S□□-SVUCR/L11-H	BoreMeister exchangeable boring head	D073
S□□-SWLXR/L□□-H	BoreMeister exchangeable boring head	D082
S□□-SXUOR05-H	BoreMeister exchangeable boring head	D087
S40-DVUNR/L16T-H	BoreMeister boring head	D079
S-570-□□M-...	Shank for internal grooving and threading head	F168
SCLCR/L...	S-type external toolholder	C034
SCMT□□-23	Square, positive, ISO insert	B134
SCMT□□-24	Square, positive, ISO insert	B134
SCMT□□-CM	Square, positive, ISO insert	B134
SCMT□□-PM	Square, positive, ISO insert	B134
SCMT□□-PS	Square, positive, ISO insert	B134
S-CNGN...	CBN insert, 80° rhombic, negative, solid type	B170 -
SDJCR/L...	S-type external toolholder	C052
SDNCN...	S-type external toolholder	C054
SDQCR/L...	S-type external toolholder	C054
SER□□□□H11	External threading toolholder	E040, G181

Alphanumeric Index

Designation	Product name	Page
SER□□□□X□□-CHP-MC	TungTurn-Jet threading toolholder with high pressure coolant nozzle	E038, G180
SGM□-...	TungCut grooving insert	F035, F151, F215, F265, G158
SGN□□□-...	TungCut grooving insert	F044, F159, F221, G161
SGS□-...	TungCut grooving insert	F037, F153, F217, F267, G159
SGTR/L□□□□-...	External grooving toolholder	F117
SI-CLHOR-40M6	Internal threading toolholder for chaser	E067
SIR...	Internal threading bars, Screw-on clamp	E054
SIR□□□□□□□CB	Internal threading bars, Screw-on clamp	E054
SNGA...	Square, negative, ISO insert	B084
SNGA□□DIA	PCD insert, square, negative	B211
SNGA□□QBN	CBN insert, square, negative	B182
SNGD...	Square, negative, ISO insert	B085
SNGG□□-01	Square, negative, ISO insert	B078
SNGG□□R/L-B	Square, negative, ISO insert	B079
SNGG□□R/L-C	Square, negative, ISO insert	B079
SNGG□□R/L-D	Square, negative, ISO insert	B079
SNGG□□R/L-P	Square, negative, ISO insert	B081
SNGN...	Square, negative, ISO insert	B085
SNGN□□DIA	PCD insert, square, negative	B212
SNGN□□-T1	Square, negative, ISO insert	B085
SNGR/L...	Internal grooving toolholder	F183, G120
SNMA...	Square, negative, ISO insert	B084
SNMG...	Square, negative, ISO insert	B080
SNMG□□-11	Square, negative, ISO insert	B078
SNMG□□-17	Square, negative, ISO insert	B079
SNMG□□-27	Square, negative, ISO insert	B082
SNMG□□-33	Square, negative, ISO insert	B082
SNMG□□-37	Square, negative, ISO insert	B082
SNMG□□-AS	Square, negative, ISO insert	B077
SNMG□□-CF	Square, negative, ISO insert	B078
SNMG□□-CH	Square, negative, ISO insert	B083
SNMG□□-CM	Square, negative, ISO insert	B080
SNMG□□-DM	Square, negative, ISO insert	B080
SNMG□□-HMM	Square, negative, ISO insert	B081
SNMG□□-HRF	Square, negative, ISO insert	B078
SNMG□□-HRM	Square, negative, ISO insert	B081
SNMG□□L/R-S	Square, negative, ISO insert	B082
SNMG□□-NS	Square, negative, ISO insert	B077
SNMG□□-PM	Square, negative, ISO insert	B079
SNMG□□-PS	Square, negative, ISO insert	B077
SNMG□□-SA	Square, negative, ISO insert	B081
SNMG□□-SDM	Square, negative, ISO insert	B080
SNMG□□-SF	Square, negative, ISO insert	B078
SNMG□□-SH	Square, negative, ISO insert	B083
SNMG□□-SM	Square, negative, ISO insert	B080
SNMG□□-SS	Square, negative, ISO insert	B078
SNMG□□-TA	Square, negative, ISO insert	B081
SNMG□□-TF	Square, negative, ISO insert	B077
SNMG□□-TH	Square, negative, ISO insert	B082
SNMG□□-THS	Square, negative, ISO insert	B082
SNMG□□-TM	Square, negative, ISO insert	B079
SNMG□□-TS	Square, negative, ISO insert	B078
SNMG□□-TSF	Square, negative, ISO insert	B077
SNMG□□-ZF	Square, negative, ISO insert	B077
SNMG□□-ZM	Square, negative, ISO insert	B080
SNMM□□-57	Square, negative, ISO insert	B083
SNMM□□-65	Square, negative, ISO insert	B083
SNMM□□-TRS	Square, negative, ISO insert	B083
SNMM□□-TU	Square, negative, ISO insert	B084
SNMM□□-TUS	Square, negative, ISO insert	B084
SNMN...	Square, negative, ISO insert	B085
SNR/L...	Internal threading toolholder	E055
SNR000□H06-...	Internal threading toolholder	E054
SNR000□K06SC-...	Internal threading toolholder	E054
SPGA...	Square, positive, ISO insert	B136
SPGM□□L	Square, positive, ISO insert	B136
SPGN...	Square, positive, ISO insert	B137
SPGN□□-□□T...	TungHeavyGroove external wide profile grooving toolholder	F109, G112
SPGN□□QBN	CBN insert, square, positive	B196
SPGN□□DIA	PCD insert, square, positive	B215
SPGN□□QBN	CBN insert, square, positive	B197
SPGR□□L	Square, positive, ISO insert	B137
SPGT□□L-W20	Square, positive, ISO insert	B135
SPGT□□R/L-W15	Square, positive, ISO insert	B135
SPGW...	Square, positive, ISO insert	B136
SPMN...	Square, positive, ISO insert	B137
SPMR□□-23	Square, positive, ISO insert	B137
SPMR□□-CM	Square, positive, ISO insert	B137
SPMT□□-23	Square, positive, ISO insert	B135
SPMT□□-24	Square, positive, ISO insert	B136
SPMT□□-CM	Square, positive, ISO insert	B135
SPMT□□-PS	Square, positive, ISO insert	B135
SPMW...	Square, positive, ISO insert	B136
SRACR/L...	S-type external toolholder	C068
SRDCN...	S-type external toolholder	C073
SRDCN□□-6F	FixR-Turn external toolholder	C074
SRGCR/L...	S-type external toolholder	C070
SRGCR/L□□-6F	FixR-Turn external toolholder	C071
S-RNGN...	CBN insert, solid type	B179
SSD□N...	S-type external toolholder	G053
S-SNGN...	CBN insert, square, negative, solid type	B181
STACR/L...	S-type external toolholder	C098
STCAR/L18-CHP	TetraMini-Cut external grooving adapter for high pressure coolant	F048, F225
STCAR/L27-CHP	TetraForce-Cut external grooving adapter for high pressure coolant	F062
STCFVR□□18	TetraMini-Cut face grooving toolholder with square shank for swiss lathes	F223, G137
STCR/L□□□□□18	TetraMini-Cut external grooving and threading toolholder	E041, F046, F224, G088, G172,
STCR/L□□□□□18B-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	E041, F046, F047, G089, G138, G172, G173,
STCR/L□□□□□18-CHP	TetraMini-Cut grooving toolholder with high pressure coolant capability	E041, E042, F046, F047, G088, G138, G172, G173
STCR/L□□-27	TetraForce-Cut external grooving toolholder	F061, G099
STCR/L□□-27-CHP	TetraForce-Cut grooving toolholder for high pressure coolant	F061 -, G099 -
STCR/L□□-38	TetraForce-Cut external grooving toolholder	F066, G105
STCR/L□□-38-CHP	TetraForce-Cut external grooving toolholder for high pressure coolant	F066
STH□□□-SR	TungCut turning insert	F043, F158, F221
S-TNGN...	CBN insert, traiangular, negative, solid type	B184 -
STR□-...	TungCut grooving insert	F042, F157, F219
STVOR-□□□	External threading toolholder	E052
STVOR-□□□□M...	External threading toolholder	E052
STXCR/L□□-CHP-MC	AddMultiTurn external toolholder	C100
SVER/L...	MiniV-lockGroove Grooving toolhoder	G083 -, G168
SVHCR/L2525M22	S-type external toolholder	C117
SVJCR/L...	S-type external toolholder	C113
SVQCR/L...	S-type external toolholder	C116
SVVCN...	S-type external toolholder	C115
SYHBR/L...	Y-Pro external toolholder	C132
SYIBN...	Y-Pro external toolholder	C131
SYJBR/L...	Y-Pro external toolholder	C130
SYQBR/L...	Y-Pro external toolholder	C131
T		
T□□□-PCLNR...	Tsuppari-Ichiban internal toolholder	D029
T□□□-PDUNR15C	Tsuppari-Ichiban internal toolholder	D044
T□□□-PTUNR...	Tsuppari-Ichiban internal toolholder	D067
T□□□-SCLCR/L...	Tsuppari-Ichiban internal toolholder	D020
T□□□-SCLPR/L...	Tsuppari-Ichiban internal toolholder	D024
T□□□-SDQCR/L...	Tsuppari-Ichiban internal toolholder	D036
T□□□-STUPR/L...	Tsuppari-Ichiban internal toolholder	D062
T20R-SVQBR11C	Tsuppari-Ichiban internal toolholder	D070
T20R-SVUBR11C	Tsuppari-Ichiban internal toolholder	D068
T25S-SVQCR16C	Tsuppari-Ichiban internal toolholder	D074
T25S-SVUCR16C	Tsuppari-Ichiban internal toolholder	D073
T2QP-CNGA1204...	CBN insert, 80° rhombic, negative	B168, B169

Designation	Product name	Page
T3QP-TNGA1604...	CBN insert, traiangular, negative	B182, B183
TBBR...	TinyMini-Turn solid carbide bar	G128
TBCR...	TinyMini-Turn solid carbide bar	G127
TBFR...	TinyMini-Turn solid carbide bar	G131
TBGN□□QBN	CBN insert, traiangular, positive	B197
TBGR...	TinyMini-Turn solid carbide bar	G129
TBIR...	TinyMini-Turn solid carbide bar	E060, G128
TBM□□R/LF□□-2.25	TungBoreMini toolholder	D086
TBPR...	TinyMini-Turn solid carbide bar	G126
TBRR...	TinyMini-Turn solid carbide bar	G132
TBSR07200200-D060	TinyMini-Turn solid carbide bar	G132
TBTR/L...	TinyMini-Turn solid carbide bar	G125
TBUR...	TinyMini-Turn solid carbide bar	G126
TCF18L...	TetraMini-Cut face grooving insert	F230, G139
TCG18R/L...	TetraMini-Cut insert (edge preparation)	F056 -, F233 -, G093 -
TCG18R/L...	TetraMini-Cut insert (Full R)	F057, F234, G094
TCGT□□-01	Traiangular, positive, ISO insert	B138
TCGT□□-AL	Traiangular, positive, ISO insert	B140
TCGT□□F-01	Traiangular, positive, ISO insert	B138
TCGT□□FN-JP	Traiangular, positive, ISO insert	B138
TCGT□□FN-JS	Traiangular, positive, ISO insert	B138
TCGT□□FR/L-J08	Traiangular, positive, ISO insert	B139
TCGT□□FR/L-J10	Traiangular, positive, ISO insert	B139
TCGT□□L-W15	Traiangular, positive, ISO insert	B139
TCGT□□N-JS	Traiangular, positive, ISO insert	B138
TCGT□□R/L-J10	Traiangular, positive, ISO insert	B139
TCGT□□-SS	Traiangular, positive, ISO insert	B141
TCGT□□R	Traiangular, positive, ISO insert	B141
TCIG...	AddInternalCut internal grooving insert	F135, G118
TCL18R/L...	TetraMini-Cut grooving insert	F055, F232, G091
TCL27-□□□-...	TetraForce-Cut Grooving insert	F067, G100
TCL38-□□□-...	TetraForce-Cut Grooving insert	F071, G105
TCLNR/L...	External toolholder	C028
TCM27-□□□-...	TetraForce-Cut grooving insert	F070, G103
TCM27-□□□-...	TetraForce-Cut Grooving insert (Full R)	F071, G104
TCMT□□-23	Traiangular, positive, ISO insert	B141
TCMT□□-24	Traiangular, positive, ISO insert	B141
TCMT□□-CM	Traiangular, positive, ISO insert	B140
TCMT□□-PM	Traiangular, positive, ISO insert	B141
TCMT□□-PS	Traiangular, positive, ISO insert	B140
TCMT□□-PSF	Traiangular, positive, ISO insert	B138
TCMT□□-PSS	Traiangular, positive, ISO insert	B140
TCMT□□-TM	Traiangular, positive, ISO insert	B140
TCMT□□-TSF	Traiangular, positive, ISO insert	B138
TCMT□□DIA	PCD insert, traiangular, positive	B215 -
TCNR□□□□□□□□DT	Internal grooving and threading toolholder	E056, F177
TCP18R/L...	TetraMini-Cut grooving insert	F058, F235, G095
TCP18R/L□□□F...	TetraMini-Cut Grooving insert (Sharp Edge)	F059, F236, G096
TCS18R/L...	TetraMini-Cut grooving insert	F054 -, F230 -, G091 -
TCS27-□□□-...	TetraForce-Cut Grooving insert	F068, G101
TCS27-□□□-...	TetraForce-Cut Grooving insert (Full R)	F069, G102
TCS27-□□□-□□R/L	TetraForce-Cut Grooving insert	F069, G102
TCT18FR-□□□ISO	TetraMini-Cut ISO metric threading insert	E020, G174
TCT18FR-□□ISO	TetraMini-Cut ISO metric threading insert	E020, G174
TCT18FR-60A-...	TetraMini-Cut 60° angle threading insert	E012, G175
TCT18R/L-60N-...	TetraMini-Cut 60° angle threading insert	E012, G174
TCT18R-□□ISO	TetraMini-Cut ISO metric threading insert	E020, G174
TCT18R-125ISO	TetraMini-Cut ISO metric threading insert	E020, G174
TGTSR/L...	External grooving toolholder	F112
TGTTR/L...	Perpendicular toolholder for external grooving	F113
TLANR/L...	TurnTec external toolholder	C060
TLBNR/L...	TurnTec external toolholder	C061
TLFNR/L...	TurnTec external toolholder	C061
TNGA...	Traiangular, negative, ISO insert	B096
TNGA□□DIA	PCD insert, traiangular, negative	B212
TNGA□□QBN	CBN insert, traiangular, negative	B185
TNGG□□-01	Traiangular, negative, ISO insert	B089
TNGG□□F-01	Traiangular, negative, ISO insert	B089
TNGG□□FR/L-P	Traiangular, negative, ISO insert	B094

Designation	Product name	Page
TNGG□□FR/L-W	Traiangular, negative, ISO insert	B090
TNGG□□R/L-A	Traiangular, negative, ISO insert	B090
TNGG□□R/L-C	Traiangular, negative, ISO insert	B090
TNGG□□R/L-D	Traiangular, negative, ISO insert	B090
TNGG□□R/L-P	Traiangular, negative, ISO insert	B094
TNGG□□R/L-W	Traiangular, negative, ISO insert	B090
TNGN...	Traiangular, negative, ISO insert	B097
TNMA...	Traiangular, negative, ISO insert	B096
TNMA4310RDEXT	API Round threading insert	E031
TNMA4310RDINT	API Round threading insert	E031
TNMA438RDEXT	API Round threading insert	E031
TNMA438RDINT	API Round threading insert	E031
TNMA43NT□□PEXT-PT	29° Trapezoidal threading insert	E029
TNMA43NT□□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMA43NT□PEXT-PT	29° Trapezoidal threading insert	E029
TNMA43NT□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMA545B1EXT-FC	API Buttress threading insert	E033
TNMA545B1INT-FC	API Buttress threading insert	E033
TNMA545B75EXT-FC	API Buttress threading insert	E033
TNMA545B75INT-FC	API Buttress threading insert	E033
TNMA54NT□PEXT-PT	29° Trapezoidal threading insert	E029
TNMA54NT□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMC4310RDEXT	API Round threading insert	E031
TNMC4310RDINT	API Round threading insert	E031
TNMC438RDEXT	API Round threading insert	E031
TNMC438RDINT	API Round threading insert	E031
TNMC43NT□□PEXT-PT	29° Trapezoidal threading insert	E029
TNMC43NT□□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMC43NT□PEXT-PT	29° Trapezoidal threading insert	E029
TNMC43NT□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMC545B1EXT-FC	API Buttress threading insert	E033
TNMC545B1INT-FC	API Buttress threading insert	E033
TNMC545B75EXT-FC	API Buttress threading insert	E033
TNMC545B75INT-FC	API Buttress threading insert	E033
TNMC54NT□PEXT-PT	29° Trapezoidal threading insert	E029
TNMC54NT□PSTUBE-PT	29° Trapezoidal threading insert	E030
TNMG...	Traiangular, negative, ISO insert	B092
TNMG□□-11	Traiangular, negative, ISO insert	B089
TNMG□□-17	Traiangular, negative, ISO insert	B089
TNMG□□-27	Traiangular, negative, ISO insert	B094
TNMG□□-28	Traiangular, negative, ISO insert	B094
TNMG□□-33	Traiangular, negative, ISO insert	B094
TNMG□□-37	Traiangular, negative, ISO insert	B094
TNMG□□-38	Traiangular, negative, ISO insert	B095
TNMG□□-AM	Traiangular, negative, ISO insert	B091
TNMG□□-AS	Traiangular, negative, ISO insert	B087
TNMG□□-CB	Traiangular, negative, ISO insert	B089
TNMG□□-CF	Traiangular, negative, ISO insert	B088
TNMG□□-CH	Traiangular, negative, ISO insert	B095
TNMG□□-CM	Traiangular, negative, ISO insert	B092
TNMG□□-DM	Traiangular, negative, ISO insert	B092
TNMG□□E-FW	Traiangular, negative, ISO insert	B088
TNMG□□E-SM	Traiangular, negative, ISO insert	B092
TNMG□□E-SS	Traiangular, negative, ISO insert	B088
TNMG□□E-SW	Traiangular, negative, ISO insert	B093
TNMG□□E-TF	Traiangular, negative, ISO insert	B087
TNMG□□E-TM	Traiangular, negative, ISO insert	B090
TNMG□□E-TSF	Traiangular, negative, ISO insert	B087
TNMG□□-FW	Traiangular, negative, ISO insert	B088
TNMG□□-HMM	Traiangular, negative, ISO insert	B093
TNMG□□-HRF	Traiangular, negative, ISO insert	B088
TNMG□□-HRM	Traiangular, negative, ISO insert	B092
TNMG□□-NM	Traiangular, negative, ISO insert	B091
TNMG□□-NS	Traiangular, negative, ISO insert	B087
TNMG□□-PM	Traiangular, negative, ISO insert	B091
TNMG□□-PS	Traiangular, negative, ISO insert	B087
TNMG□□R/L-S	Traiangular, negative, ISO insert	B094
TNMG□□-SA	Traiangular, negative, ISO insert	B093
TNMG□□-SDM	Traiangular, negative, ISO insert	B092
TNMG□□-SF	Traiangular, negative, ISO insert	B088
TNMG□□-SM	Traiangular, negative, ISO insert	B092
TNMG□□-SS	Traiangular, negative, ISO insert	B088
TNMG□□-SW	Traiangular, negative, ISO insert	B093
TNMG□□-TA	Traiangular, negative, ISO insert	B093
TNMG□□-TF	Traiangular, negative, ISO insert	B087
TNMG□□-TH	Traiangular, negative, ISO insert	B095
TNMG□□-THS	Traiangular, negative, ISO insert	B095

Alphanumeric Index

Designation	Product name	Page
TNMG□□-TM	Traiangular, negative, ISO insert	B090
TNMG□□-TQ	Traiangular, negative, ISO insert	B093
TNMG□□-TS	Traiangular, negative, ISO insert	B088
TNMG□□-TSF	Traiangular, negative, ISO insert	B087
TNMG□□-ZF	Traiangular, negative, ISO insert	B087
TNMG□□-ZM	Traiangular, negative, ISO insert	B091
TNMM□□-57	Traiangular, negative, ISO insert	B095
TNMM□□DIA	PCD insert, traiangular, negative	B212
TPGA...	Traiangular, positive, ISO insert	B147
TPGA□□DIA	PCD insert, traiangular, positive	B216 -
TPGA□□QBN	CBN insert, traiangular, positive	B205 -
TPGH□□L-H11	Traiangular, positive, ISO insert	B146
TPGH□□L-W10	Traiangular, positive, ISO insert	B143
TPGH□□L-W13	Traiangular, positive, ISO insert	B144
TPGM□□L-2	Traiangular, positive, ISO insert	B146
TPGM□□R/L	Traiangular, positive, ISO insert	B146
TPGN...	Traiangular, positive, ISO insert	B149
TPGN□□DIA	PCD insert, traiangular, positive	B218
TPGN□□QBN	CBN insert, traiangular, positive	B204 -
TPGR□□R/L	Traiangular, positive, ISO insert	B148
TPGT□□-01	Traiangular, positive, ISO insert	B142
TPGT□□F-JS	Traiangular, positive, ISO insert	B142
TPGT□□FR/L-W08	Traiangular, positive, ISO insert	B143
TPGT□□-JS	Traiangular, positive, ISO insert	B142
TPGT□□R/L-W08	Traiangular, positive, ISO insert	B143
TPGT□□R/L-W15	Traiangular, positive, ISO insert	B144
TPGT□□-SS	Traiangular, positive, ISO insert	B144
TPGW...	Traiangular, positive, ISO insert	B147
TPGW□□DIA	PCD insert, traiangular, positive	B219 -
TPGW□□QBN	CBN insert, traiangular, positive	B203 -
TPMN...	Traiangular, positive, ISO insert	B148
TPMR□□-23	Traiangular, positive, ISO insert	B148
TPMR□□-24	Traiangular, positive, ISO insert	B149
TPMR□□-CM	Traiangular, positive, ISO insert	B148
TPMR□□-PS	Traiangular, positive, ISO insert	B148
TPMT□□-23	Traiangular, positive, ISO insert	B146
TPMT□□-24	Traiangular, positive, ISO insert	B147
TPMT□□-CM	Traiangular, positive, ISO insert	B146
TPMT□□-PF	Traiangular, positive, ISO insert	B142
TPMT□□-PM	Traiangular, positive, ISO insert	B147
TPMT□□-PS	Traiangular, positive, ISO insert	B145
TPMT□□-PSF	Traiangular, positive, ISO insert	B142
TPMT□□-PSS	Traiangular, positive, ISO insert	B145
TPMT□□TM	Traiangular, positive, ISO insert	B145
TPMT□□-TSF	Traiangular, positive, ISO insert	B143
TPMW...	Traiangular, positive, ISO insert	B147
TRDCN...	External toolholder	C075
TRGNR/L...	External toolholder	C067
TSKNR/L...	External toolholder	C084
TSNR...	Internal threading toolholder	E055
TT-2525R/LE	External threading toolholder	E053
TT-2525RI	Internal threading toolholder	E067
TTR/L42M-005	60° angle threading insert	E014
TTR/L42W-005	55° angle threading insert	E016
V		
VBGT□□FN-JP	35° rhombic, positive, ISO insert	B150
VBGT□□FN-JS	35° rhombic, positive, ISO insert	B150
VBGT□□N-JS	35° rhombic, positive, ISO insert	B150
VBGT□□FR/L-J10	35° rhombic, positive, ISO insert	B150
VBGT□□R/L-J10	35° rhombic, positive, ISO insert	B150
VBMT□□-24	35° rhombic, positive, ISO insert	B151
VBMT□□-CM	35° rhombic, positive, ISO insert	B151
VBMT□□-PF	35° rhombic, positive, ISO insert	B150
VBMT□□-PS	35° rhombic, positive, ISO insert	B151
VBMT□□-PSF	35° rhombic, positive, ISO insert	B150
VBMT□□-PSS	35° rhombic, positive, ISO insert	B151
VBMT□□-TM	35° rhombic, positive, ISO insert	B151
VBMT□□-TSF	35° rhombic, positive, ISO insert	B150
VCGT□□-AL	35° rhombic, positive, ISO insert	B153
VCGW□□DIA	PCD insert, 35° rhombic, positive	B220
VCMT...	35° rhombic, positive, ISO insert	B153
VCMT□□-24	35° rhombic, positive, ISO insert	B153
VCMT□□-CM	35° rhombic, positive, ISO insert	B152
VCMT□□-PF	35° rhombic, positive, ISO insert	B152
VCMT□□-PS	35° rhombic, positive, ISO insert	B152
VCMT□□-PSF	35° rhombic, positive, ISO insert	B152

Designation	Product name	Page
VCMT□□-PSS	35° rhombic, positive, ISO insert	B152
VCMT□□-TM	35° rhombic, positive, ISO insert	B152
VCMT□□-TSF	35° rhombic, positive, ISO insert	B152
VCMT□□DIA	PCD insert, 35° rhombic, positive	B220
VGP...	MiniV-lockGroove Grooving insert	G084
VGT10F...	MiniV-lockGroove threading insert	G169
VNGA...	35° rhombic, negative, ISO insert	B101
VNGD...	35° rhombic, negative, ISO insert	B101
VNGG□□-01	35° rhombic, negative, ISO insert	B099
VNMA...	35° rhombic, negative, ISO insert	B101
VNMG...	35° rhombic, negative, ISO insert	B100
VNMG□□-11	35° rhombic, negative, ISO insert	B099
VNMG□□-28	35° rhombic, negative, ISO insert	B101
VNMG□□-33	35° rhombic, negative, ISO insert	B101
VNMG□□-CF	35° rhombic, negative, ISO insert	B099
VNMG□□-CM	35° rhombic, negative, ISO insert	B100
VNMG□□-DM	35° rhombic, negative, ISO insert	B100
VNMG□□E-TF	35° rhombic, negative, ISO insert	B098
VNMG□□E-TSF	35° rhombic, negative, ISO insert	B098
VNMG□□-HMM	35° rhombic, negative, ISO insert	B100
VNMG□□-HRF	35° rhombic, negative, ISO insert	B098
VNMG□□-HRM	35° rhombic, negative, ISO insert	B100
VNMG□□-PM	35° rhombic, negative, ISO insert	B099
VNMG□□-PS	35° rhombic, negative, ISO insert	B098
VNMG□□-SDM	35° rhombic, negative, ISO insert	B100
VNMG□□-SF	35° rhombic, negative, ISO insert	B098
VNMG□□-SM	35° rhombic, negative, ISO insert	B100
VNMG□□-SS	35° rhombic, negative, ISO insert	B098
VNMG□□-TF	35° rhombic, negative, ISO insert	B098
VNMG□□-TM	35° rhombic, negative, ISO insert	B099
VNMG□□-TQ	35° rhombic, negative, ISO insert	B100
VNMG□□-TS	35° rhombic, negative, ISO insert	B098
VNMG□□-TSF	35° rhombic, negative, ISO insert	B098
VNMG□□-ZF	35° rhombic, negative, ISO insert	B098
VNMG□□-ZM	35° rhombic, negative, ISO insert	B099
VNMM□□DIA	PCD insert, 35° rhombic, negative	B212
VPET□□MFN-JSP	35° rhombic, positive, ISO insert	B154
VPET□□MFR/L-JPP	35° rhombic, positive, ISO insert	B154
VPET□□MFR/L-JRP	35° rhombic, positive, ISO insert	B154
VXGU□□MFR/LE-JRP	MiniForce-Turn insert, 35° rhombic, positive	B155
VXGU□□MFR/L-JS	MiniForce-Turn insert, 35° rhombic, positive	B155
W		
WBGT□□FR/L-JS	80° hexagonal, positive, ISO insert	B156
WBGT□□FR/L-W08	80° hexagonal, positive, ISO insert	B156
WBGT□□L-W11	80° hexagonal, positive, ISO insert	B156
WBGT□□R/L-JS	80° hexagonal, positive, ISO insert	B156
WBGT□□R/L-W08	80° hexagonal, positive, ISO insert	B156
WGE...	My-T Series Grooving insert	F087, F278
WGE□□R/L	My-T Series Grooving insert	F087, F279
WGR...	My-T Series Grooving insert	F088
WGT...	My-T Series Grooving insert	F088, F278
WNGA...	80° hexagonal, negative, ISO insert	B109
WNGG□□-01	80° hexagonal, negative, ISO insert	B104
WNMA...	80° hexagonal, negative, ISO insert	B109
WNMA□□E	80° hexagonal, negative, ISO insert	B109
WNMG...	80° hexagonal, negative, ISO insert	B106
WNMG□□-11	80° hexagonal, negative, ISO insert	B104
WNMG□□-17	80° hexagonal, negative, ISO insert	B104
WNMG□□-27	80° hexagonal, negative, ISO insert	B108
WNMG□□-33	80° hexagonal, negative, ISO insert	B108
WNMG□□-37	80° hexagonal, negative, ISO insert	B108
WNMG□□-AFW	80° hexagonal, negative, ISO insert	B104
WNMG□□-AM	80° hexagonal, negative, ISO insert	B106
WNMG□□-AS	80° hexagonal, negative, ISO insert	B102
WNMG□□-ASW	80° hexagonal, negative, ISO insert	B107
WNMG□□-CB	80° hexagonal, negative, ISO insert	B104
WNMG□□-CF	80° hexagonal, negative, ISO insert	B104
WNMG□□-CH	80° hexagonal, negative, ISO insert	B109
WNMG□□-CM	80° hexagonal, negative, ISO insert	B107
WNMG□□-DM	80° hexagonal, negative, ISO insert	B106
WNMG□□E-FW	80° hexagonal, negative, ISO insert	B104
WNMG□□E-SM	80° hexagonal, negative, ISO insert	B106
WNMG□□E-SS	80° hexagonal, negative, ISO insert	B103
WNMG□□E-SW	80° hexagonal, negative, ISO insert	B107
WNMG□□E-TF	80° hexagonal, negative, ISO insert	B102
WNMG□□E-TM	80° hexagonal, negative, ISO insert	B103

Designation	Product name	Page
WNMG□□E-TS	80° hexagonal, negative, ISO insert	B103
WNMG□□E-TSF	80° hexagonal, negative, ISO insert	B102
WNMG□□E-ZF	80° hexagonal, negative, ISO insert	B102
WNMG□□E-ZM	80° hexagonal, negative, ISO insert	B105
WNMG□□-FW	80° hexagonal, negative, ISO insert	B104
WNMG□□-HMM	80° hexagonal, negative, ISO insert	B108
WNMG□□-HRF	80° hexagonal, negative, ISO insert	B103
WNMG□□-HRM	80° hexagonal, negative, ISO insert	B106
WNMG□□-NM	80° hexagonal, negative, ISO insert	B106
WNMG□□-NS	80° hexagonal, negative, ISO insert	B102
WNMG□□-PM	80° hexagonal, negative, ISO insert	B105
WNMG□□-PS	80° hexagonal, negative, ISO insert	B102
WNMG□□-SA	80° hexagonal, negative, ISO insert	B108
WNMG□□-SDM	80° hexagonal, negative, ISO insert	B106
WNMG□□-SF	80° hexagonal, negative, ISO insert	B103
WNMG□□-SH	80° hexagonal, negative, ISO insert	B109
WNMG□□-SM	80° hexagonal, negative, ISO insert	B106
WNMG□□-SS	80° hexagonal, negative, ISO insert	B103
WNMG□□-SW	80° hexagonal, negative, ISO insert	B107
WNMG□□-TA	80° hexagonal, negative, ISO insert	B107
WNMG□□-TF	80° hexagonal, negative, ISO insert	B102
WNMG□□-TH	80° hexagonal, negative, ISO insert	B108
WNMG□□-THS	80° hexagonal, negative, ISO insert	B108
WNMG□□-TM	80° hexagonal, negative, ISO insert	B105
WNMG□□-TQ	80° hexagonal, negative, ISO insert	B107
WNMG□□-TS	80° hexagonal, negative, ISO insert	B103
WNMG□□-TSF	80° hexagonal, negative, ISO insert	B102
WNMG□□-ZF	80° hexagonal, negative, ISO insert	B102
WNMG□□-ZM	80° hexagonal, negative, ISO insert	B105
WPMT090725ZPR/L-ML	TurnFeed insert	B155, C127
WTJNR/L...	W-type external toolholder	C090
WXGU□□MFR/L-JS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B157
WXGU□□MFR/L-JSS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B157
WXGU□□MFR/L-JTS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□MR/L-JSS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B157
WXGU□□MR/L-JTS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□R/L-SS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B157
WXGU□□R/L-TS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□R/L-TSW	MiniForce-Turn insert, 80° trigon, positive, double-sided	B157
X		
XGR/L□□□□-02	Grooving insert	F119, F188
XGR/L□□□□S-QBN	CBN insert for grooving	F120
XNR/L□□□□-...	Face grooving insert	F246
XOMU□□□□□□-PS	TungBoreMini insert	D087
XWXPR/L□□09	TurnFeed external toolholder	C127
Y		
YNMG□□-ZF	25° rhombic, negative insert	B110
YNMG□□-ZM	25° rhombic, negative insert	B110
YWMT□□-ZF	25° rhombic, positive insert	B159
YWMT□□-ZM	25° rhombic, positive insert	B159

Worldwide Network





Tungaloy Corporation Head Office
11-1 Yoshima Kogyodanchi
Iwaki 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
tungaloy.com/jp

Iwaki Plant
Products: Cutting Tools

Nagoya Plant
Products: Cutting Tools

Kyushu Plant
Products: CBN
PCD Tools
Deep Hole Drills

Nirasaki Plant
Products: Cutting Tools
Friction Materials (TungFric)
Wear Resistant Tools
Civil Engineering Tools

Tungaloy-NTK America Inc.
3726 N. Ventura Drive
Arlington Heights
IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford
Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C/ Los Arellano 113
Parque Industrial Siglo XXI
Aguascalientes, AGS
Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
tungaloy.com/mx

Tungaloy-NTK do Brasil Ltda.
Avd. Independencia N4158
Residencial Flora
13280-000 Vinhedo
São Paulo, Brazil
Phone: +55-19-38262757
Fax: +55-19-38262757
tungaloy.com/br

Tungaloy-NTK Germany GmbH.
Katzbergstr. 3a
D-40764 Langenfeld, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
tungaloy.com/de

Tungaloy France s.a.s
Les Fjords
19 avenue de Norvège
91140 Villebon Sur Yvette, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
tungaloy.com/fr

Tungaloy Italia S.r.l.
Viale Sarca 336/Edificio 13
20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
tungaloy.com/it

Tungaloy Czech s.r.o
Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
tungaloy.com/cz

Tungaloy Ibérica S.L.
C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
tungaloy.com/es

Tungaloy Scandinavia AB
Bultgatan 38, 442 40
Kungälv, Sweden
Phone: +46-462119200
Fax: +46-462119207
tungaloy.com/se

Tungaloy Rus, LLC
Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
tungaloy.com/ru

Tungaloy Polska Sp. z o.o.
ul. Irysowa 1, 55-040 Bielany
Wrocławskie, Poland
Phone: +48 607 907 237
tungaloy.com/pl

Tungaloy-NTK UK Ltd.
Suite 3, Pioneer House, Mill Street,
Cannock, WS11 0EF, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
tungaloy.com/uk

Tungaloy Hungary Kft
Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
tungaloy.com/hu

Tungaloy Turkey
Serifali Mah.bayraktar
Bulvari Kule Sk. No:26
34775 Umraniye / Istanbul / Turkey
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
tungaloy.com/tr

Tungaloy Benelux b.v.
Tjalk 70
NL-2411 NZ Bodegraven Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
tungaloy.com/nl

Tungaloy Croatia
Ulica bana Josipa Jelačića 87,
10430 Samobor, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
tungaloy.com/hr

Tungaloy Cutting Tool (Shanghai) Co. Ltd.
Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
tungaloy.com/cn

Tungaloy-NTK Cutting Tool (Thailand) Co.,Ltd.
Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok
10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
tungaloy.com/th

Tungaloy Cutting Tools Taiwan Co. Ltd.
9F. No.293, Zhongyang Rd,
Xinzhuang Dist, New Taipei City,
24251 Taiwan
Phone: +886-2-8521-9986
Fax: +886-2-8521-8935
tungaloy.com/tw

Tungaloy Singapore (Pte.), Ltd.
62 Ubi Road 1
#06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
tungaloy.com/sg

Tungaloy-NTK Vietnam LLC
3rd Floor, Licogi 13 Tower, 164 Khuat Duy Tien, Nhan Chinh, Thanh Xuan District, Hanoi, Vietnam
Phone: +84 24 63282086
tungaloy.com/vn

Tungaloy India Pvt. Ltd.
One International Center,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai -400013, India
Phone: +91-22-6124-8803
Fax: +91-22-6124-8899
tungaloy.com/in

Tungaloy Korea Co., Ltd
#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
tungaloy.com/kr

Tungaloy Malaysia Sdn Bhd
50 K-2, Kelana Mall, Jalan
SS6/14, Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
tungaloy.com/my

Tungaloy Australia Pty Ltd
Unit 68 1470 Ferntree Gully Road
Knoxfield 3180 Victoria, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
tungaloy.com/au

PT. Tungaloy Indonesia
Ruko Blok AA.10 No3&5, Grand
Wisata, Lambangjaya, Tambun
Selatan, Bekasi, 17510 Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
tungaloy.com/id





Tungaloy Corporation (Head office)
11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima, 970-1144 Japan
Phone: +81-246-36-8501 Fax: +81-246-36-8542
tungaloy.com

Tungaloy-NTK America Inc.
3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394 Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779 Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C Los Arellano 113, Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone:+52-449-929-5410 Fax:+52-449-929-5411
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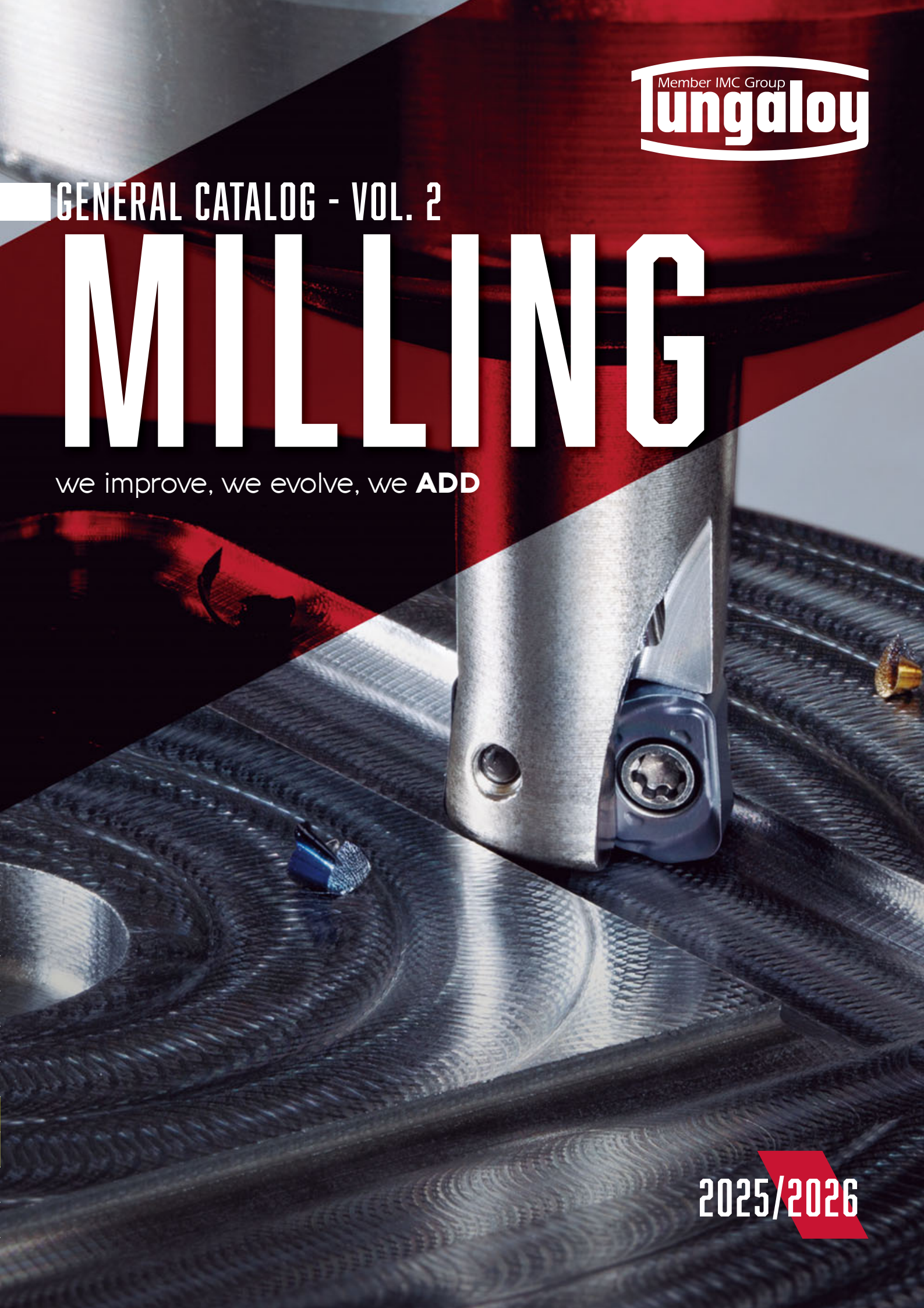
Nov. 2024 (US)

Member IMC Group
Tungaloy

GENERAL CATALOG - VOL. 2

MILLING

we improve, we evolve, we **ADD**



2025/2026



Member IMC Group Tungaloy

Tungaloy's Insights – Smart Manufacturing

Tungaloy, as one of the leaders in the metal removal industry, offers the latest innovations in grades and geometries for superb performance and tool life.

Tungaloy's latest innovations in cutting tools contribute to carbon neutrality

TUNGALOY ADDFORCE ACCELERATED LINES

THINK GREEN

VOL. 2

MILLING

A Grade A001 -

B Insert B001 -

C External Toolholder C001 -

D Internal Toolholder D001 -

E Threading Tool E001 -

F Parting, Grooving F001 -

G Miniature Machining G001 -

H Milling Cutter H001 -

I Endmill I001 -

J Drilling Tool J001 -

K Tooling System K001 -

L User's Guide L001 -

M Alphanumeric Index M001 -

About Tungaloy Cutting Tool Catalog

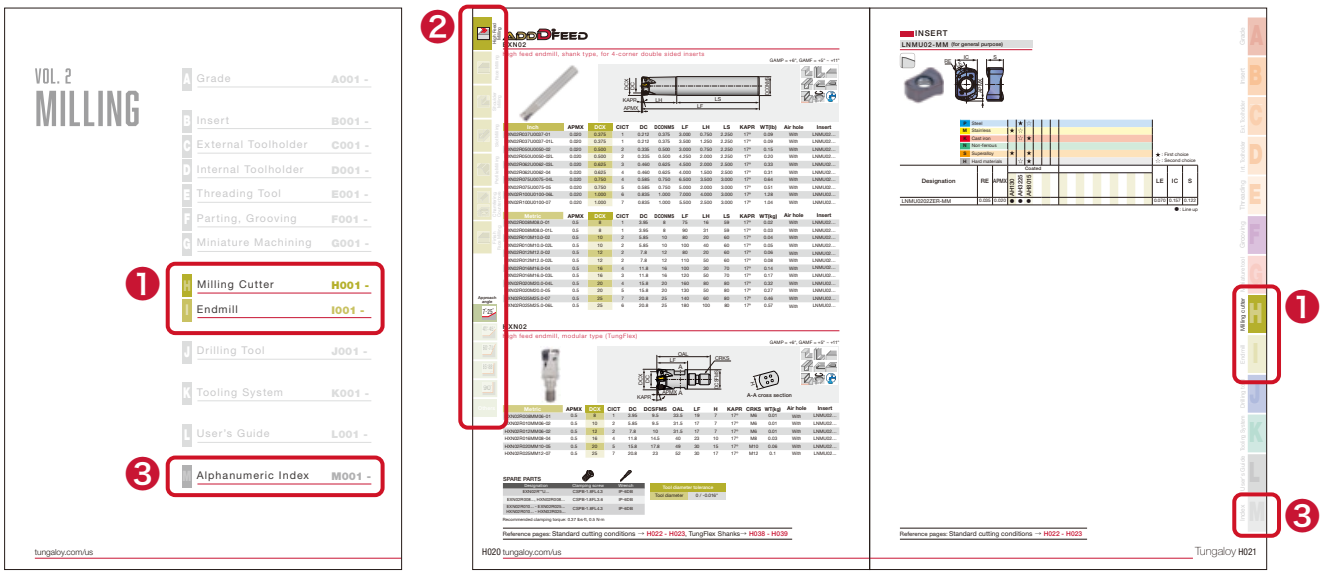
Note in using this catalog:

★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in inch (in) and millimeters (mm) where applicable.

★ For indexable tools, such as toolholders, cutters, drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:



❶ Select the tool category at the product group index.

❷ Select the tool type at the application index on the left pages.

❸ The index is in the alphanumerical order. Use it for your product search.

How to read the list for the standard items:

★ Designations for indexable tools – cutter bodies, holders, etc.

· Orders are to be received for the tools with the designations in the catalog.

· For the tool with right- and left-hand options, the designation includes **R/L** as shown below.

Ex. 1: Designation: TEN09**R/L**125M38.1-10

You can order both right- and left-hand tools. TEN09**R**125M38.1-10 (a right-hand tool) and TEN09**L**125M38.1-10 (a left-hand tool) will be available.

Ex. 2: Designation: TEN09**R**400U0150A05

You can order only right-hand tools. Please contact us when you need left-hand tools.

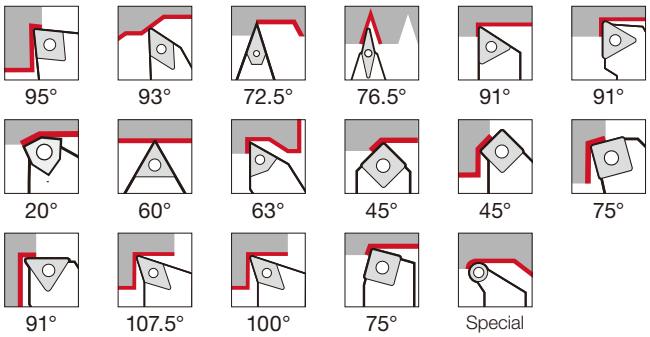
★ Lineup for inserts, endmill heads, and solid tools

Blank : Please contact us regarding the product.

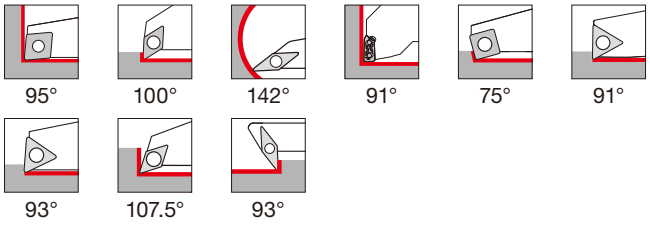
About Tungaloy Cutting Tool Catalog

Icons at the left side of each page

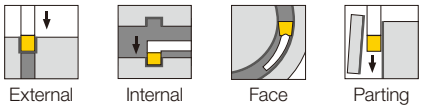
External toolholder (cutting edge shape / angle)



Internal toolholder (cutting edge shape / angle)



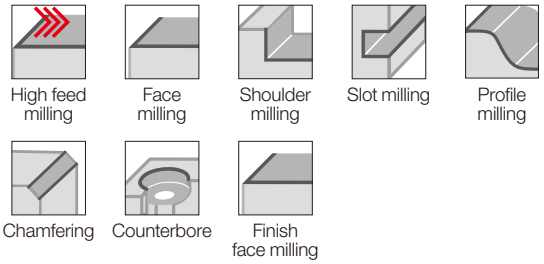
Parting, Grooving



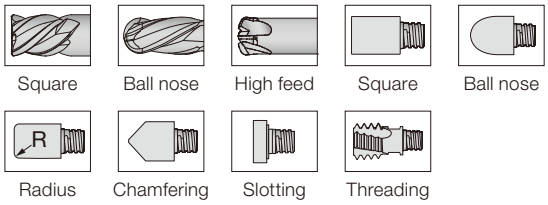
Miniature machining



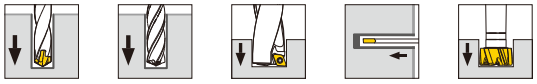
Mill



Endmill

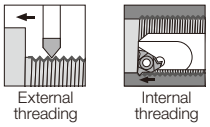


Drill

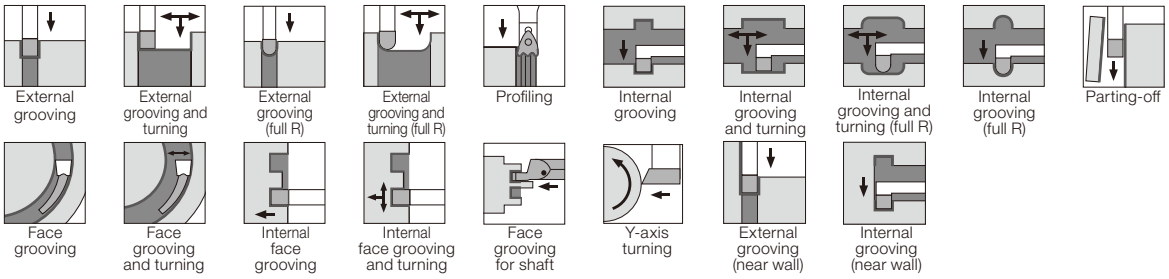


Icons for applications of each product

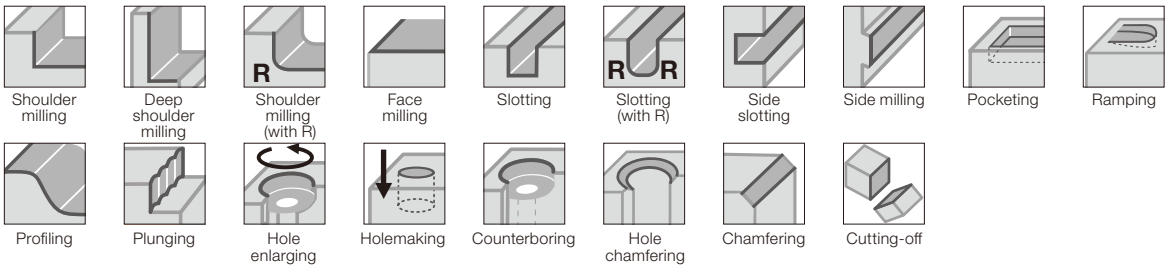
Threading



Grooving



Milling



Drilling



About the dimension symbols conforming to ISO13399

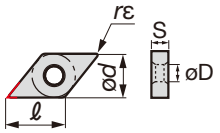
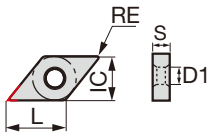
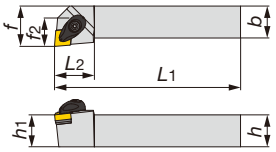
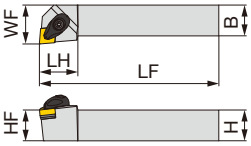
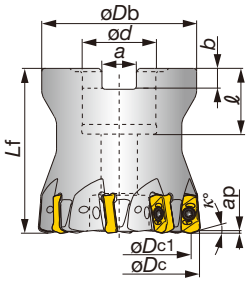
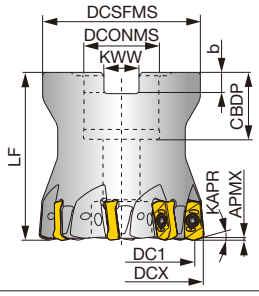
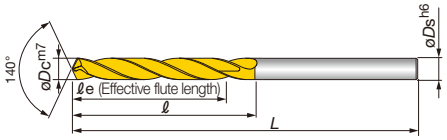
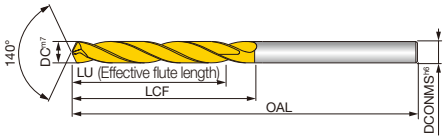
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard.
Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition to General Catalog (paper catalog), we are also updating the symbols in e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. *ap*	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	*ød*1	Mounting hole diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DMIN	*øDm*	Minimum machining diameter
EPSR	-	Nose angle
GAN	-	Rake angle (insert)
IC	*ød*	Inscribed circle diameter
INSD	A	Insert diameter (round type)
INSL	B	Insert length
KAPR	κ	Approach angle
LBB	-	Chipbreaker width
LE	A	Effective cutting edge length
LF	*L*1	Standard length
M	m	Distance from inscribed circle to cutting edge (m dimension)
PDX	t	Thread position (X direction)
PDY	*ℓ*3	Thread position (Y direction)
PNA	*θ*	Cutting edge angle
PSIRL	*θ*	Left-hand front cutting edge angle
PSIRR	*θ*	Right-hand front cutting edge angle
RE	*r*	Corner radius
S	T	Thickness
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	*øD*1, *øD*2, *øD*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	*øD*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	*øD*m	Minimum diameter in face grooving
DAXX	*øD*max	Maximum diameter in face grooving
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød*2	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	*θ*	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	*β*	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

About the dimension symbols conforming to ISO13399

Tooling system

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
BTED	*ød1*	Taper tip diameter
CRKS	S	Mounting screw size
DBC	*ød3*	Bolt hole pitch diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α, R.R.	Radial rake angle
GAMP	*θ*, A.R.	Axial rake angle
KAPR	κ	Cutting edge angle
LB	*L2*, *L3*	Body length
LF	*L*	Standard length
LPR	*L1*	Parting length
LS	*ℓs*	Shank length
LSC	*Lmin*	Clamp length
LSCX	*Lmax*	Maximum clamp length
OAH	H4	Overall height
OAL	*L*	Overall length
OAW	*W*	Overall width
THID	-	Mounting screw size
WB	*W*	Body width
WF	*f*	Standard width

Drilling

New symbol	Old symbol	Description
BD	*øD1*, *øD2*, *øD3*	Body external diameter
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CRKS	*S*	Mounting screw size
DC	*øDc*	Machining diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øD*	Connecting part diameter
KAPR	κ	Cutting edge angle
LCF	*ℓ*	Flute length
LF	*Lf*	Standard length (from the drill shoulder)
LPR	-	Parting length (from flange to tip)
LS	*ℓs*	Shank length
LU	*ℓ*	Machinable depth
NOF	z	Number of flutes
OAL	*L*	Overall length (from tip)
PL	PL	Distance from drill tip to shoulder
ZEFP	Z eff	Number of effective cutting edges on periphery

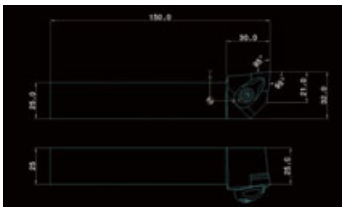
Milling

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
CBDP	*ℓ*	Mounting hole depth
CDX	Max. *ae*	Maximum slot width
CHW	k	Chamfer width on the corner
CICT	z	Number of inserts
CRKS	S	Mounting screw size
CW	W	Slotting edge width
CWN	-	Minimum slotting edge width
CWX	-	Maximum slotting edge width
DBC	*ød3*	Bolt hole pitch diameter
DC	*øDc*	Machining diameter
DCONMS	*ød*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øDb*	Mounting surface diameter on the machine
DCX	*øDc1*	Maximum machining diameter
GAMF	R.R.	Radial rake angle
GAMP	A.R.	Axial rake angle
H	T	Width across flat
KAPR	κ	Cutting edge angle
KWW	*a*	Drive key width
LF	*Lf*	Standard length
LH	*Lf*	Neck length
LS	*ℓs*	Shank length
NOF	z	Number of flutes
OAL	*L*, *L6*	Overall length
PDX	*t*	Thread position (X direction)
PNA	*θ*	Cutting edge angle
PSIR	*β*	Lead angle
RMPX	*θ*	Maximum ramping angle
THUB	T	Hub height (slot mill)
WT	Kg	Weight
ZEFP	Z eff	Number of effective cutting edges on the periphery

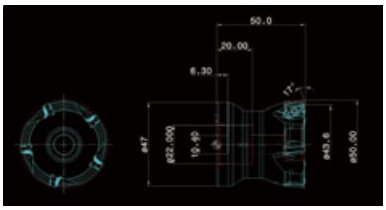
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● 2D data (DXF format file)



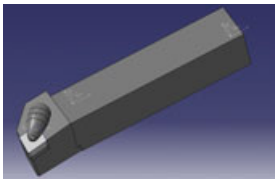
Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● 3D data Light type (STP format file): Can be used to check tool path and interference.

Turning: Equipped with an insert with a standard corner radius.

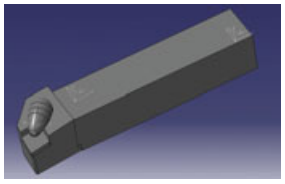


Milling: A rotating body model of an actual cutting edge curve and a body cross section.



● 3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on a CAD software.)

Turning



Milling



Milling Cutter



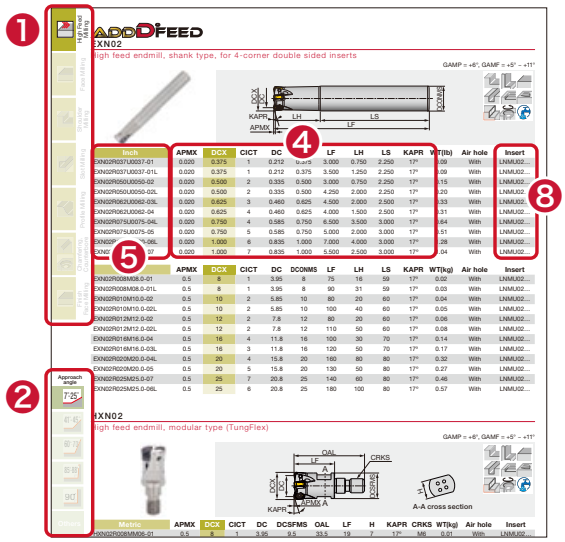
Milling Cutter - Content structure

- Products are listed by application.
- Please refer the table of contents and the icons.

How to use the page

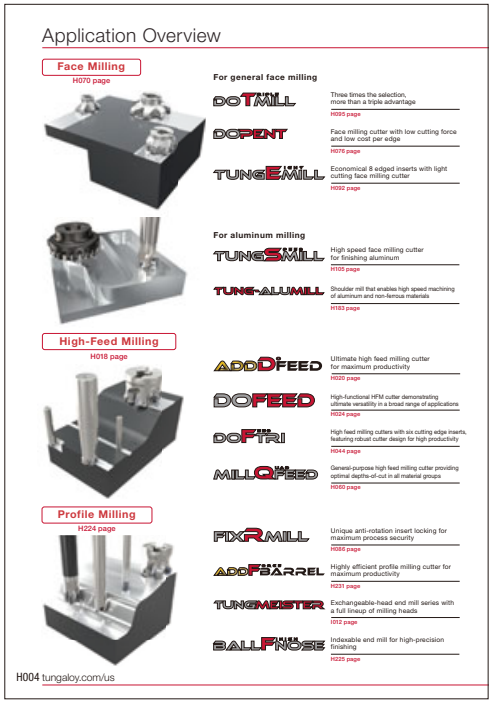
Method ①

Select the application (❶) and the approach angle (❷) at the left end of each page and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❽).



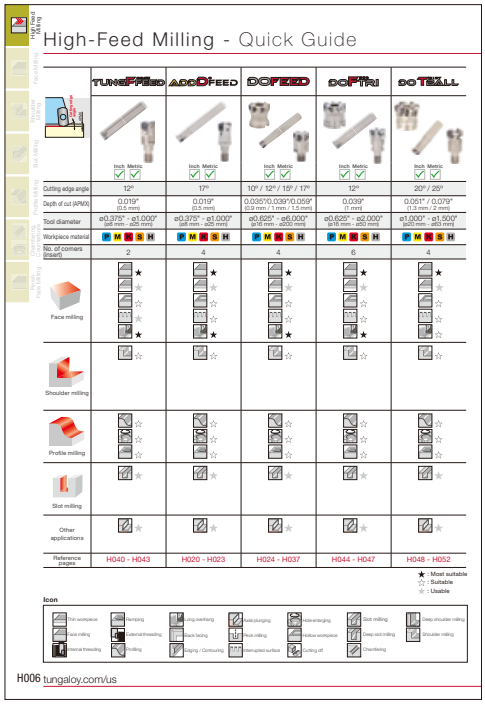
Method ②

Select the tool series name on H004 – H005 and check the details on the product page.



Method ③

Select the tool series or the tool specification on H006 - H017 and see the details on each page.



Icon

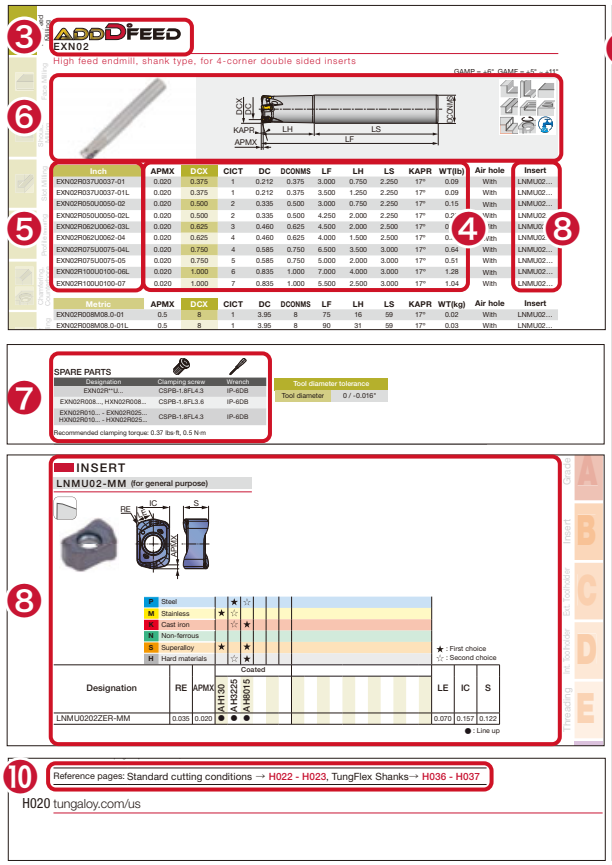
Approach angle

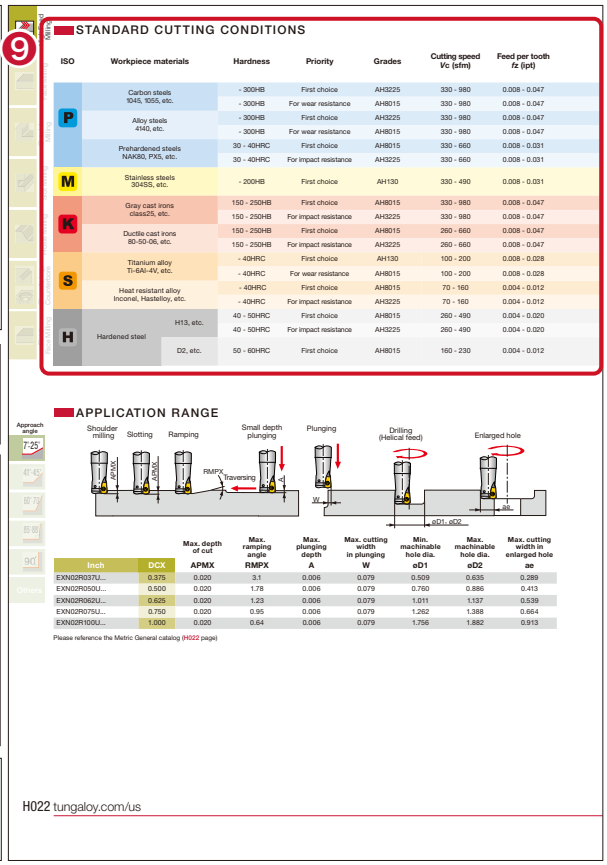
7°-25°	7° ~ 25°
41°-45°	41° ~ 45°
60°-70°	60° ~ 70°
85°-88°	85° ~ 88°
90°	90°

Application

Thin workpiece	Deep shoulder milling
Ramping	Face milling
Long overhang	External threading
Axial plunging	Back facing
Hole enlarging	Peck milling
Slot milling	Hollow workpiece
	Deep slot milling

Shoulder milling	
Internal threading	
Profiling	
Edging / Contouring	
Interrupted surface	
Cutting off	
Chamfering	





❶ : Application
❷ : Approach angle
❸ : Tool series name
❹ : Dimension table
❺ : Mill designation
❻ : Dimension drawing (conforming to ISO13399)
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference page

Coolant hole

Workpiece material

- P Steel
- M Stainless
- K Cast iron
- N Non-ferrous
- S Superalloys
- H Hard material

When ordering
- Please specify the designation and quantity for mills.
  e.g. **TPW13R200U0075A03** ... 1 (one mill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **SWMT1304PDPR-MJ AH120** ... 10 (10 inserts per package)

*You will find a note if the number per package is not 10.

Application Overview

Face Milling

H070 page



For general face milling

DOTRIPLEMILL

Three times the selection, more than a triple advantage

H095 page

DOPENT

Face milling cutter with low cutting force and low cost per edge

H076 page

TUNGEIGHTMILL

Economical 8 edged inserts with light cutting face milling cutter

H092 page



For aluminum milling

TUNGSPEEDMILL

High speed face milling cutter for finishing aluminum

H105 page

TUNG-ALUMILL

Shoulder mill that enables high speed machining of aluminum and non-ferrous materials

H183 page

High-Feed Milling

H018 page



ADDODFEED

Ultimate high feed milling cutter for maximum productivity

H020 page

DOFEED

High-functional HFM cutter demonstrating ultimate versatility in a broad range of applications

H024 page

DOFEEDTRI

High feed milling cutters with six cutting edge inserts, featuring robust cutter design for high productivity

H044 page

MILLQUADFEED

General-purpose high feed milling cutter providing optimal depths-of-cut in all material groups

H060 page

Profile Milling

H224 page



FIXRMILL

Unique anti-rotation insert locking for maximum process security

H086 page

ADDFORCEBARREL

Highly efficient profile milling cutter for maximum productivity

H231 page

TUNGMEISTER

Exchangeable-head end mill series with a full lineup of milling heads

I012 page

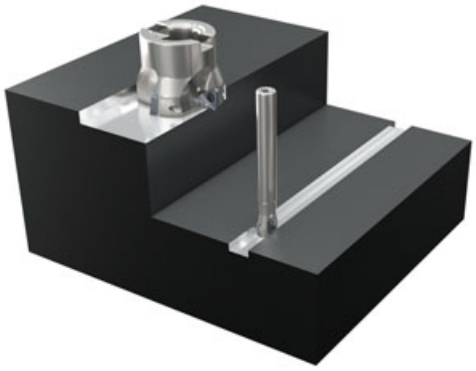
BALLFINISHNOSE

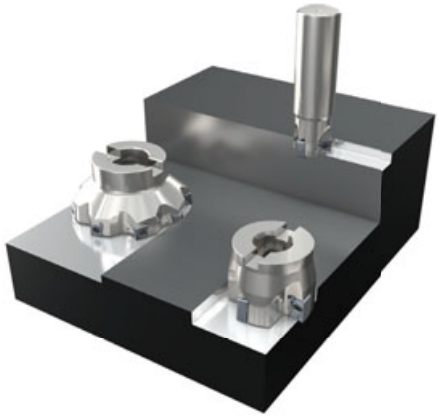
Indexable end mill for high-precision finishing

H225 page

Shoulder Milling

H134 page





Shoulder milling cutters (with single-sided inserts)

TUNG-TRI
Offers a vast range of cutter diameters, insert grades and sizes. Insert features three economical cutting edges
H146 page

TUNGFORCEREC
Unique V shape inserts allow extremely aggressive cutting parameters
H136 page

Shoulder milling cutters (with double-sided inserts)

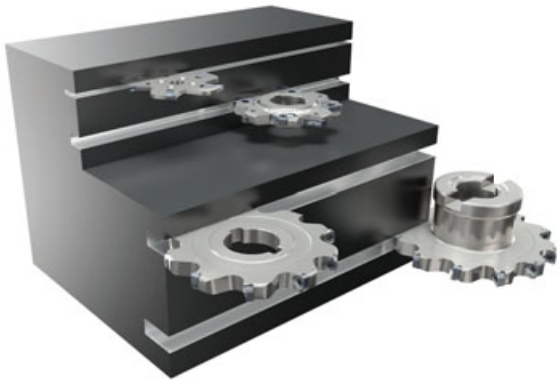
DOFORCETRI
Rigid cutter body and double-sided six-edged inserts enable aggressive parameters and cost efficiency
H171 page

DOREC
Double-sided inserts with four cutting edges for maximum tool economy and productivity
H175 page

TECMILL
Exceptionally reliable tangential inserts for aggressive machining
H189 page

Other Applications

H210 page



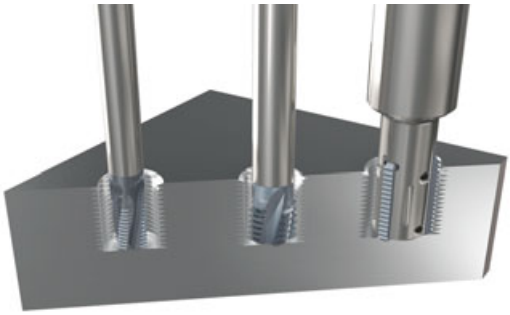
Slot Milling

TUNGMINISLIT
Provides stable slot milling operation with excellent chip control
H211 page

TUNGTHINSLIT
Enables deep slot milling with excellent tool economy
H215 page

TUNGUNIVERSALSLOT
Double-sided insert with six cutting edges for reduced cost per edge
H217 page

TECTANGENTIALSLOT
Incorporates tangential inserts for excellent tool reliability
H220 page



Thread Milling

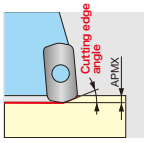
THREADMILLING
Various types of threads can be machined with a single tool simply by changing the inserts
I074 page

TUNGMEISTER
Exchangeable-head end mill series with a full lineup of milling heads
I012 page

Thread milling cutter

SOLIDTHREAD
Economical indexable thread milling cutter series
I057 page

High-Feed Milling - Quick Guide

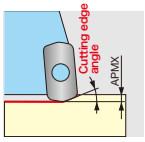


	TUNGFEED	ADDDFEED	DOFEED	DOFTRI	DO TWIST BALL
	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓
Cutting edge angle	12°	17°	10° / 12° / 15° / 17°	12°	20° / 25°
Depth of cut (APMX)	0.019" (0.5 mm)	0.019" (0.5 mm)	0.035"/0.039"/0.059" (0.9 mm / 1 mm / 1.5 mm)	0.039" (1 mm)	0.051" / 0.079" (1.3 mm / 2 mm)
Tool diameter	ø0.375" - ø1.000" (ø8 mm - ø25 mm)	ø0.375" - ø1.000" (ø8 mm - ø25 mm)	ø0.625" - ø6.000" (ø16 mm - ø200 mm)	ø0.625" - ø2.000" (ø16 mm - ø50 mm)	ø1.000" - ø1.500" (ø20 mm - ø63 mm)
Workpiece material	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners (insert)	2	4	4	6	4
Face milling	★ ★ ☆ ★ ★	★ ★ ☆ ☆ ★	★ ★ ☆ ☆ ★	★ ★ ☆ ☆ ★	★ ★ ☆ ☆ ☆
Shoulder milling	☆	☆	☆	☆	☆
Profile milling	☆ ☆ ☆	☆ ☆ ☆	☆ ☆ ☆	☆ ☆ ☆	☆ ☆ ☆
Slot milling	★	★	★	★	★
Other applications	★	★	★	★	★
Reference pages	H040 - H043	H020 - H023	H024 - H037	H044 - H047	H048 - H052

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece, Face milling, Internal threading, Ramping, External threading, Profiling, Long overhang, Back facing, Edging / Contouring, Axial plunging, Peck milling, Interrupted surface, Hole enlarging, Hollow workpiece, Cutting off, Slot milling, Deep slot milling, Chamfering, Deep shoulder milling, Shoulder milling

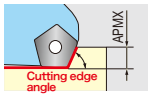
	MILLFEED TXP	MILLQFEED UAD	DOFEEDQUAD
			
	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓
Cutting edge angle	10° / 15° / 20°	7° / 10° / 12° / 14°	13°
Depth of cut (APMX)	0.060" / 0.118" (1.5 mm / 3 mm)	0.039" / 0.059" / 0.079" / 0.098" (1 mm / 1.5 mm / 2 mm / 2.5 mm)	0.079" (2 mm)
Tool diameter	ø0.750" - ø2.000" (ø20 mm - ø160 mm)	ø1.000" - ø6.000" (ø25 mm - ø160 mm)	ø2.000" - ø6.000" (ø50 mm - ø125 mm)
Workpiece material	P M K S H	P M K S H	P M K S H
No. of corners (insert)	3	4	8
Face milling	★ ★ ☆ ★ ★	★ ★ ☆ ★ ★	★ ★ ☆ ★ ☆
Shoulder milling	☆	☆	☆
Profile milling	☆ ☆ ☆	☆ ☆ ☆	
Slot milling	★	★	
Other applications	★	★	
Reference pages	H053 - H059	H060 - H066	H067 - H069

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

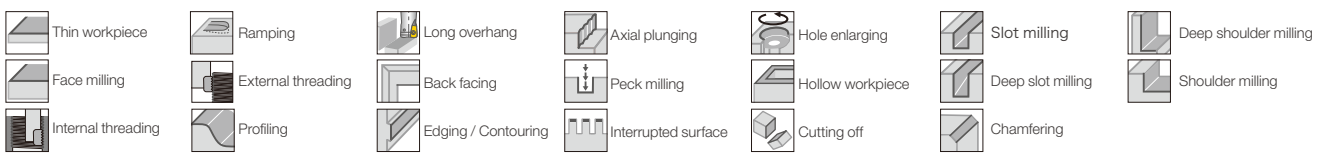
Thin workpiece, Face milling, Internal threading, Ramping, External threading, Profiling, Long overhang, Back facing, Edging / Contouring, Axial plunging, Peck milling, Interrupted surface, Hole enlarging, Hollow workpiece, Cutting off, Slot milling, Deep slot milling, Chamfering, Deep shoulder milling, Shoulder milling

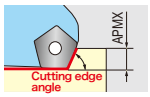
Face Milling - Quick Guide

	TUNGMILL	DOPENT	ROUNDSPLIT	FIXRMILL	TUNGEMILL
					
	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓
Cutting edge angle	45°	70°			41°
Depth of cut (APMX)	0.197" / 0.098" / 0.079" (5 mm / 4 mm / 2 mm)	0.252" (6.4 mm)	0.236" / 0.315" (6 mm / 8 mm)	0.197" / 0.236" / 0.315" (5 mm / 6 mm / 8 mm)	0.118" (3 mm)
Tool diameter	ø2.000" - ø6.000" (ø25 mm - ø200 mm)	ø1.250" - ø10.000" (ø32 mm - ø315 mm)	ø1.250" - ø5.000" (ø32 mm - ø125 mm)	ø1.000" - ø2.500" (ø20 mm - ø80 mm)	ø2.000" - ø6.000" (ø50 mm - ø160 mm)
Workpiece material	P M K N	P M K N S H	P M K N S	P M K S H	P M K S H
No. of corners (insert)	4	10	4 / 8	6 / 8	8
Face milling	★ ★ ★ ★	★ ★ ☆ ☆	☆ ☆ ★	☆ ☆ ☆	★ ★ ★ ★
Shoulder milling			☆	☆	
Profile milling			★ ☆ ☆	★ ☆ ☆	
Slot milling			☆	☆	
Other applications	☆		★	★	
Reference pages	H071 - H075	H076 - H080	H081 - H085	H086 - H091	H092 - H094

★ : Most suitable
☆ : Suitable
★ : Usable

Icon



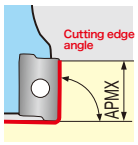
	DO TRIPLE MILL	DOOCTO	TUNGSMILL TPYP	TUNGSMILL T/EPYD	TFE
Cutting edge angle / APMX					
	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ☐ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓
Cutting edge angle	45°	45° / 15°	90°	90°	85.5°
Depth of cut (APMX)	0.134" / 0.236" (6 mm / 3.4 mm)	0.059" / 0.138" / 0.187" / 0.295" (4.75 mm / 7.5 mm / 3.5 mm / 1.5 mm)	4 mm / 11 mm	0.177" / 0.295" (4.5 mm / 7.5 mm)	0.315" / 0.138" / 0.059" (8 mm / 3.5 mm / 1.5 mm)
Tool diameter	ø2.000" - ø6.000" (ø50 mm - ø160 mm)	ø2.300" - ø8.000" (ø63 mm - ø315 mm)	ø50 mm - ø125 mm	ø2.000" - ø6.000" (ø50 mm - ø160 mm)	ø2.000" - ø4.000" (ø50 mm - ø25 mm)
Workpiece material	P M K S H	P M K S H	N	N	P M K N
No. of corners (insert)	8 / 16	8 / 16	1 / 2	1	4 / 1 / 2
Face milling	★ ☆ ★ ★	★ ☆ ★ ★	★ ★ ☆ ☆	★ ★ ★ ☆	★ ★ ★ ☆
Shoulder milling			★	★	
Profile milling	★				
Slot milling					
Other applications	☆	☆			
Reference pages	H095 - H098	H099 - H104	H108 - H109	H105 - H107	H110 - H113

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece	Ramping	Long overhang	Axial plunging	Hole enlarging	Slot milling	Deep shoulder milling
Face milling	External threading	Back facing	Peck milling	Hollow workpiece	Deep slot milling	Shoulder milling
Internal threading	Profiling	Edging / Contouring	Interrupted surface	Cutting off	Chamfering	

Shoulder milling - Quick Guide

	TUNGFREC	TUNG-TRI		TUNGREC	
			Roughing		Roughing
	 Inch Metric ✓ ✓	 Inch Metric ✓ ✓	 Inch Metric ✓ ✓	 Inch Metric ✓ ✓	 Inch Metric ✓ ✓
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	0.016" / 0.031" / 0.079" (4 mm / 6 mm / 11.5 mm)	0.236" / 0.394" / 0.590" (3.5 mm / 6 mm / 10 mm / 15 mm)	2.126" - 3.268" (54 mm - 97 mm (-139 mm)	0.276" / 0.657" / 0.417" (7 mm / 10.6 mm / 16.7 mm)	1.197" - 1.921" (30.4 mm - 48.8 mm)
Tool diameter	ø0.313" - ø2.000" (ø6 mm - ø63 mm)	ø0.500" - ø6.000" (ø8 mm - ø160 mm)	ø2.000" - ø4.000" (ø50 mm - ø100 mm)	ø0.500" - ø6.000" (ø12 mm - ø160 mm)	ø1.000" - ø2.000" (ø25 mm - ø50 mm)
Workpiece material	P M K N S H	P M K N S H	P M K N S	P M K N S H	P M K N S H
No. of corners (insert)	2	3	3	2	2
Face milling	★ ☆ ★ ☆ ☆	★ ★ ☆ ☆ ☆	★ ★ ★ ☆ ☆	☆ ☆ ☆ ★ ★	★ ★ ★ ★ ★
Shoulder milling	★ ★ ★	★ ★ ☆	★ ★ ★	★ ☆ ★	★ ☆ ★
Profile milling	★ ☆ ☆	★ ★ ☆	★ ★ ★	★ ☆ ★	★ ★ ★
Slot milling	★ ★	★ ★		☆ ☆	
Other applications	★	★		★	
Reference pages	H136 - H144	H146 - H156		H157 - H168	

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece · Face milling · Internal threading · Ramping · External threading · Profiling · Long overhang · Back facing · Edging / Contouring · Axial plunging · Peck milling · Interrupted surface · Hole enlarging · Hollow workpiece · Cutting off · Slot milling · Deep slot milling · Chamfering · Deep shoulder milling · Shoulder milling

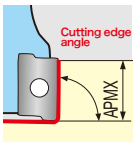
	TUNGQUAD		DOFTRI	DOREC	TUNGSMILL EPYP
	 Inch ✓ Metric ✓	Roughing  Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ☐ Metric ✓
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	0.157" (4 mm)	0.799" - 0.953" (20.3 mm - 24.2 mm)	0.256" / 0.433" (6.5 mm / 11 mm)	0.345" / 0.630" (9 mm / 16 mm)	4 mm / 11 mm
Tool diameter	ø0.500" - ø1.000" (ø12 mm - ø40 mm)	ø0.750" - ø1.000" (ø20 mm - ø25 mm)	ø0.750" - ø1.500" (ø18 mm - ø160 mm)	ø1.000" - ø6.000" (ø25 mm - ø160 mm)	ø25 mm - ø32 mm
Workpiece material	P M K N S H	P M K N S H	P M K S	P M K S H	N
No. of corners (insert)	4	4	6	4	1 / 2
Face milling	★ ☆ ☆ ☆ ☆	★ ☆ ☆ ☆ ☆	★ ☆ ☆ ☆ ☆	★ ☆ ☆ ★ ☆	★ ★ ☆ ☆
Shoulder milling	★ ☆ ☆	★ ☆ ★	★ ☆ ☆	★ ☆ ☆	★
Profile milling				☆ ☆ ☆	
Slot milling	☆ ☆		☆ ☆	☆ ☆	
Other applications	☆		☆	☆	
Reference pages	H169 - H170		H171 - H174	H175 - H179	H180

★ : Most suitable
☆ : Suitable
☆ : Usable

Icon

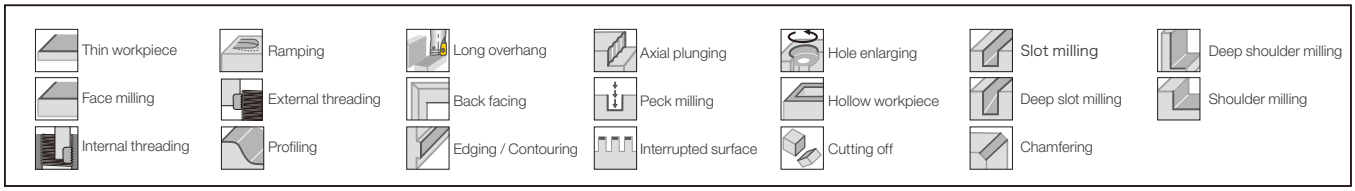
Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Deep slot milling
Chamfering
Deep shoulder milling
Shoulder milling

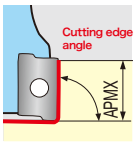
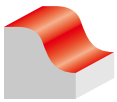
Shoulder milling - Quick Guide

	DOQMILL	TECMILL		TUNGTSHRED	
			Roughing		Roughing
					
	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓
Cutting edge angle	88°	90° / 60°	90°	90°	90°
Depth of cut (APMX)	0.375" (9.5 mm)	0.381" / 0.594" (9.7 mm / 15.1 mm / 12.4 mm)	2.303" / 2.634" (58.5 mm / 66.9 mm)	0.630" (16 mm)	2.402" / 2.992" (61 mm / 76 mm)
Tool diameter	ø2.000" - ø4.000" (ø50 mm - ø100 mm)	ø2.000" - ø5.000" (ø32 mm - ø250 mm)	ø2.000" - ø2.500" (ø50 mm - ø63 mm)	ø2.000" - ø4.000" (ø50 mm - ø100 mm)	ø2.500" - ø3.000" (ø63 mm - ø80 mm)
Workpiece material	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners (insert)	8	4	4	3	3
Face milling	★ ★ ☆ ☆	★ ★ ☆ ★ ☆	★ ★ ★ ★ ☆	☆ ★ ★ ☆ ★	★ ★ ★ ☆ ★
Shoulder milling		★ ☆ ★	★ ☆ ☆	★ ★ ☆	☆ ★ ☆
Profile milling					
Slot milling				★ ★	★ ★
Other applications		☆			
Reference pages	H181 - H182	H189 - H196		H197 - H200	

★ : Most suitable
☆ : Suitable
★ : Usable

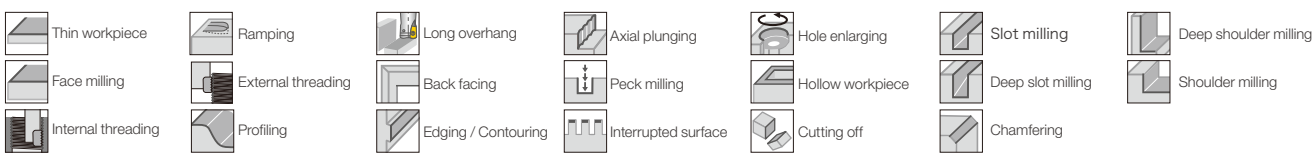
Icon



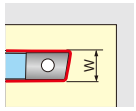
	TUNG-ALUMILL
	 Inch ✓ Metric ✓
Cutting edge angle	90°
Depth of cut (APMX)	0.630" / 0.571" (13 mm / 16 mm)
Tool diameter	ø1.000" - ø5.000" (ø25 mm - ø125 mm)
Workpiece material	N
No. of corners (insert)	2
 Face milling	★ ★ ★ ★ ☆
 Shoulder milling	★ ★ ★
 Profile milling	★ ★ ★
 Slot milling	★ ★
Other applications	☆
Reference pages	H183 - H188

★ : Most suitable
☆ : Suitable
★ : Usable

Icon



Slot milling - Quick Guide

	TUNGMSLIT	TUNGTSLIT	TUNGUSLOT	TECTSLOT
				
	Inch ☐ Metric ☑	Inch ☑ Metric ☑	Inch ☑ Metric ☑	Inch ☐ Metric ☑
Depth of cut (APMX)	1.6 mm - 4.1 mm	0.250" - 0.313" (4 mm - 8 mm)	0.375" - 0.625" (9 mm - 16 mm)	16 mm - 25 mm
Tool diameter	ø63 mm - ø12 mm	ø3.000" - ø8.000" (ø80 mm - ø200 mm)	ø3.000" - ø6.000" (ø80 mm - ø160 mm)	ø100 mm - ø250 mm
Workpiece material	P M K	P M K S	P M K S	P M K S
No. of corners (insert)	1	6	6	4
Face milling	★ ★ ★ ★ ★	★ ★ ★ ★ ★	★ ★ ★ ★ ☆	☆ ★ ★ ★ ☆
Shoulder milling	★ ★	★ ★	☆ ☆ ★	☆ ☆ ★
Profile milling				
Slot milling	★ ★	★ ★	★ ★	★ ★
Other applications				
Reference pages	H211 - H214	H215 - H216	H217 - H219	H220 - H222

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Deep slot milling
Chamfering
Deep shoulder milling
Shoulder milling

Profile milling - Quick Guide

	BALL FINISH NOSE	ADD FORCE BARREL	DO MINI MILL	BALL ROUGH NOSE	DO TWIST BALL
	 Inch ✓ Metric ✓	 Inch ☐ Metric ✓	 Inch ☐ Metric ✓	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓
Depth of cut (APMX)	0.492" (12.5 mm)	-	1	0.470" / 0.510" / 0.690" (11.8 mm / 13.6 mm / 17.7 mm)	0.157" / 0.236" (4 mm / 5 mm / 6 mm)
Tool diameter	ø0.375" - ø1.250" (ø8 mm - ø32 mm)	ø16 mm - ø40 mm	ø16 mm - ø25 mm	ø0.625" - ø1.000" (ø16 mm - ø25 mm)	ø1.000" - ø1.500" (ø20 mm - ø63 mm)
Workpiece material	P M K S H	P M K S H	P H	P M K S H	P M K S H
No. of corners (insert)	1	4	6	2	4
Face milling	★ ★ ☆		★ ★ ☆	★ ☆ ☆	★ ☆ ☆
Shoulder milling	☆		☆	☆	★
Profile milling	★ ☆ ☆	★	★ ☆ ☆	★ ☆ ☆	★ ★ ☆
Slot milling	★		★	★	☆
Other applications	★		☆	★	★
Reference pages	H225 - H230	H231 - H232	H233	H234 - H235	H048 - H052

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece, Face milling, Internal threading, Ramping, External threading, Profiling, Long overhang, Back facing, Edging / Contouring, Axial plunging, Peck milling, Interrupted surface, Hole enlarging, Hollow workpiece, Cutting off, Slot milling, Deep slot milling, Chamfering, Deep shoulder milling, Shoulder milling

Chamfering and Counterboring - Quick Guide

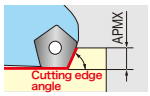
	Chamfering cutter TUNGQUAD	Chamfering cutter ECP	Chamfering cutter ECC	Counterboring endmill TCB	DOMULTIREC
					
	Inch ☐ Metric ☑	Inch ☑ Metric ☑	Inch ☑ Metric ☑	Inch ☐ Metric ☑	Inch ☑ Metric ☑
Cutting edge angle	45°	45°	30°, 45°, 60°	90°	90°
Depth of cut (APMX)	3 mm	0.236" (6 mm)	0.571" / 0.807" / 1.004" (14.5 mm / 20.5 mm / 25.5 mm)	4 mm / 5 mm / 6 mm 8 mm / 10 mm	0.197" / 0.276" / 0.354" 0.433" / 0.571" / 0.709" (5 mm / 7 mm / 9 mm / 11 mm 14.5 mm / 18 mm)
Tool diameter	ø12 mm - ø22 mm	ø0.394" - ø1.417" (ø27.5 mm - ø36 mm)	ø1.338" - ø2.204" (ø34 mm - ø55 mm)	ø10 mm - ø59 mm	ø0.500" - ø1.500" (ø16 mm - ø26 mm)
Workpiece material	P M K N S	P K	P M K	P M K N S H	P M K S H
No. of corners (insert)	4	4	2	4	4
Face milling					☆ ☆ ★ ☆ ★
Shoulder milling					☆ ☆ ☆
Profile milling					☆ ★ ★
Slot milling					☆ ☆
Other applications	★	★	★	★	★ ★
Reference pages	H244 - H247	H247	H248 - H249	H250 - H254	H255 - H258

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

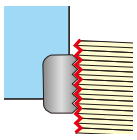
Thin workpiece · Face milling · Internal threading · Ramping · External threading · Profiling · Long overhang · Back facing · Edging / Contouring · Axial plunging · Peck milling · Interrupted surface · Hole enlarging · Hollow workpiece · Cutting off · Slot milling · Deep slot milling · Chamfering · Deep shoulder milling · Shoulder milling

Face Milling - Quick Guide

	NMS	MS	SFP
			
	Inch ☐ Metric ☑	Inch ☐ Metric ☑	Inch ☐ Metric ☑
Cutting edge angle	-	-	-
Depth of cut (APMX)	0.2 mm	0.1 mm	0.1 mm
Tool diameter	ø80 mm - ø200 mm	ø100 mm - ø300 mm	ø100 mm - ø200 mm
Workpiece material	P M K	P H	P M K N
No. of corners (insert)	4		
 Face milling	★ ☆ ★ ☆	★ ☆ ★ ☆	★ ☆ ★ ☆
Reference pages	H264 - H265	H266 - H267	H267 - H268

★ : Most suitable
☆ : Suitable
★ : Usable

Thread milling - Quick Guide

	SOLIDTHREAD	TUNGMEISTER	THREADMILLING ETTL	THREADMILLING Thread milling cutter
				
	Inch ☐ Metric ☑	Inch ☐ Metric ☑	Inch ☐ Metric ☑	Inch ☐ Metric ☑
Pitch	0.25 mm - 3.5 mm	0.5 mm - 4.5 mm	1.5 mm - 3 mm	1.5 mm - 6 mm
Tool diameter	ø0.7 mm - ø20 mm	ø10 mm - ø21.7 mm	ø17 mm - ø30 mm	ø23 mm - ø80 mm
Workpiece material	P M K S	P M K S	P M K S	P M K
No. of corners (insert)	-	-	2	2
Thread milling	★ ★	★ ★	★ ★	★ ★
Reference pages	I057 - I073	I012 - I055	I074 - I077	I078 - I079

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece, Face milling, Internal threading, Ramping, External threading, Profiling, Long overhang, Back facing, Edging / Contouring, Axial plunging, Peck milling, Interrupted surface, Hole enlarging, Hollow workpiece, Cutting off, Slot milling, Deep slot milling, Chamfering, Deep shoulder milling, Shoulder milling

ADDDFEED/DOFEED



Ultimate high feed milling cutter series for maximum productivity

ADDDFEED

Insert size 02



Max. depth of cut: 0.020" (0.5 mm)
Tool diameter: ø0.375" - ø1.000", ø8 - ø25 mm

- ✓ Tool diameters as small as **8 mm (0.315")**
- ✓ **Highly reliable design**
- ✓ Perfect option for **replacing solid end mills**

DOFEED

Insert size 03



Max. depth of cut: 0.035" (0.9 mm) (UER),
0.039" (1 mm) (ZER)
Tool diameter: ø0.625" - ø2.000", ø16 - ø50 mm

- ✓ **Close pitch cutter design** for high productivity
- ✓ **Extensive lineup** for various applications
- ✓ **New UER inserts with lower approach angle for longer tool life and reduced chatter**

DOFEED

Insert size 06



Max. depth of cut: 0.059" (1.5 mm)
Tool diameter: ø1.250" - ø6.000", ø32 - ø200 mm

- ✓ **Close pitch cutter design** for high productivity
- ✓ Tool diameters available for up to 200 mm (7.874"), ideal for **rough milling of medium- and large-sized components**
- ✓ **Wiper inserts** for improved surface roughness

Inch

Tool diameters and number of teeth for each insert size

Insert size	Max. depth of cut (in)	Workpiece material	Tool diameter (in), Number of teeth														
			ø0.375"	ø0.500"	ø0.625"	ø0.688"	ø0.750"	ø0.875"	ø1.000"	ø1.125"	ø1.250"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"	ø6.000"
02	0.020"	P M K S H	1	2	3, 4		4, 5		6, 7									
03	0.035" (UER) 0.039" (ZER)	P M K S H			2	2	2, 3	2, 3	4, 5	4, 5	5, 6	5, 6	5, 8, 10					
06	0.059"	P M K S H									2	3	4, 5	4, 6	5, 7	6, 10	8, 12	10, 14

Metric

Tool diameters and number of teeth for each insert size

Insert size	Max. depth of cut (mm)	Workpiece material	Tool diameter (mm), Number of teeth																					
			ø8	ø10	ø12	ø16	ø18	ø20	ø22	ø25	ø28	ø30	ø32	ø35	ø40	ø50	ø52	ø63	ø66	ø80	ø100	ø125	ø160	ø200
02	0.5	P M K S H	1	2	2	4 3		5 4		7 6														
03	0.9 (UER) 1 (ZER)	P M K S H				2	2	4 3	4 3	5 4	5 4	5 4	5 6	5 6	5 6	5 8								
06	1.5	P M K S H											2	2	3	4 5	4 5	4 6	4 6	5 8	6	8	10	12

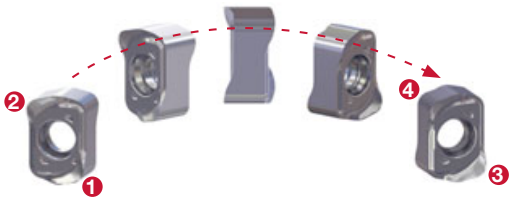
Cutter body design for maximum productivity

Extremely stiff body design with a large core

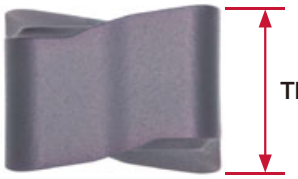


Reliable and economical inserts

Economical double-sided inserts with four cutting edges

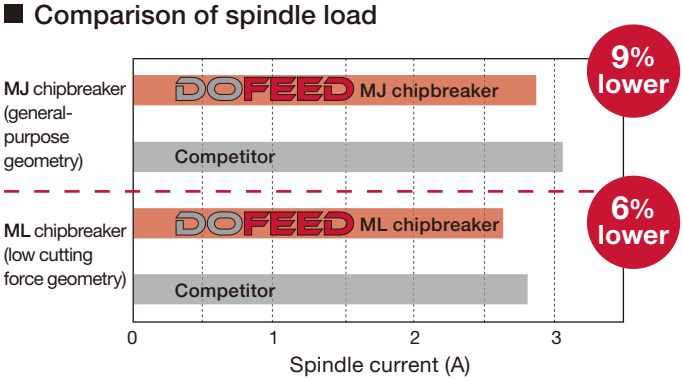


Thick insert design for increased reliability



Soft cutting geometry with superior chip control

Comparison of spindle load



P

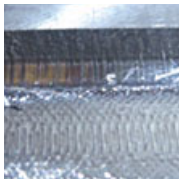
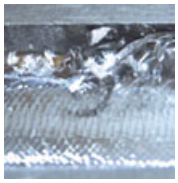
Cutter	: EXN03R100U0100-05 (ø1.000", z = 5)
Insert	: LNMU0303ZER-MJ / ML AH725
Workpiece material	: Carbon steels (1055)
Cutting speed	: *Vc* = 820 sfm
Feed per tooth	: *fz* = 0.020 ipt (1 insert)
Depth of cut	: *ap* = 0.020"
Width of cut	: *ae* = 1.000" (Slot milling)
Coolant	: Dry
Machine	: Vertical M/C, CAT40

Note: Test cut using a single insert

Provides stable, high productivity due to the excellent chip evacuation



Forms compact chips

	DOFEED	Competitor
Chip shapes		
Shoulder surfaces after grooving operations		

Reference pages: H020 - H037

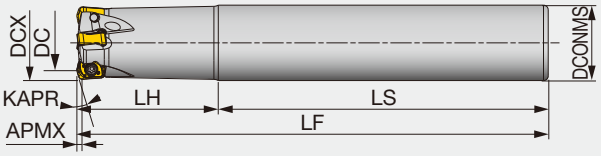
ADDOFEED

EXN02

High feed endmill, shank type, for 4-corner double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°







Inch	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	WT(lb)	Air hole	Insert
EXN02R037U0037-01	0.020	0.375	1	0.212	0.375	3.000	0.750	2.250	17°	0.09	With	LNMU02…
EXN02R037U0037-01L	0.020	0.375	1	0.212	0.375	3.500	1.250	2.250	17°	0.09	With	LNMU02…
EXN02R050U0050-02	0.020	0.500	2	0.335	0.500	3.000	0.750	2.250	17°	0.15	With	LNMU02…
EXN02R050U0050-02L	0.020	0.500	2	0.335	0.500	4.250	2.000	2.250	17°	0.20	With	LNMU02…
EXN02R062U0062-03L	0.020	0.625	3	0.460	0.625	4.500	2.000	2.500	17°	0.33	With	LNMU02…
EXN02R062U0062-04	0.020	0.625	4	0.460	0.625	4.000	1.500	2.500	17°	0.31	With	LNMU02…
EXN02R075U0075-04L	0.020	0.750	4	0.585	0.750	6.500	3.500	3.000	17°	0.64	With	LNMU02…
EXN02R075U0075-05	0.020	0.750	5	0.585	0.750	5.000	2.000	3.000	17°	0.51	With	LNMU02…
EXN02R100U0100-06L	0.020	1.000	6	0.835	1.000	7.000	4.000	3.000	17°	1.28	With	LNMU02…
EXN02R100U0100-07	0.020	1.000	7	0.835	1.000	5.500	2.500	3.000	17°	1.04	With	LNMU02…

Metric	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	WT(kg)	Air hole	Insert
EXN02R008M08.0-01	0.5	8	1	3.95	8	75	16	59	17°	0.02	With	LNMU02…
EXN02R008M08.0-01L	0.5	8	1	3.95	8	90	31	59	17°	0.03	With	LNMU02…
EXN02R010M10.0-02	0.5	10	2	5.85	10	80	20	60	17°	0.04	With	LNMU02…
EXN02R010M10.0-02L	0.5	10	2	5.85	10	100	40	60	17°	0.05	With	LNMU02…
EXN02R012M12.0-02	0.5	12	2	7.8	12	80	20	60	17°	0.06	With	LNMU02…
EXN02R012M12.0-02L	0.5	12	2	7.8	12	110	50	60	17°	0.08	With	LNMU02…
EXN02R016M16.0-04	0.5	16	4	11.8	16	100	30	70	17°	0.14	With	LNMU02…
EXN02R016M16.0-03L	0.5	16	3	11.8	16	120	50	70	17°	0.17	With	LNMU02…
EXN02R020M20.0-04L	0.5	20	4	15.8	20	160	80	80	17°	0.32	With	LNMU02…
EXN02R020M20.0-05	0.5	20	5	15.8	20	130	50	80	17°	0.27	With	LNMU02…
EXN02R025M25.0-07	0.5	25	7	20.8	25	140	60	80	17°	0.46	With	LNMU02…
EXN02R025M25.0-06L	0.5	25	6	20.8	25	180	100	80	17°	0.57	With	LNMU02…

Approach angle

7°-25°

41°-45°

60°-70°

85°-88°

90°

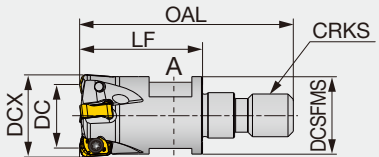
Others

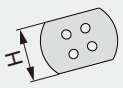
HXN02

High feed endmill, modular type (TungFlex)

GAMP = +6°, GAMF = +5° ~ +11°







A-A cross section



Metric	APMX	DCX	CICT	DC	DCSFMS	OAL	LF	H	KAPR	CRKS	WT(kg)	Air hole	Insert
HXN02R008MM06-01	0.5	8	1	3.95	9.5	33.5	19	7	17°	M6	0.01	With	LNMU02…
HXN02R010MM06-02	0.5	10	2	5.85	9.5	31.5	17	7	17°	M6	0.01	With	LNMU02…
HXN02R012MM06-02	0.5	12	2	7.8	10	31.5	17	7	17°	M6	0.01	With	LNMU02…
HXN02R016MM08-04	0.5	16	4	11.8	14.5	40	23	10	17°	M8	0.03	With	LNMU02…
HXN02R020MM10-05	0.5	20	5	15.8	17.8	49	30	15	17°	M10	0.06	With	LNMU02…
HXN02R025MM12-07	0.5	25	7	20.8	23	52	30	17	17°	M12	0.1	With	LNMU02…

SPARE PARTS





Designation	Clamping screw	Wrench
EXN02R**U...	CSPB-1.8FL4.3	IP-6DB
EXN02R008..., HXN02R008...	CSPB-1.8FL3.6	IP-6DB
EXN02R010... - EXN02R025... HXN02R010... - HXN02R025...	CSPB-1.8FL4.3	IP-6DB

Recommended clamping torque: 0.37 lbs·ft, 0.5 N·m

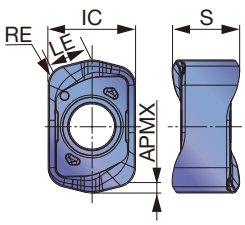
Tool diameter tolerance	
Tool diameter	0 / -0.016"

Reference pages: Standard cutting conditions → H022 - H023, TungFlex Shanks→ H038 - H039

INSERT

LNMU02-MM (for general purpose)





P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloy	★	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH130	Coated AH3225	Coated AH8015	LE	IC	S
LNMU0202ZER-MM	0.035	0.020	●	●	●	0.070	0.157	0.122

● : Line up

Reference pages: Standard cutting conditions → H022 - H023

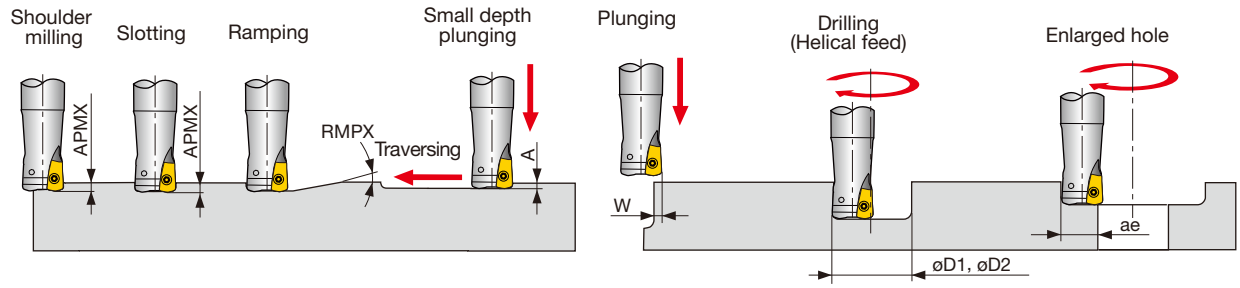
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.		- 300HB	First choice	AH3225	330 - 980	0.008 - 0.047
			- 300HB	For wear resistance	AH8015	330 - 980	0.008 - 0.047
	Alloy steels 4140, etc.		- 300HB	First choice	AH3225	330 - 980	0.008 - 0.047
			- 300HB	For wear resistance	AH8015	330 - 980	0.008 - 0.047
	Prehardened steels NAK80, PX5, etc.		30 - 40HRC	First choice	AH8015	330 - 660	0.008 - 0.031
			30 - 40HRC	For impact resistance	AH3225	330 - 660	0.008 - 0.031
M	Stainless steels 304SS, etc.		- 200HB	First choice	AH130	330 - 490	0.008 - 0.031
K	Gray cast irons class25, etc.		150 - 250HB	First choice	AH8015	330 - 980	0.008 - 0.047
			150 - 250HB	For impact resistance	AH3225	330 - 980	0.008 - 0.047
	Ductile cast irons 80-50-06, etc.		150 - 250HB	First choice	AH8015	260 - 660	0.008 - 0.047
			150 - 250HB	For impact resistance	AH3225	260 - 660	0.008 - 0.047
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH130	100 - 200	0.008 - 0.028
			- 40HRC	For wear resistance	AH8015	100 - 200	0.008 - 0.028
	Heat resistant alloy Inconel, Hastelloy, etc.		- 40HRC	First choice	AH8015	70 - 160	0.004 - 0.012
			- 40HRC	For impact resistance	AH3225	70 - 160	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH8015	260 - 490	0.004 - 0.020
			40 - 50HRC	For impact resistance	AH3225	260 - 490	0.004 - 0.020
		D2, etc.	50 - 60HRC	First choice	AH8015	160 - 230	0.004 - 0.012

APPLICATION RANGE

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXN02R037U...	0.375	0.020	3.1	0.006	0.079	0.509	0.635	0.289
EXN02R050U...	0.500	0.020	1.78	0.006	0.079	0.760	0.886	0.413
EXN02R062U...	0.625	0.020	1.23	0.006	0.079	1.011	1.137	0.539
EXN02R075U...	0.750	0.020	0.95	0.006	0.079	1.262	1.388	0.664
EXN02R100U...	1.000	0.020	0.64	0.006	0.079	1.756	1.882	0.913

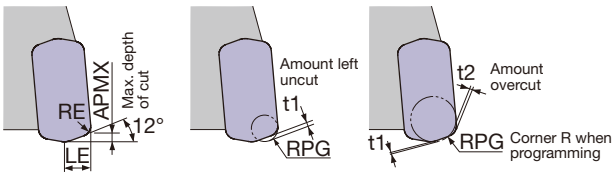
Please reference the Metric General catalog (H022 page)

Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.002", Number of teeth: CICT

ø0.375", CICT = 1		ø0.500", CICT = 2		ø0.625"			ø0.750"			ø1.000"		
n	*Vf*	*n*	*Vf*	*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
					CICT = 3	CICT = 4		CICT = 4	CICT = 5		CICT = 6	CICT = 7
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
4,990	100	3,740	150	3,000	180	240	2,500	200	250	1,870	230	270
					Vc = 490 sfm, *fz* = 0.020 ipt							
4,180	90	3,130	130	2,510	160	210	2,090	170	210	1,570	190	220
					Vc = 410 sfm, *fz* = 0.020 ipt							
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
4,990	140	3,740	210	3,000	260	340	2,500	280	350	1,870	320	370
					Vc = 490 sfm, *fz* = 0.028 ipt							
1,530	40	1,150	50	920	60	80	760	70	80	570	70	80
					Vc = 150 sfm, *fz* = 0.020 ipt							
1,220	10	920	20	730	20	30	610	20	30	460	30	30
					Vc = 120 sfm, *fz* = 0.008 ipt							
3,870	50	2,900	70	2,320	90	120	1,940	100	120	1,450	110	130
					Vc = 380 sfm, *fz* = 0.012 ipt							
2,040	20	1,530	30	1,220	30	40	1,020	40	50	760	40	50
					Vc = 200 sfm, *fz* = 0.008 ipt							

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.030".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.020	0.035	0.079	0.030	0.014	0
0.020	0.035	0.079	0.050	0.008	0.001
0.020	0.035	0.079	0.075	0.001	0.010

*Recommended

DOFEED
EXN03

High feed endmill, shank type

GAMP = +6°, GAMF = +5° ~ +11°



with LNMU0303ZER

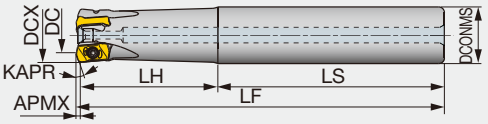


Fig.1 with center through coolant hole

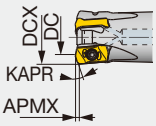


Fig.2 with coolant directly to the tool tips

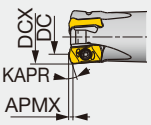
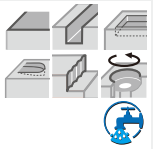


Fig.3 Eco type



Inch	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	DCONMS	LF	LH	LS	KAPR*	KAPR2*	KAPR3*	WT(lb)	Air hole	Insert	Fig.
EXN03R062U0062-02(1)	0.039	0.035	0.039	0.625	2	0.373	0.342	0.381	0.625	4.000	1.250	2.750	15°	10°	15°	0.31	With	LN*U03...	1
EXN03R062U0062-02L(1)	0.039	0.035	0.039	0.625	2	0.373	0.342	0.381	0.625	6.000	2.000	4.000	15°	10°	15°	0.46	With	LN*U03...	1
EXN03R068U0062-02(1)	0.039	0.035	0.039	0.688	2	0.432	0.401	0.436	0.625	4.000	1.250	2.750	17°	12°	17°	0.31	With	LN*U03...	1
EXN03R068U0062-02L(1)	0.039	0.035	0.039	0.688	2	0.432	0.401	0.436	0.625	6.000	1.000	5.000	17°	12°	17°	0.49	With	LN*U03...	1
EXN03R075U0075-02(2)	0.039	0.035	0.039	0.750	2	0.494	0.463	0.498	0.750	5.000	2.000	3.000	17°	12°	17°	0.55	With	LN*U03...	1
EXN03R075U0075-03(2)	0.039	0.035	0.039	0.750	3	0.494	0.463	0.498	0.750	5.000	2.000	3.000	17°	12°	17°	0.55	With	LN*U03...	1
EXN03R075U0075-03L(2)	0.039	0.035	0.039	0.750	3	0.494	0.463	0.498	0.750	6.500	3.500	3.000	17°	12°	17°	0.71	With	LN*U03...	1
EXN03R075U0075-03-C(2)	0.039	0.035	0.039	0.750	3	0.495	0.464	0.498	0.750	5.000	2.000	3.000	17°	12°	17°	0.66	With	LN*U03...	2
EXN03R087U0075-02(2)	0.039	0.035	0.039	0.875	2	0.619	0.588	0.623	0.750	5.000	2.000	3.000	17°	12°	17°	0.57	With	LN*U03...	1
EXN03R087U0075-03(2)	0.039	0.035	0.039	0.875	3	0.619	0.588	0.623	0.750	5.000	2.000	3.000	17°	12°	17°	0.57	With	LN*U03...	1
EXN03R087U0075-03L(2)	0.039	0.035	0.039	0.875	3	0.619	0.588	0.623	0.750	6.500	1.250	5.250	17°	12°	17°	0.75	With	LN*U03...	1
EXN03R087U0075-03-C(2)	0.039	0.035	0.039	0.875	3	0.621	0.590	0.623	0.750	5.000	2.000	3.000	17°	12°	17°	0.66	With	LN*U03...	2
EXN03R100U0100-04(2)	0.039	0.035	0.039	1.000	4	0.744	0.713	0.748	1.000	5.500	2.500	3.000	17°	12°	17°	1.08	With	LN*U03...	1
EXN03R100U0100-04L(2)	0.039	0.035	0.039	1.000	4	0.744	0.713	0.748	1.000	7.000	4.000	3.000	17°	12°	17°	1.34	With	LN*U03...	1
EXN03R100U0100-05(1)	0.039	0.035	0.039	1.000	5	0.744	0.713	0.748	1.000	5.500	2.500	3.000	17°	12°	17°	1.08	With	LN*U03...	1
EXN03R100U0100-05-C(1)	0.039	0.035	0.039	1.000	5	0.746	0.715	0.748	1.000	5.500	2.500	3.000	17°	12°	17°	1.10	With	LN*U03...	2
EXN03R112U0100-04(2)	0.039	0.035	0.039	1.125	4	0.869	0.838	0.873	1.000	5.500	2.500	3.000	17°	12°	17°	1.12	With	LN*U03...	1
EXN03R112U0100-04L(2)	0.039	0.035	0.039	1.125	4	0.869	0.838	0.873	1.000	7.000	1.500	5.500	17°	12°	17°	1.46	With	LN*U03...	1
EXN03R112U0100-05(2)	0.039	0.035	0.039	1.125	5	0.869	0.838	0.873	1.000	5.500	2.500	3.000	17°	12°	17°	1.12	With	LN*U03...	1
EXN03R125U0125-05(2)	0.039	0.035	0.039	1.250	5	0.994	0.963	0.998	1.250	6.000	3.000	3.000	17°	12°	17°	1.87	With	LN*U03...	1
EXN03R125U0125-05L(2)	0.039	0.035	0.039	1.250	5	0.994	0.963	0.998	1.250	8.000	5.000	3.000	17°	12°	17°	2.43	With	LN*U03...	1
EXN03R125U0125-06(1)	0.039	0.035	0.039	1.250	6	0.994	0.963	0.998	1.250	6.000	3.000	3.000	17°	12°	17°	1.85	With	LN*U03...	1
EXN03R125U0125-06-C(1)	0.039	0.035	0.039	1.250	6	0.997	0.966	0.997	1.250	6.000	3.000	3.000	17°	12°	17°	1.76	With	LN*U03...	2
EXN03R150U0125-06-C(2)	0.039	0.035	0.039	1.500	6	1.248	1.217	1.247	1.250	6.000	3.000	3.000	17°	12°	17°	1.96	With	LN*U03...	2

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Metric	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	DCONMS	LF	LH	LS	KAPR*	KAPR2*	KAPR3*	WT(kg)	Air hole	Insert	Fig.
EXN03R016M16.0-02(1)	1	0.9	1	16	2	9.6	8.8	9.8	16	100	30	70	15°	10°	15°	0.2	With	LN*U03...	1
EXN03R016M16.0-02L(1)	1	0.9	1	16	2	9.6	8.8	9.8	16	150	50	100	15°	10°	15°	0.2	With	LN*U03...	1
EXN03R016M16.0-02-C(1)	1	0.9	1	16	2	9.6	8.8	9.8	16	100	30	70	15°	10°	15°	0.2	With	LN*U03...	2
EXN03R016M16.0-02L-C(1)	1	0.9	1	16	2	9.6	8.8	9.8	16	150	50	100	15°	10°	15°	0.2	With	LN*U03...	2
EXN03R016M16.0-02N(1)	1	0.9	1	16	2	9.6	8.8	9.8	16	100	30	70	15°	10°	15°	0.2	Without	LN*U03...	3
EXN03R018M16.0-02(1)	1	0.9	1	18	2	11.5	10.7	11.7	16	100	30	70	17°	12°	17°	0.2	With	LN*U03...	1
EXN03R018M16.0-02L(1)	1	0.9	1	18	2	11.5	10.7	11.7	16	150	25	125	17°	12°	17°	0.2	With	LN*U03...	1
EXN03R020M20.0-03(2)	1	0.9	1	20	3	13.5	12.7	13.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	1
EXN03R020M20.0-03L(2)	1	0.9	1	20	3	13.5	12.7	13.6	20	160	80	80	17°	12°	17°	0.3	With	LN*U03...	1
EXN03R020M20.0-03-C(2)	1	0.9	1	20	3	13.5	12.7	13.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	2
EXN03R020M20.0-03L-C(2)	1	0.9	1	20	3	13.5	12.7	13.6	20	160	80	80	17°	12°	17°	0.3	With	LN*U03...	2
EXN03R020M20.0-03N(2)	1	0.9	1	20	3	13.5	12.7	13.6	20	130	50	80	17°	12°	17°	0.3	Without	LN*U03...	3
EXN03R020M20.0-04(1)	1	0.9	1	20	4	13.5	12.7	13.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	1
EXN03R020M20.0-04-C(1)	1	0.9	1	20	4	13.5	12.7	13.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	2
EXN03R022M20.0-03(2)	1	0.9	1	22	3	15.5	14.7	15.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	1
EXN03R022M20.0-03L(2)	1	0.9	1	22	3	15.5	14.7	15.6	20	160	30	130	17°	12°	17°	0.4	With	LN*U03...	1
EXN03R022M20.0-04(1)	1	0.9	1	22	4	15.5	14.7	15.6	20	130	50	80	17°	12°	17°	0.3	With	LN*U03...	1
EXN03R025M25.0-04(2)	1	0.9	1	25	4	18.5	17.7	18.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	1
EXN03R025M25.0-04L(2)	1	0.9	1	25	4	18.5	17.7	18.6	25	180	100	80	17°	12°	17°	0.6	With	LN*U03...	1
EXN03R025M25.0-04-C(2)	1	0.9	1	25	4	18.5	17.7	18.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	2
EXN03R025M25.0-04L-C(2)	1	0.9	1	25	4	18.5	17.7	18.6	25	180	100	80	17°	12°	17°	0.6	With	LN*U03...	2
EXN03R025M25.0-04N(2)	1	0.9	1	25	4	18.5	17.7	18.6	25	140	60	80	17°	12°	17°	0.5	Without	LN*U03...	3
EXN03R025M25.0-05(1)	1	0.9	1	25	5	18.5	17.7	18.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	1
EXN03R025M25.0-05-C(1)	1	0.9	1	25	5	18.5	17.7	18.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	2
EXN03R028M25.0-04(2)	1	0.9	1	28	4	21.5	20.7	21.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	1
EXN03R028M25.0-04L(2)	1	0.9	1	28	4	21.5	20.7	21.6	25	180	35	145	17°	12°	17°	0.7	With	LN*U03...	1
EXN03R028M25.0-05(1)	1	0.9	1	28	5	21.5	20.7	21.6	25	140	60	80	17°	12°	17°	0.5	With	LN*U03...	1
EXN03R030M32.0-04(2)	1	0.9	1	30	4	23.5	22.7	23.6	32	150	70	80	17°	12°	17°	0.8	With	LN*U03...	1

Metric	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	DCONMS	LF	LH	LS	KAPR*	KAPR2*	KAPR3*	WT(kg)	Air hole	Insert	Fig.
EXN03R030M32.0-04L(2)	1	0.9	1	30	4	23.5	22.7	23.6	32	200	120	80	17°	12°	17°	0.9	With	LN*U03...	1
EXN03R030M32.0-05(2)	1	0.9	1	30	5	23.5	22.7	23.6	32	150	70	80	17°	12°	17°	0.8	With	LN*U03...	1
EXN03R032M32.0-05(2)	1	0.9	1	32	5	25.5	24.7	25.6	32	150	70	80	17°	12°	17°	0.8	With	LN*U03...	1
EXN03R032M32.0-05L(2)	1	0.9	1	32	5	25.5	24.7	25.6	32	200	120	80	17°	12°	17°	1.1	With	LN*U03...	1
EXN03R032M32.0-05-C(2)	1	0.9	1	32	5	25.5	24.7	25.6	32	150	70	80	17°	12°	17°	0.8	With	LN*U03...	2
EXN03R032M32.0-05L-C(2)	1	0.9	1	32	5	25.5	24.7	25.6	32	200	120	80	17°	12°	17°	1.1	With	LN*U03...	2
EXN03R032M32.0-05N(2)	1	0.9	1	32	5	25.5	24.7	25.6	32	150	70	80	17°	12°	17°	0.8	Without	LN*U03...	3
EXN03R032M32.0-06(1)	1	0.9	1	32	6	25.5	24.7	25.6	32	150	70	80	17°	12°	17°	0.9	With	LN*U03...	1
EXN03R032M32.0-06-C(1)	1	0.9	1	32	6	25.5	24.7	25.6	32	150	70	80	17°	12°	17°	0.8	With	LN*U03...	2
EXN03R035M32.0-05(2)	1	0.9	1	35	5	28.5	27.7	28.6	32	150	35	115	17°	12°	17°	0.9	With	LN*U03...	1
EXN03R035M32.0-05L(2)	1	0.9	1	35	5	28.5	27.7	28.6	32	200	35	165	17°	12°	17°	1.2	With	LN*U03...	1
EXN03R035M32.0-06(2)	1	0.9	1	35	6	28.5	27.7	28.6	32	150	35	115	17°	12°	17°	0.9	With	LN*U03...	1
EXN03R040M32.0-06-C(2)	1	0.9	1	40	6	33.6	32.8	33.7	32	150	45	105	17°	12°	17°	1	With	LN*U03...	2
EXN03R040M32.0-06L-C(2)	1	0.9	1	40	6	33.6	32.8	33.7	32	220	45	175	17°	12°	17°	1.4	With	LN*U03...	2

*APMX, DC, KAPR: with LNMU0303ZER
*APMX2, KAPR2 : with LNMU0303UER
*APMX3, KAPR3 : with LNGU0303ZER
Clamping screws used for (1) and (2) above are different. See below for the part codes.

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN03...	(1) CSPB-2.5 (2) CSPB-2.5L080	M-1000	IP-8D

Tool diameter tolerance	
Tool diameter	0 / -0.018"

Recommended clamping torque: 0.96 lbs·ft, 1.3 N·m

DOFEED

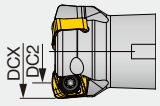
EXN06

High feed mill shank type cutter, with screw clamp system

GAMP = +10°, GAMF = -2° ~ +6°



With LNGU06-MH



With LN*U06-MJ/ML/W

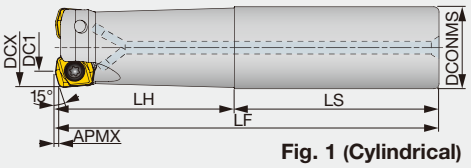


Fig. 1 (Cylindrical)

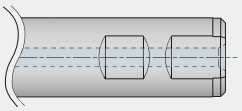


Fig. 2 (Weldon)



Inch	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	WT(lb)	Air hole	Insert	Fig.
EXN06R125U0125W02	0.059	1.250	2	0.766	0.745	1.250	5.281	3.000	2.281	1.540	With	LN*U06...	2
EXN06R125U0125-02L	0.059	1.250	2	0.766	0.745	1.250	8.000	5.000	3.000	2.360	With	LN*U06...	1
EXN06R150U0125W03	0.059	1.500	3	1.014	0.989	1.250	5.781	3.500	2.281	1.830	With	LN*U06...	2
EXN06R150U0125-03L	0.059	1.500	3	1.014	0.989	1.250	10.000	2.000	8.000	3.310	With	LN*U06...	1

Metric	APMX	DCX	CICT	DC1	DC2	DCONMS	LF	LH	LS	WT (kg)	Air hole	Insert	Fig.
EXN06R032M32.0-02	1.5	32	2	19.7	19.1	32	150	70	80	0.8	With	LN*U06...	1
EXN06R032M32.0-02L	1.5	32	2	19.7	19.1	32	200	120	80	1.1	With	LN*U06...	1
EXN06R035M32.0-02	1.5	35	2	22.7	22	32	150	45	105	0.9	With	LN*U06...	1
EXN06R035M32.0-02L	1.5	35	2	22.7	22	32	200	45	155	1.2	With	LN*U06...	1
EXN06R040M32.0-03	1.5	40	3	27.7	27	32	150	45	105	0.9	With	LN*U06...	1
EXN06R040M32.0-03L	1.5	40	3	27.7	27	32	220	45	175	1.3	With	LN*U06...	1

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN06...	CSPB-5	M-1000	IP-20D

Tool diameter tolerance	
Tool diameter	0 / -0.022"

Recommended clamping torque: 3.69 lbs·ft, 5 N·m

Reference pages: Inserts → H030 - H031, Standard cutting conditions → H032 - H037

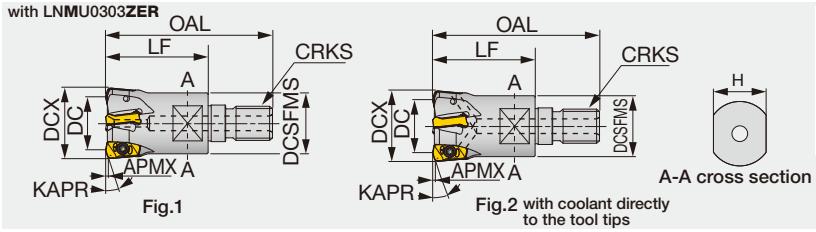
DOFEED

HXN03

High feed endmill, modular type (TungFlex)

GAMP= +6°,GAMF= +5° ~ +11°





Metric	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	OAL	LF	H	DCSFMS	KAPR*	KAPR2*	KAPR3*	CRKS	WT(kg)	Air hole	Insert	Fig.
HXN03R016MM08-02(1)	1	0.9	1	16	2	9.6	8.8	9.8	42	25	10	12.8	15°	10°	15°	M8	0.03	With	LN*U03...	1
HXN03R016MM08-02-C(1)	1	0.9	1	16	2	9.6	8.8	9.8	42	25	10	12.8	15°	10°	15°	M8	0.03	With	LN*U03...	2
HXN03R018MM08-02(1)	1	0.9	1	18	2	11.5	10.7	11.7	42	25	10	14.5	17°	12°	17°	M8	0.04	With	LN*U03...	1
HXN03R020MM10-03(2)	1	0.9	1	20	3	13.5	12.7	13.6	49	30	15	17.8	17°	12°	17°	M10	0.06	With	LN*U03...	1
HXN03R020MM10-03-C(2)	1	0.9	1	20	3	13.5	12.7	13.6	49	30	15	17.8	17°	12°	17°	M10	0.06	With	LN*U03...	2
HXN03R020MM10-04(1)	1	0.9	1	20	4	13.5	12.7	13.6	49	30	15	17.8	17°	12°	17°	M10	0.06	With	LN*U03...	1
HXN03R020MM10-04-C(1)	1	0.9	1	20	4	13.5	12.7	13.6	49	30	15	17.8	17°	12°	17°	M10	0.06	With	LN*U03...	2
HXN03R022MM10-03(2)	1	0.9	1	22	3	15.5	14.7	15.6	49	30	15	17.8	17°	12°	17°	M10	0.06	With	LN*U03...	1
HXN03R022MM10-04(1)	1	0.9	1	22	4	15.5	14.7	15.6	49	30	15	17.8	17°	12°	17°	M10	0.07	With	LN*U03...	1
HXN03R025MM12-04(2)	1	0.9	1	25	4	18.5	17.7	18.6	57	35	17	20.8	17°	12°	17°	M12	0.1	With	LN*U03...	1
HXN03R025MM12-04-C(2)	1	0.9	1	25	4	18.5	17.7	18.6	57	35	17	20.8	17°	12°	17°	M12	0.1	With	LN*U03...	2
HXN03R025MM12-05(1)	1	0.9	1	25	5	18.5	17.7	18.6	57	35	17	20.8	17°	12°	17°	M12	0.11	With	LN*U03...	1
HXN03R025MM12-05-C(1)	1	0.9	1	25	5	18.5	17.7	18.6	57	35	17	20.8	17°	12°	17°	M12	0.1	With	LN*U03...	2
HXN03R028MM12-04(2)	1	0.9	1	28	4	21.5	20.7	21.6	57	35	17	23	17°	12°	17°	M12	0.12	With	LN*U03...	1
HXN03R028MM12-05(2)	1	0.9	1	28	5	21.5	20.7	21.6	57	35	17	23	17°	12°	17°	M12	0.12	With	LN*U03...	1
HXN03R030MM16-04(2)	1	0.9	1	30	4	23.5	22.7	23.6	63	40	22	28.8	17°	12°	17°	M16	0.19	With	LN*U03...	1
HXN03R030MM16-05(2)	1	0.9	1	30	5	23.5	22.7	23.6	63	40	22	28.8	17°	12°	17°	M16	0.2	With	LN*U03...	1
HXN03R032MM16-05(2)	1	0.9	1	32	5	25.5	24.7	25.6	63	40	22	28.8	17°	12°	17°	M16	0.2	With	LN*U03...	1
HXN03R032MM16-05-C(2)	1	0.9	1	32	5	25.5	24.7	25.6	63	40	22	28.8	17°	12°	17°	M16	0.2	With	LN*U03...	2
HXN03R032MM16-06(1)	1	0.9	1	32	6	25.5	24.7	25.6	63	40	22	28.8	17°	12°	17°	M16	0.21	With	LN*U03...	1
HXN03R032MM16-06-C(1)	1	0.9	1	32	6	25.5	24.7	25.6	63	40	22	28.8	17°	12°	17°	M16	0.2	With	LN*U03...	2
HXN03R040MM16-06-C(2)	1	0.9	1	40	6	33.6	32.8	33.7	63	40	22	28.8	17°	12°	17°	M16	0.27	With	LN*U03...	2

Approach angle

7°-25°

41°-45°

60°-70°

85°-88°

90°

Others

*APMX, KAPR: with LNMU0303ZER
*APMX2, KAPR2 : with LNMU0303UER
*APMX3, KAPR3 : with LNGU0303ZER
Clamping screws used for (1) and (2) above are different. See below for the part codes.

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
HXN03...	(1) CSPB-2.5 (2) CSPB-2.5L080	M-1000	IP-8D

Tool diameter tolerance	
Tool diameter	0 / -0.018"

Recommended clamping torque: 1.3 N·m

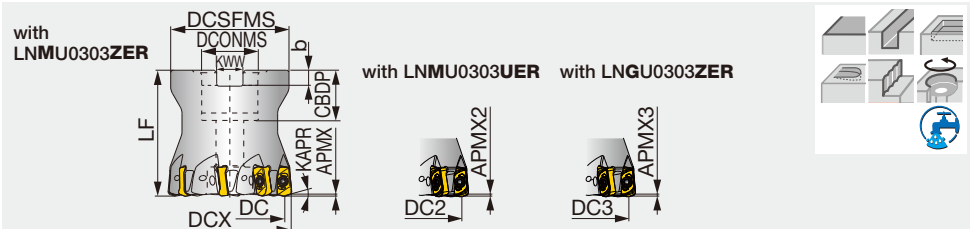
Reference pages: Inserts → H030 - H031, Standard cutting conditions → H032 - H037, TungFlex → H038 - H039

TXN03

High feed mill bore type cutter, for 4-corner double sided inserts

GAMP = +6°,GAMF = +12° ~ 13°





Inch	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	KAPR2*	KAPR3*	WT(lb)	Air hole	Insert
TXN03R150U0050A05	0.039	0.035	0.039	1.500	5	1.323	1.291	1.327	1.460	0.500	0.750	1.575	0.160	0.252	17°	12°	17°	0.530	With	LN*U03...
TXN03R150U0050A06	0.039	0.035	0.039	1.500	6	1.323	1.291	1.327	1.380	0.500	0.600	1.575	0.160	0.252	17°	12°	17°	0.510	With	LN*U03...
TXN03R200U0075A05	0.039	0.035	0.039	2.000	5	1.717	1.685	1.720	1.693	0.750	0.750	1.969	0.197	0.315	17°	12°	17°	1.100	With	LN*U03...
TXN03R200U0075A08	0.039	0.035	0.039	2.000	8	1.717	1.685	1.720	1.693	0.750	0.750	1.969	0.197	0.315	17°	12°	17°	1.100	With	LN*U03...
TXN03R200U0075A10	0.039	0.035	0.039	2.000	10	1.717	1.685	1.720	1.693	0.750	0.750	1.969	0.197	0.315	17°	12°	17°	1.100	With	LN*U03...

Metric	APMX	APMX2	APMX3	DCX	CICT	DC	DC2	DC3	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	KAPR2*	KAPR3*	WT(kg)	Air hole	Insert
TXN03R040M16.0E05	1	0.9	1	40	5	33.6	32.8	33.7	35	16	18	40	5.6	8.4	17°	12°	17°	0.2	With	LN*U03...
TXN03R040M16.0E06	1	0.9	1	40	6	33.6	32.8	33.7	35	16	18	40	5.6	8.4	17°	12°	17°	0.2	With	LN*U03...
TXN03R050M22.0E05	1	0.9	1	50	5	43.6	42.8	43.7	47	22	20	50	6.3	10.4	17°	12°	17°	0.5	With	LN*U03...
TXN03R050M22.0E08	1	0.9	1	50	8	43.6	42.8	43.7	47	22	20	50	6.3	10.4	17°	12°	17°	0.5	With	LN*U03...
TXN03R050M22.2-08	1	0.9	1	50	8	43.6	42.8	43.7	47	22.225	20	50	5	8	17°	12°	17°	0.5	With	LN*U03...

*APMX2, KAPR2 : with LNMU0303UER
*APMX3, KAPR3 : with LNGU0303ZER
Clamping screws used for (1) and (2) above are different. See below for the part codes.

SPARE PARTS






Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TXN03R150U0050A05	CSPB-2.5L080	M-1000	(SR UNF 1/4X3/4 B18.3)	IP-8D
TXN03R150U0050A06	CSPB-2.5	M-1000	(SR UNF 1/4X3/4 B18.3)	IP-8D
TXN03R200U...	CSPB-2.5L080	M-1000	(C0.375X1.125H)	IP-8D
TXN03R040M	CSPB-2.5L080	M-1000	CM8X30H	IP-8D
TXN03R050M	CSPB-2.5L080	M-1000	CM10X30H	IP-8D

Recommended clamping torque: 0.96 lbs·ft, 1.3 N·m

Tool diameter tolerance	
Tool diameter	0 / -0.018"

Reference pages: Inserts → H030 - H031, Standard cutting conditions → H032 - H037

DOFEED
TXN06

High feed mill bore type cutter, with screw clamp system

GAMP = +10°, GAMF = +2° ~ +6°



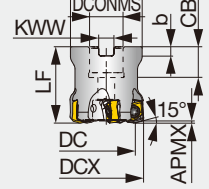


Fig.1



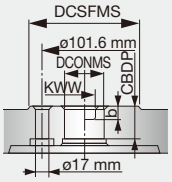


Fig.2

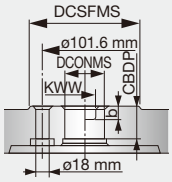


Fig.3



Inch	APMX	DCX	CICT	DC1	DC2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Fig.
TXN06R200U0075A04	0.059	2.000	4	1.513	1.485	1.850	1.969	0.750	0.750	0.315	0.197	0.970	With	LN*U06...	1
TXN06R200U0075A05	0.059	2.000	5	1.513	1.485	1.850	1.969	0.750	0.750	0.315	0.197	0.990	With	LN*U06...	1
TXN06R250U0075A04	0.059	2.500	4	2.012	1.983	2.323	1.969	0.750	0.750	0.315	0.197	1.740	With	LN*U06...	1
TXN06R250U0075A06	0.059	2.500	6	2.012	1.983	2.323	1.969	0.750	0.750	0.315	0.197	1.760	With	LN*U06...	1
TXN06R300U0100A05	0.059	3.000	5	2.512	2.481	2.835	2.480	1.000	1.049	0.374	0.236	3.130	With	LN*U06...	1
TXN06R300U0100A07	0.059	3.000	7	2.512	2.481	2.835	2.480	1.000	1.049	0.374	0.236	3.280	With	LN*U06...	1
TXN06R400U0150A06	0.059	4.000	6	3.512	3.481	3.819	2.480	1.500	1.610	0.626	0.394	4.850	With	LN*U06...	1
TXN06R400U0150A10	0.059	4.000	10	3.512	3.481	3.819	2.480	1.500	1.610	0.626	0.394	4.850	With	LN*U06...	1
TXN06R500U0150A08	0.059	5.000	8	4.512	4.481	3.819	2.480	1.500	1.610	0.626	0.394	7.050	With	LN*U06...	1
TXN06R500U0150A12	0.059	5.000	12	4.512	4.481	3.819	2.480	1.500	1.610	0.626	0.394	7.280	With	LN*U06...	1
TXN06R600U0200A10	0.059	6.000	10	5.512	5.480	4.331	2.480	2.000	1.496	0.748	0.433	9.480	With	LN*U06...	1
TXN06R600U0200A14	0.059	6.000	14	5.512	5.480	4.331	2.480	2.000	1.496	0.748	0.433	9.260	With	LN*U06...	1

Metric	APMX	DCX	CICT	DC1	DC2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (kg)	Air hole	Insert	Fig.
TXN06R050M22.0E04(1)	1.5	50	4	37.6	36.9	47	50	22	20	10.4	6.3	0.4	With	LN*U06...	1
TXN06R050M22.0E05(1)	1.5	50	5	37.6	36.9	47	50	22	20	10.4	6.3	0.4	With	LN*U06...	1
TXN06R050M22.2-04(2)	1.5	50	4	37.6	36.9	47	50	22.225	20	8	5	0.4	With	LN*U06...	1
TXN06R050M22.2-05(1)	1.5	50	5	37.6	36.9	47	50	22.225	20	8	5	0.4	With	LN*U06...	1
TXN06R052M22.0E04(1)	1.5	52	4	39.6	38.9	49	50	22	20	10.4	6.3	0.5	With	LN*U06...	1
TXN06R052M22.0E05(1)	1.5	52	5	39.6	38.9	49	50	22	20	10.4	6.3	0.5	With	LN*U06...	1
TXN06R063M22.0E04(2)	1.5	63	4	50.6	49.8	59	50	22	20	10.4	6.3	0.8	With	LN*U06...	1
TXN06R063M22.0E06(2)	1.5	63	6	50.6	49.8	59	50	22	20	10.4	6.3	0.8	With	LN*U06...	1
TXN06R063M22.2-04(2)	1.5	63	4	50.6	49.8	59	50	22.225	20	8	5	0.8	With	LN*U06...	1
TXN06R063M22.2-06(2)	1.5	63	6	50.6	49.8	59	50	22.225	20	8	5	0.8	With	LN*U06...	1
TXN06R066M27.0E04	1.5	66	4	53.6	52.8	63	50	27	22	12.4	7	0.8	With	LN*U06...	1
TXN06R066M27.0E06	1.5	66	6	53.6	52.8	63	50	27	22	12.4	7	0.8	With	LN*U06...	1
TXN06R080M27.0E05	1.5	80	5	67.6	66.8	76	63	27	22	12.4	7	1.6	With	LN*U06...	1
TXN06R080M27.0EE05	1.5	80	5	67.6	66.8	60	63	27	22	12.4	7	1.2	With	LN*U06...	1
TXN06R080M27.0E08	1.5	80	8	67.6	66.8	76	63	27	22	12.4	7	1.6	With	LN*U06...	1
TXN06R080M27.0EE08	1.5	80	8	67.6	66.8	60	63	27	22	12.4	7	1.2	With	LN*U06...	1
TXN06R080M31.7-05	1.5	80	5	67.6	66.8	76	63	31.75	32	12.7	8	1.6	With	LN*U06...	1
TXN06R080M31.7-08	1.5	80	8	67.6	66.8	76	63	31.75	32	12.7	8	1.6	With	LN*U06...	1
TXN06R100M31.7-06	1.5	100	6	87.6	86.8	96	63	31.75	32	12.7	8	2.2	With	LN*U06...	1
TXN06R100M32.0E06	1.5	100	6	87.6	86.8	96	63	32	25	14.4	8	2.2	With	LN*U06...	1
TXN06R125M38.1-08	1.5	125	8	112.6	111.8	100	63	38.1	43	15.9	10	3	With	LN*U06...	1
TXN06R125M40.0E08	1.5	125	8	112.6	111.8	100	63	40	37	16.4	9	3	With	LN*U06...	1
TXN06R160M40.0E10	1.5	160	10	147.6	146.8	100	63	40	37	16.4	9	5	With	LN*U06...	1
TXN06R160M50.8-10	1.5	160	10	147.6	146.8	100	63	50.8	46	19	11	4.6	With	LN*U06...	1
TXN06R200M47.6-12	1.5	200	12	187.6	186.8	130	63	47.625	38	25.4	14	7.7	Without	LN*U06...	2
TXN06R200M60.0E12	1.5	200	12	187.6	186.8	130	63	60	38	25.7	14	7.2	Without	LN*U06...	3

Shell locking bolt used for (1) and (2) above are different. See next page for the part codes.

Tool diameter tolerance	
Tool diameter	0 / -0.022"

Approach angle

7°-25° 41°-45° 60°-70° 85°-88° 90° Others

Reference pages: Inserts → H030 - H031, Standard cutting conditions → H032 - H037

SPARE PARTS





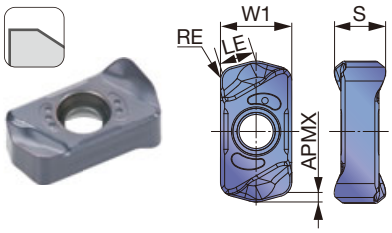



Designation	Clamping screw	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Grip	Torx bit
TXN06R200U..., 250U...	CSPB-5	M-1000	-	(C0.375X1.125H)	H-TB2W	BLDIP20/S7
TXN06R300U...	CSPB-5	M-1000	-	(C0.500X1.375H)	H-TB2W	BLDIP20/S7
TXN06R400U..., 500U...	CSPB-5	M-1000	(TMBA-0.750H)	-	H-TB2W	BLDIP20/S7
TXN06R600U...	CSPB-5	M-1000	-	-	H-TB2W	BLDIP20/M7
TXN06R050, 052, 063M...	CSPB-5	M-1000	-	(1) FSHM10-40H (2) CM10-30H	H-TB2W	BLDIP20/S7
TXN06R066,080M27.0...	CSPB-5	M-1000	-	CM12X30H	H-TB2W	BLDIP20/S7
TXN06R080,100M31.7...	CSPB-5	M-1000	-	CM16X40H	H-TB2W	BLDIP20/S7
TXN06R125M...	CSPB-5	M-1000	TMBA-M20H	-	H-TB2W	BLDIP20/S7
TXN06R160M40.0...	CSPB-5	M-1000	TMBA-M20H	-	H-TB2W	BLDIP20/M7
TXN06R160M50.8...	CSPB-5	M-1000	TMBA-M24H	-	H-TB2W	BLDIP20/M7
TXN06R200M...	CSPB-5	M-1000	-	-	H-TB2W	BLDIP20/M7

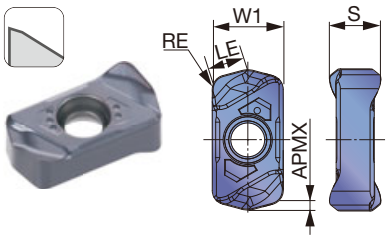
Recommended clamping torque: 3.69 lbs·ft, 5 N·m

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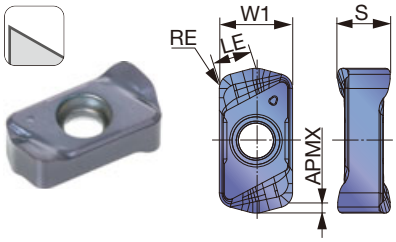
LNMU03ZER-MJ (for general purpose)



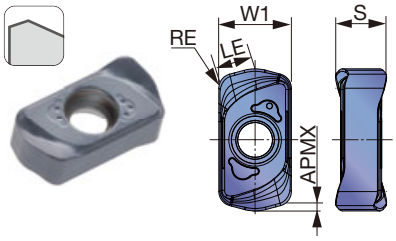
LNMU03ZER-ML (for low cutting force)



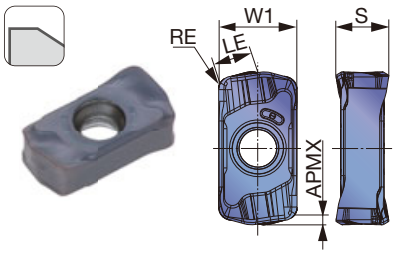
LNMU03ZER-MS (for stainless steel)



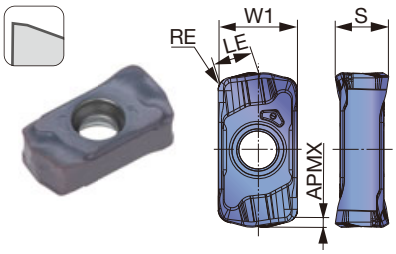
LNGU03ZER-MH (Robust cutting edges)



LNMU03UER-MJ (for general purpose, low approach angle)

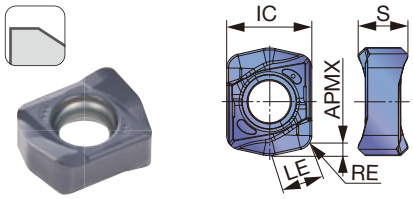


LNMU03UER-ML (for low cutting force, low approach angle)

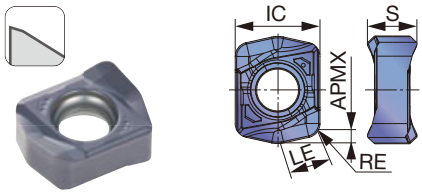


Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

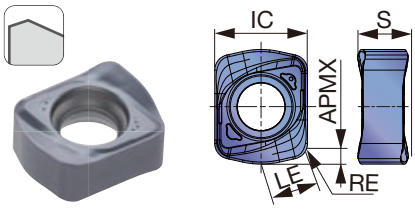
LNMU06-MJ (for general purpose)



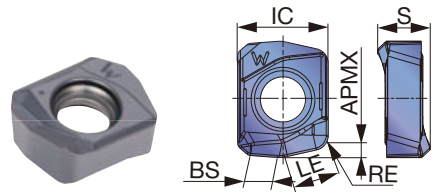
LNMU06-ML (for low cutting force)



LNGU06-MH (Robust cutting edges)



LNMU06-W (Wiper, 2 cutting edge)



Reference pages: Standard cutting conditions → H032 - H037

P	Steel		★					
M	Stainless	★	☆					
K	Cast iron		☆	☆	★			
N	Non-ferrous							
S	Superalloys	★	☆	☆		★		
H	Hard materials			☆		★	☆	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	W1	IC	S	BS
			AH130	AH3225	AH725	AH120	AH8015	AH8005					
LNMU0303ZER-MJ	0.047	0.039	●	●	●	●	●		0.126	0.236	-	0.169	-
LNMU0303ZER-ML	0.047	0.039	●	●	●		●		0.126	0.236	-	0.169	-
LNMU0303ZER-MS	0.047	0.039	●	●					0.126	0.236	-	0.169	-
LNGU0303ZER-MH	0.047	0.039					●	●	0.126	0.236	-	0.169	-
LNMU0303UER-MJ	0.039	0.035	●	●			●		0.122	0.236	-	0.161	-
LNMU0303UER-ML	0.039	0.035	●	●			●		0.122	0.236	-	0.161	-
LNMU06X5ZER-MJ	0.079	0.059	●	●	●	●	●		0.236	-	0.472	0.276	-
LNMU06X5ZER-ML	0.079	0.059	●	●	●	●	●		0.236	-	0.472	0.276	-
LNGU06X5ZER-MH	0.079	0.059					●	●	0.236	-	0.472	0.276	-
LNGU06X5ZER-W*	0.079	0.059			●				0.236	-	0.472	0.276	0.142

* Wiper insert, see note below
- When wiper insert (-W) is used, the value of feed per rev. (ipr) must be less than 0.142" x n. for keeping this value, the number of wiper insert (n) and feed per tooth (in/tooth) should be adjusted
- Wiper insert (-W) can be used just for face milling. It's not suitable for ramping or pocket milling

● : Line up

STANDARD CUTTING CONDITIONS

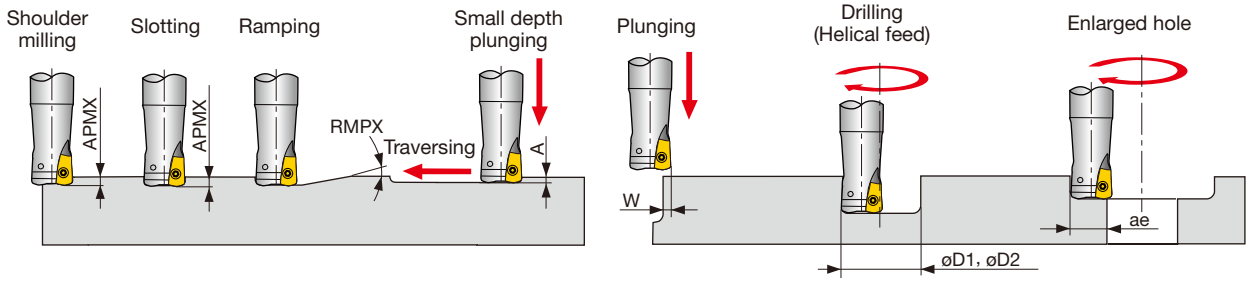
EXN03, HXN03, TXN03

ZER type

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool dia.: DCX (in) ø0.625~ ø0.875	ø1.000~ ø2.000	Plunging	ø0.625", CICT = 2 *n*	*Vf*	ø0.688", CICT = 2 *n*	*Vf*	ø0.75 *n*	*Vf* CICT = 2	CICT = 3
P	Carbon steels (S45C / C45, S55C / C55, etc.)	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Alloy steels (SCM440 / 42CrMo4, etc.)	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Prehardened steels (NAK80, PX5, etc.)	30 - 40HRC	First choice	AH3225	MJ	330 - 660	0.020 - 0.039	0.020 - 0.039	0.004	2,990	167	2,720	152	2,500	140	210
										Vc = 490 sfm, *fz* = 0.028 ipt						
		30 - 40HRC	for wear resistance	AH8015	MJ	330 - 660	0.020 - 0.039	0.020 - 0.039	0.004	2,990	167	2,720	152	2,500	140	210
										Vc = 490 sfm, *fz* = 0.028 ipt						
M	Austenitic stainless steels (SUS304 / X5CrNi18-9, etc.)	- 200HB	First choice	AH130	MS	260 - 490	0.012 - 0.031	0.012 - 0.031	0.004	2,380	95	2,170	87	1,990	80	119
										Vc = 390 sfm, *fz* = 0.02 ipt						
	Precipitation hardening stainless steels (SUS630 / X5CrNiCuNb16-4)	28HRC - (H1150)	First choice	AH130	MS	260 - 490	0.008 - 0.020	0.008 - 0.020	0.004	2,380	57	2,170	52	1,990	48	72
			for wear resistance	AH3225	MS					*Vc* = 390 sfm, *fz* = 0.012 ipt						
		40HRC - (H900)	First choice	AH3225	ML	260 - 390	0.004 - 0.012	0.004 - 0.012	0.004	2,020	32	1,830	29	1,680	27	40
			for impact resistance	AH3225	MJ					*Vc* = 330 sfm, *fz* = 0.008 ipt						
K	Gray cast irons (FC250 / GG25 / 250, etc.)	150 - 250HB	First choice	AH725	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Ductile cast irons (FCD400, etc.)	150 - 250HB	First choice	AH725	MJ	260 - 660	0.020 - 0.047	0.020 - 0.059	0.004	2,990	185	2,720	169	2,500	155	233
										Vc = 490 sfm, *fz* = 0.031 ipt						
S	Titanium alloy (Ti-6Al-4V, etc.)	- 40HRC	First choice	AH130	ML	100 - 200	0.012- 0.028	0.012- 0.028	0.003	790	25	720	23	660	21	32
			for impact resistance	AH130	MJ					*Vc* = 130 sfm, *fz* = 0.016 ipt						
	Heat-resistant alloy (Inconel, Hastelloy, etc.)	- 40HRC	First choice	AH8015	ML	70 - 160	0.004 - 0.012	0.004 - 0.012	0.002	610	10	560	9	510	8	12
			for impact resistance	AH725	ML					*Vc* = 100 sfm, *fz* = 0.008 ipt						
H	Hot mold steel (SKD61 / X40CrMoV5-1, etc.)	40 - 55HRC	First choice	AH8015	MH	260 - 490	0.004 - 0.020	0.004 - 0.020	0.002	2,390	57	2,170	52	1,990	48	72
			Low resistance	AH8015	MJ		0.004 - 0.012	0.004 - 0.012		*Vc* = 390 sfm, *fz* = 0.012 ipt						
	Hot mold steel of D.T.C materials (DAC**, DH**, DIEVER, etc)	40 - 55HRC	First choice	AH8015	MJ	160 - 330	0.004 - 0.012	0.004 - 0.012	0.002	1,590	25	1,440	23	1,320	21	32
			for impact resistance	AH8015	MH		0.004 - 0.020	0.004 - 0.020		*Vc* = 260 sfm, *fz* = 0.008 ipt						
	Cold mold steels (SKD11 / X153CrMoV12, etc.)	55 - 60HRC	First choice	AH8005	MH	160 - 230	0.002 - 0.008	0.001 - 0.004	0.001	1,220	12	1,110	11	1,020	10	15
										Vc = 200 sfm, *fz* = 0.005 ipt						
		55 - 60HRC	for impact resistance	AH8015	MH	160 - 230	0.002 - 0.004	0.002 - 0.008	0.001	1,220	5	1,110	4	1,020	4	6
										Vc = 200 sfm, *fz* = 0.002 ipt						

- When chips stay in the cutting zone during slotting or pocketing, use air blast to remove chips from the work area.
- Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX MJ/ML/MS	RMPX MH	Max. plunging depth A	Max. cutting width in plunging W MJ/ML/MS	W MH	Min. machinable hole dia. øD1 MJ/ML/MS	øD1 MH	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXN03R062U0062-...	0.625	0.039	2.100	1.700	0.012	0.138	0.118	0.856	0.896	1.181	0.492
EXN03R068U0062...	0.688	0.039	1.700	1.700	0.012	0.138	0.118	0.982	1.022	1.339	0.571
EXN03R075U0075-...	0.750	0.039	1.400	1.200	0.012	0.138	0.118	1.106	1.146	1.496	0.650
EXN03R087U0075-...	0.875	0.039	1.200	1.000	0.012	0.138	0.118	1.356	1.396	1.654	0.728
EXN03R100U0100-...	1.000	0.039	1.000	0.900	0.012	0.138	0.118	1.606	1.646	1.890	0.846
EXN03R112U0100-...	1.125	0.039	0.800	0.800	0.012	0.138	0.118	1.856	1.856	2.126	0.965
EXN03R125U0125-...	1.250	0.039	0.700	0.700	0.012	0.138	0.118	2.106	2.106	2.441	1.122
TXN03R150U0075...	1.500	0.039	0.500	0.500	0.012	0.138	0.118	2.606	2.606	3.070	1.437
TXN03R200U0075...	2.000	0.039	0.400	0.400	0.012	0.138	0.118	3.606	3.606	3.858	1.830

For DCX above ø0.051", slot milling, ramping or contouring is not recommended as chips may be re-cut

Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.004"

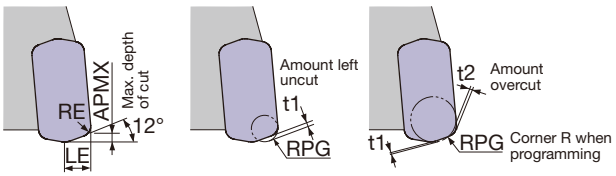
ø0.875			ø1			ø1.125			ø1.25			ø1.5			ø2			
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		
	CICT = 2	CICT = 3		CICT = 4	CICT = 5		CICT = 4	CICT = 5		CICT = 5	CICT = 6		CICT = 5	CICT = 6		CICT = 5	CICT = 8	CICT = 10
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,140	120	180	1,870	209	262	1,660	186	232	1,500	210	252	1,250	175	210	940	132	211	263
Vc = 490 sfm, *fz* = 0.028 ipt																		
2,140	120	180	1,870	209	262	1,660	186	232	1,500	210	252	1,250	175	210	940	132	211	263
Vc = 490 sfm, *fz* = 0.028 ipt																		
1,700	68	102	1,490	119	149	1,320	106	132	1,190	119	143	990	99	119	740	74	118	148
Vc = 390 sfm, *fz* = 0.02 ipt																		
1,700	41	61	1,490	72	89	1,320	63	79	1,190	71	86	990	59	71	740	44	71	89
Vc = 390 sfm, *fz* = 0.012 ipt																		
1,440	23	35	1,260	40	50	1,120	36	45	1,010	40	48	840	34	40	630	25	40	50
Vc = 330 sfm, *fz* = 0.008 ipt																		
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,140	171	257	1,870	299	374	1,660	266	332	1,500	300	360	1,250	250	300	940	188	301	376
Vc = 490 sfm, *fz* = 0.04 ipt																		
570	23	34	500	40	50	440	35	44	400	40	48	330	33	40	250	25	40	50
Vc = 130 sfm, *fz* = 0.02 ipt																		
440	7	11	380	12	15	340	11	14	310	12	15	250	10	12	190	8	12	15
Vc = 100 sfm, *fz* = 0.008 ipt																		
1,700	41	61	1,490	72	89	1,320	63	79	1,190	71	86	990	59	71	740	44	71	89
Vc = 390 sfm, *fz* = 0.012 ipt																		
1,140	18	27	990	32	40	880	28	35	790	32	38	660	26	32	500	20	32	40
Vc = 260 sfm, *fz* = 0.008 ipt																		
870	7	10	760	12	15	680	11	14	610	12	15	510	10	12	380	8	12	15
Vc = 200 sfm, *fz* = 0.004 ipt																		
870	3	5	760	6	8	680	5	7	610	6	7	510	5	6	380	4	6	8
Vc = 200 sfm, *fz* = 0.002 ipt																		

- The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.

- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.060".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU0303ZER...

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.039	0.047	0.118	0.039	0.018	-
0.039	0.047	0.118	0.060	0.014	-
0.039	0.047	0.118	0.079	0.008	0.004
0.039	0.047	0.118	0.098	0.003	0.011

LNGU0303ZER...

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.039	0.047	0.118	0.039	0.018	-
0.039	0.047	0.118	0.060	0.014	-
0.039	0.047	0.118	0.079	0.008	0.004
0.039	0.047	0.118	0.098	0.003	0.011

Note: Each value in table is calculated theoretically at the maximum condition

*Recommended

STANDARD CUTTING CONDITIONS

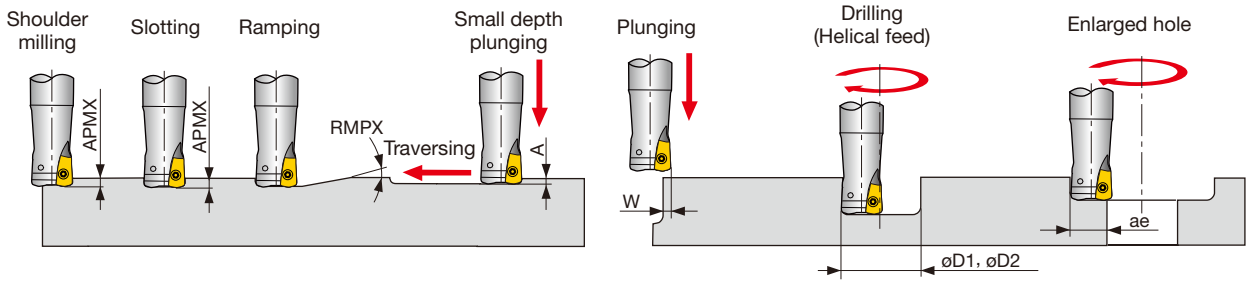
EXN03, HXN03, TXN03

UER type

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed Vc (sfm)	Feed per tooth: fz (ipt) Tool dia.: DCX (in) ø0.630 ~ ø0.875	ø1.000 ~ ø2.000	Plunging	ø0.625", CICT = 2 n	Vf	ø0.709", CICT = 2 n	Vf	ø0.787" n	Vf CICT = 3	Vf CICT = 4
P	Carbon steels 1045, 1055, etc.	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.046	0.020 - 0.060	0.004	4030	330	3670	300	3360	270	410
			Low resistance		ML						Vc = 660 sfm, fz = 0.040 ipt					
	Alloy steels 4140, etc.	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.046	0.020 - 0.060	0.004	4030	330	3670	300	3360	270	410
			Low resistance		ML						Vc = 660 sfm, fz = 0.040 ipt					
	Prehardened steels NAK80, PX5, etc.	30 - 40HRC	First choice	AH8015	MJ	330 - 660	0.020 - 0.040	0.020 - 0.040	0.004	3060	190	2780	170	2550	160	230
			for impact resistance	AH3225	MJ						Vc = 500 sfm, fz = 0.030 ipt					
M	Austenitic stainless steels 304SS, etc.	- 200HB	First choice	AH130	ML	260 - 490	0.012 - 0.040	0.012 - 0.040	0.004	2320	130	2110	110	1940	110	160
			for impact resistance		MJ						Vc = 380 sfm, fz = 0.026 ipt					
	Precipitation hardening stainless steels 17-4 PH, etc.	28HRC -	First choice	AH130	ML	260 - 490	0.012 - 0.030	0.012 - 0.030	0.004	2320	100	2110	90	1940	80	120
			for impact resistance		MJ						Vc = 380 sfm, fz = 0.020 ipt					
		40HRC -	First choice	AH130	ML	260 - 390	0.012 - 0.020	0.012 - 0.020	0.004	2020	70	1830	60	1680	60	90
			for impact resistance		MJ						Vc = 330 sfm, fz = .0016 ipt					
K	Gray cast irons Class 25, etc.	150 - 250HB	First choice	AH8015	MJ	330 - 980	0.012 - 0.046	0.020 - 0.060	0.004	4030	330	3670	300	3360	270	410
			for impact resistance	AH3225	MJ						Vc = 660 sfm, fz = 0.040 ipt					
	Ductile cast irons 60-40-18, etc.	150 - 250HB	First choice	AH8015	MJ	260 - 660	0.012 - 0.046	0.020 - 0.060	0.004	4030	330	3670	300	3360	190	290
			for impact resistance	AH3225	MJ						Vc = 460 sfm, fz = 0.040 ipt					
S	Titanium alloy Ti-6Al-4V, etc.	- 40HRC	First choice	AH130	MJ	100 - 200	0.012 - 0.030	0.012 - 0.030	0.003	920	40	830	40	760	40	50
			for wear resistance	AH8015	MJ						Vc = 150 sfm, fz = 0.020 ipt					
	Heat-resistant alloy Inconel, Hastelloy, etc.	- 40HRC	First choice	AH8015	ML	70 - 160	0.012 - 0.020	0.012 - 0.020	0.002	730	30	670	30	610	20	30
			for impact resistance		MJ						Vc = 120 sfm, fz = 0.016 ipt					
H	Hot mold steel H-13, etc.	40~50HRC	First choice	AH8015	MJ	260 - 490	0.004 - 0.020	0.004 - 0.020	0.002	2320	60	2110	60	1940	50	70
			for impact resistance	AH3225	MJ						Vc = 380 sfm, fz = 0.012 ipt					
	Hot mold steel of D.T.C materials DAC**, DH**, DIEVER, etc.	40~50HRC	First choice	AH8015	MJ	160 - 330	0.004 - 0.020	0.004 - 0.020	0.002	1530	40	1390	40	1270	40	50
			for impact resistance	AH3225	MJ						Vc = 250 sfm, fz = 0.012 ipt					
	Cold mold steels D2, etc.	50~60HRC	First choice	AH8005	MJ	160 - 230	0.004 - 0.012	0.004 - 0.012	0.001	1220	20	1110	20	1020	20	30
											Vc = 200 sfm, fz = 0.008 ipt					

- When chips stay in the cutting zone during slotting or pocketing, use air blast to remove chips from the work area
- Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed

APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXN03R062U0062...	0.625	0.035	Not possible	Not possible	0.15	Not possible	Not possible	0.480
EXN03R068U0062...	0.688	0.035	1.7°	0.011	0.15	0.991	1.339	0.560
EXN03R075U0075...	0.750	0.035	1.4°	0.011	0.15	1.132	1.496	0.638
EXN03R087U0075...	0.875	0.035	1.2°	0.011	0.15	1.371	1.654	0.716
EXN03R100U0100...	1.000	0.035	1°	0.011	0.15	1.610	1.890	0.835
EXN03R112U0100...	1.125	0.035	0.7°	0.011	0.15	1.857	2.126	0.953
EXN03R125U0125...	1.250	0.035	0.7°	0.011	0.15	2.104	2.441	1.110
TXN03R150U0075...	1.500	0.035	0.5°	0.011	0.15	2.750	3.070	1.425
TXN03R200U0075...	2.000	0.035	0.4°	0.011	0.15	3.540	3.858	1.819

For DCX above ø1.300", slot milling, ramping or contouring is not recommended as chips may be re-cut.

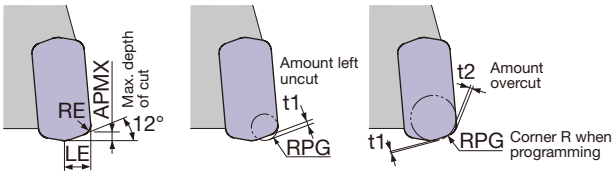
Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.020"

ø0.875"			ø1.000"			ø1.125"			ø1.250"			ø1.500"			ø2.000"			
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		
	CICT = 2	CICT = 3		CICT = 4	CICT = 5		CICT = 4	CICT = 5		CICT = 5	CICT = 6		CICT = 5	CICT = 6		CICT = 5	CICT = 8	CICT = 10
2880	240	350	2520	410	510	2240	360	450	2020	410	490	1680	340	410	1260	260	410	510
									Vc = 660 sfm, *fz* = 0.040 ipt									
2880	240	350	2520	410	510	2240	360	450	2020	410	490	1680	340	410	1260	260	410	510
									Vc = 660 sfm, *fz* = 0.040 ipt									
2180	140	200	1910	230	290	1700	210	260	1530	230	280	1270	200	230	960	150	240	290
									Vc = 500 sfm, *fz* = 0.030 ipt									
1660	90	130	1450	160	190	1290	140	170	1160	160	190	970	130	160	730	100	160	190
									Vc = 380 sfm, *fz* = 0.026 ipt									
1660	70	100	1450	120	150	1290	110	130	1160	120	140	970	100	120	730	80	120	150
									Vc = 380 sfm, *fz* = 0.020 ipt									
1440	50	70	1260	90	110	1120	80	90	1010	90	100	840	70	90	630	60	90	110
									Vc = 330 sfm, *fz* = .0016 ipt									
2880	240	350	2520	410	510	2240	360	450	2020	410	490	1680	340	410	1260	260	410	510
									Vc = 660 sfm, *fz* = 0.040 ipt									
2010	170	250	1760	290	360	1560	250	320	1410	290	340	1170	240	290	880	180	290	360
									Vc = 460 sfm, *fz* = 0.040 ipt									
650	30	40	570	50	60	510	50	60	460	50	60	380	40	50	290	30	50	60
									Vc = 150 sfm, *fz* = 0.020 ipt									
520	20	30	460	30	40	410	30	40	370	30	40	310	30	30	230	20	30	40
									Vc = 120 sfm, *fz* = 0.016 ipt									
1660	40	60	1450	70	90	1290	70	80	1160	70	90	970	60	70	730	50	80	90
									Vc = 380 sfm, *fz* = 0.012 ipt									
1090	30	40	960	50	60	850	50	60	760	50	60	640	40	50	480	30	50	60
									Vc = 250 sfm, *fz* = 0.012 ipt									
870	20	30	760	30	40	680	30	30	610	30	30	510	30	30	380	20	30	40
									Vc = 200 sfm, *fz* = 0.008 ipt									

- The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page
- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.059".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU0303UER...

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.035	0.039	0.138	0.039	0.019	-
0.035	0.039	0.138	0.059	0.015	-
0.035	0.039	0.138	0.079	0.012	0.005
0.035	0.039	0.138	0.098	0.008	0.012

Note: Each value in table is calculated theoretically at the maximum condition.

*Recommended

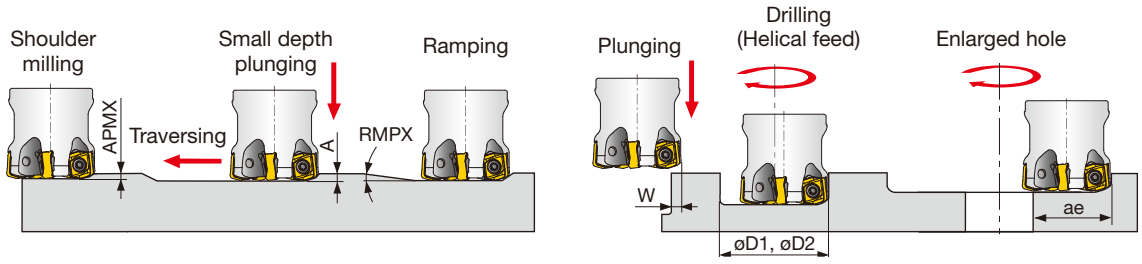
STANDARD CUTTING CONDITIONS

EXN06, TXN06

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool dia.: DCX (in) ø1.25" ~ ø6"	Plunging	ø1.25", CICT = 2 *n*	ø1.25", CICT = 2 *Vf*	ø1.5", CICT = 3 *n*	ø1.5", CICT = 3 *Vf*
P	Carbon steels (S45C / C45, S55C / C55, etc.)	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
	Alloy steels (SCM440 / 42CrMo4, etc.)	- 300HB	First choice	AH3225	MJ	330 - 660	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
	Prehardened steels (NAK80, PX5, etc.)	30 - 40HRC	First choice	AH3225	MJ	330 - 660	0.020 - 0.047	0.006	1,500	93	1,250	116
									Vc = 490 sfm, *fz* = 0.031 ipt			
		30 - 40HRC	for wear resistance	AH8015	MJ	330 - 660	0.020 - 0.060	0.006	1,500	120	1,250	150
									Vc = 490 sfm, *fz* = 0.040 ipt			
M	Stainless steels (SUS304 / X5CrNi18-9, etc.)	- 200HB	First choice	AH130	ML	260 - 490	0.012 - 0.031	0.004	1,190	57	990	71
									Vc = 390 sfm, *fz* = 0.024 ipt			
	Precipitation hardening stainless steels (SUS630 / X5CrNi-CuNb16-4)	28HRC - (H1150)	First choice	AH130	ML	260 - 490	0.008 - 0.020	0.004	1,190	29	990	36
			for impact resistance	AH130	MJ				*Vc* = 390 sfm, *fz* = 0.012 ipt			
		40HRC - (H900)	First choice	AH130	ML	260 - 390	0.004 - 0.012	0.004	1,010	16	840	20
			for impact resistance	AH130	MJ				*Vc* = 330 sfm, *fz* = 0.008 ipt			
K	Gray cast irons (FC250 / GG25 / 250, etc.)	150 - 250HB	First choice	AH120	MJ	330 - 980	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
		150 - 250HB	First choice	AH120	MJ	260 - 660	0.020 - 0.059	0.006	1,500	120	1,250	150
									Vc = 490 sfm, *fz* = 0.040 ipt			
S	Titanium alloy (Ti-6Al-4V, etc.)	- 40HRC	First choice	AH130	ML	100 - 200	0.012 - 0.028	0.003	400	16	330	20
			for impact resistance	AH130	MJ				*Vc* = 130 sfm, *fz* = 0.020 ipt			
	Heat-resistant alloy (Inconel, Hastelloy, etc.)	- 40HRC	First choice	AH8015	ML	70 - 160	0.004 - 0.012	0.002	310	5	250	6
			for impact resistance	AH725	ML				*Vc* = 100 sfm, *fz* = 0.008 ipt			
H	Hot mold steel (SKD61 / X40CrMoV5-1, etc.)	40 - 55HRC	First choice	AH8015	MH	260 - 490	0.004 - 0.020	0.002	1,190	29	990	36
			Low resistance	AH8015	MJ		0.004 - 0.012		*Vc* = 390 sfm, *fz* = 0.012 ipt			
	Hot mold steel of D.T.C materials (DAC**, DH**, DIEVER, etc)	40 - 55HRC	First choice	AH8015	MJ	160 - 330	0.004 - 0.012	0.002	790	13	660	16
			for impact resistance	AH8015	MH		0.004 - 0.020		*Vc* = 260 sfm, *fz* = 0.008 ipt			
	Cold mold steels (SKD11 / X153CrMoV12, etc.)	55 - 60HRC	First choice	AH8005	MH	160 - 230	0.002 - 0.012	0.001	610	5	510	6
									Vc = 200 sfm, *fz* = 0.004 ipt			
		55 - 60HRC	for impact resistance	AH8015	MH	160 - 230	0.002 - 0.012	0.001	610	2	510	3
									Vc = 200 sfm, *fz* = 0.002 ipt			

- The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.
- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXN06R125U...	ø1.250	0.059	2°	0.020	0.236	1.830	2.300	0.970
EXN06R150U...	ø1.500	0.059	1.5°	0.020	0.236	2.330	2.800	1.220
TXN06R200U...	ø2.000	0.059	0.9°	0.020	0.236	3.330	3.800	1.720
TXN06R250U...	ø2.500	0.059	0.6°	0.020	0.236	4.330	4.800	2.220
TXN06R300U...	ø3.000	0.059	0.5°	0.020	0.236	5.330	5.800	2.720

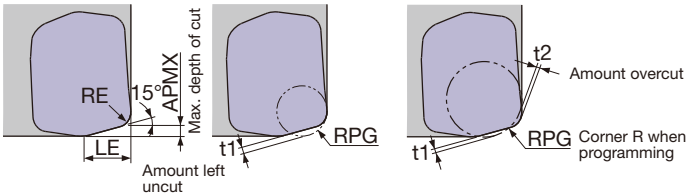
Note: For DCX above 4.000", slot milling, ramping or contouring is not recommended as chips may be re-cut.

Tool dia.: DCX (mm), Number of revolutions: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Max. depth of cut: *ap* = 1.5 mm, Number of teeth: CICT

ø2"			ø2.5"			ø3"			ø4"			ø5"			ø6"		
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
	CICT = 4	CICT = 5		CICT = 4	CICT = 6		CICT = 5	CICT = 7		CICT = 6	CICT = 10		CICT = 8	CICT = 12		CICT = 10	CICT = 14
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
940	117	146	750	93	140	620	96	135	470	87	146	370	92	138	310	96	135
							Vc = 490 sfm, *fz* = 0.031 ipt										
940	150	188	750	120	180	620	124	174	470	113	188	370	118	178	310	124	174
							Vc = 490 sfm, *fz* = 0.040 ipt										
740	71	89	600	58	86	500	60	84	370	53	89	300	58	86	250	60	84
							Vc = 390 sfm, *fz* = 0.024 ipt										
740	36	44	600	29	43	500	30	42	370	27	44	300	29	43	250	30	42
							Vc = 390 sfm, *fz* = 0.012 ipt										
630	20	25	500	16	24	420	17	24	320	15	26	250	16	24	210	17	24
							Vc = 330 sfm, *fz* = 0.008 ipt										
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
940	150	188	750	120	180	620	124	174	470	113	188	370	118	178	310	124	174
							Vc = 490 sfm, *fz* = 0.040 ipt										
250	20	25	200	16	24	170	17	24	120	14	24	100	16	24	80	16	22
							Vc = 130 sfm, *fz* = 0.020 ipt										
190	6	8	150	5	7	130	5	7	100	5	8	80	5	8	60	5	7
							Vc = 100 sfm, *fz* = 0.008 ipt										
740	36	44	600	29	43	500	30	42	370	27	44	300	29	43	250	30	42
							Vc = 390 sfm, *fz* = 0.012 ipt										
500	16	20	400	13	19	330	13	18	250	12	20	200	13	19	170	14	19
							Vc = 260 sfm, *fz* = 0.008 ipt										
380	6	8	310	5	7	250	5	7	190	5	8	150	5	7	130	5	7
							Vc = 200 sfm, *fz* = 0.004 ipt										
380	3	4	310	2	4	250	3	4	190	2	4	150	2	4	130	3	4
							Vc = 200 sfm, *fz* = 0.002 ipt										

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.118".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU06...

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.059	0.079	0.236	0.079	0.039	-
			0.118	0.030	-
			0.157	0.021	0.010

LNGU06...MH

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.059	0.079	0.236	0.079	0.035	-
			0.118	0.026	-
			0.157	0.016	0.010

Note: Each value in table is calculated theoretically at the maximum condition.

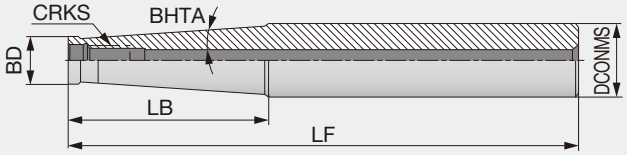
*Recommended

TUNGFLEX

SM

Steel modular shank





Metric	CRKS	DCONMS	LF	LB	BD	BHTA	Shank type
SM06-L60C10	M6	10	60	20	9.7	0°	Cylindrical
SM06-L105-C12	M6	12	105	60	9.7	1.2°	Cylindrical
SM06-L125-C16	M6	16	125	60	9.7	3.3°	Cylindrical
SM08-L73C16	M8	16	73	25	13	0°	Cylindrical
SM08-L128-C16	M8	16	128	80	13	0.9°	Cylindrical
SM08-L170-C20	M8	20	170	66.8	13	3.3°	Cylindrical
SM10-L80C20	M10	20	80	30	18	0°	Cylindrical
SM10-L130-C20	M10	20	130	80	18	0.6°	Cylindrical
SM10-L200-C25	M10	25	200	57.2	19	3.3°	Cylindrical
SM12-L86-C25	M12	25	86	30	21	5.1°	Cylindrical
SM12-L200-C32	M12	32	200	78	21	4.4°	Cylindrical
SM16-L95-C32	M16	32	95	35	29	1.7°	Cylindrical
SM16-L230-C32	M16	32	230	50	29	1.8°	Cylindrical

SM-C-H

Carbide modular shank



Fig. 1

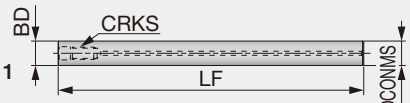


Fig. 2

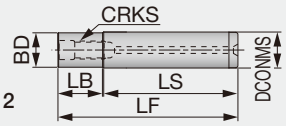
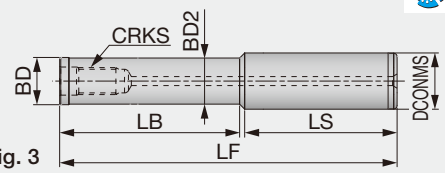


Fig. 3



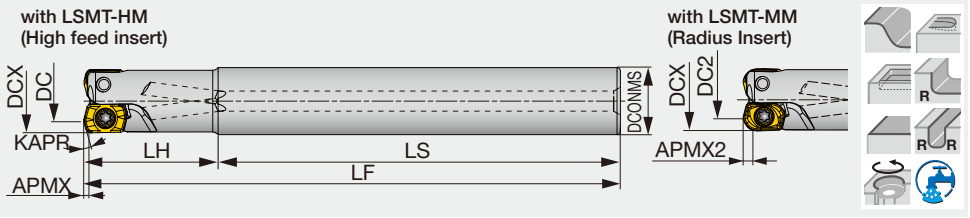
Metric	CRKS	DCONMS	LF	LB	LS	BD	BD2	Fig.
SM06-L100-C10-C-H	M6	10	100	-	-	10	-	1
SM06-L150-C10-C-H	M6	10	150	-	-	10	-	1
SM06-L100-C12-C-H	M6	12	100	-	-	12	-	1
SM06-L150-C12-C-H	M6	12	150	-	-	12	-	1
SM08-L80-20-C16-C-H	M8	16	80	20	59.6	15.3	-	2
SM08-L100-40-C16-C-H	M8	16	100	40	59.6	15.3	-	2
SM08-L150-80-C16-C-H	M8	16	150	80	69.6	15.3	-	2
SM08-L200-100-C16-C-H	M8	16	200	100	98.2	13	12.5	3
SM08-L200-140-C16-C-H	M8	16	200	140	59.6	15.3	-	2
SM08-L250-180-C16-C-H	M8	16	250	180	69.6	15.3	-	2
SM10-L80-20-C20-C-H	M10	20	80	20	59.2	18.5	-	2
SM10-L100-40-C20-C-H	M10	20	100	40	59.2	18.5	-	2
SM10-L150-80-C20-C-H	M10	20	150	80	69.2	18.5	-	2
SM10-L200-100-C20-C-H	M10	20	200	100	99.2	18.5	-	2
SM10-L200-140-C20-C-H	M10	20	200	140	58.7	18	17.5	3
SM10-L200-140-C20-C-H-N	M10	20	200	140	59.2	18.5	-	2
SM10-L250-130-C20-C-H	M10	20	250	130	118.7	18	17.5	3
SM10-L250-180-C20-C-H	M10	20	250	180	68.7	18	17.5	3
SM10-L250-180-C20-C-H-N	M10	20	250	180	69.2	18.5	-	2
SM10-L300-180-C20-C-H	M10	20	300	180	118.7	18	17.5	3
SM10-L300-230-C20-C-H	M10	20	300	230	68.7	18	17.5	3
SM12-L100-40-C25-C-H	M12	25	100	40	59.5	24	-	2
SM12-L150-80-C25-C-H	M12	25	150	80	67.7	21	20.5	3
SM12-L150-80-C25-C-H-N	M12	25	150	80	69.5	24	-	2
SM12-L200-100-C25-C-H	M12	25	200	100	97.7	21	20.5	3
SM12-L200-100-C25-C-H-N	M12	25	200	100	99.5	24	-	2
SM12-L200-140-C25-C-H	M12	25	200	140	57.7	21	20.5	3
SM12-L250-130-C25-C-H	M12	25	250	130	117.7	21	20.5	3
SM12-L250-180-C25-C-H	M12	25	250	180	69.5	24	-	2
SM12-L300-180-C25-C-H	M12	25	300	180	117.7	21	20.5	3
SM12-L300-180-C25-C-H-N	M12	25	300	180	119.5	24	-	2
SM12-L300-230-C25-C-H	M12	25	300	230	67.7	21	20.5	3
SM16-L100-40-C32-C-H	M16	32	100	40	58.5	29	-	2
SM16-L150-80-C32-C-H	M16	32	150	80	68.5	29	-	2
SM16-L200-100-C32-C-H	M16	32	200	100	98.5	29	-	2
SM16-L200-140-C32-C-H	M16	32	200	140	58.5	29	-	2
SM16-L250-130-C32-C-H	M16	32	250	130	118.5	29	-	2
SM16-L250-180-C32-C-H	M16	32	250	180	68.5	29	-	2
SM16-L300-180-C32-C-H	M16	32	300	180	118.5	29	-	2
SM16-L300-230-C32-C-H	M16	32	300	230	68.5	29	-	2
SM16-L350-230-C32-C-H	M16	32	350	230	118.5	29	-	2
SM16-L350-280-C32-C-H	M16	32	350	280	68.5	29	-	2

EXLS

Cylindrical type holder for high-feed milling, screw-on

GAMP = +4°, GAMF = -21° ~ -17°





Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCONMS	LS	LH	LF	KAPR	WT (lbs)	Air hole	Insert
EXLS02U0.37C0.31LH0.75R01	0.019	0.079	0.375	1	0.228	0.218	0.312	2.250	0.750	3.000	12°	0.066	With	LSMT02...
EXLS02U0.37C0.37LH0.75R01	0.019	0.079	0.375	1	0.228	0.218	0.375	2.250	0.750	3.000	12°	0.088	With	LSMT02...
EXLS02U0.37C0.37LH1.25R01	0.019	0.079	0.375	1	0.228	0.218	0.375	2.250	1.250	3.500	12°	0.110	With	LSMT02...
EXLS02U0.50C0.37LH0.75R03	0.019	0.079	0.500	3	0.354	0.343	0.375	2.250	0.750	3.000	12°	0.088	With	LSMT02...
EXLS02U0.50C0.50LH0.75R03	0.019	0.079	0.500	3	0.354	0.343	0.500	2.250	0.750	3.000	12°	0.132	With	LSMT02...
EXLS02U0.50C0.50LH2.00R02	0.019	0.079	0.500	2	0.354	0.343	0.500	2.250	2.000	4.250	12°	0.176	With	LSMT02...
EXLS02U0.62C0.62LH1.50R05	0.019	0.079	0.625	5	0.479	0.468	0.625	2.500	1.500	4.000	12°	0.308	With	LSMT02...
EXLS02U0.62C0.62LH2.00R03	0.019	0.079	0.625	3	0.479	0.468	0.625	2.500	2.000	4.500	12°	0.375	With	LSMT02...
EXLS02U0.75C0.75LH2.00R05	0.019	0.079	0.750	5	0.602	0.593	0.750	3.000	2.000	5.000	12°	0.529	With	LSMT02...
EXLS02U0.75C0.75LH2.00R06	0.019	0.079	0.750	6	0.602	0.593	0.750	3.000	2.000	5.000	12°	0.529	With	LSMT02...
EXLS02U0.75C0.75LH3.50R05	0.019	0.079	0.750	5	0.602	0.593	0.750	3.000	3.500	6.500	12°	0.683	With	LSMT02...
EXLS02U1.00C1.00LH2.50R06	0.019	0.079	1.000	6	0.850	0.843	1.000	3.000	2.500	5.500	12°	1.036	With	LSMT02...
EXLS02U1.00C1.00LH2.50R08	0.019	0.079	1.000	8	0.850	0.843	1.000	3.000	2.500	5.500	12°	1.036	With	LSMT02...
EXLS02U1.00C1.00LH4.00R06	0.019	0.079	1.000	6	0.850	0.843	1.000	3.000	4.000	7.000	12°	1.279	With	LSMT02...

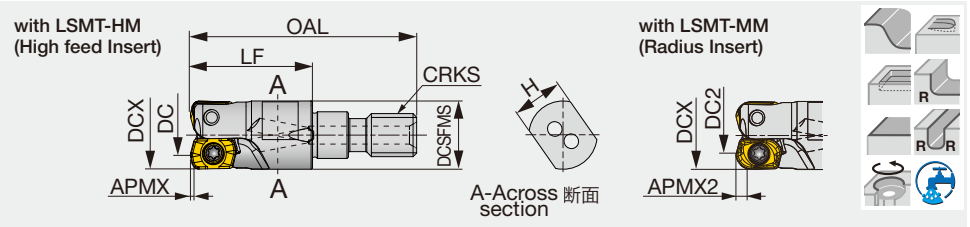
Metric	APMX	APMX2	DCX	CICT	DC	DC2	DCONMS	LS	LH	LF	KAPR	WT (kg)	Air hole	Insert
EXLS02M008C08.0LH16R01	0.5	2	8	1	4.29	4	8	59	16	75	12°	0.02	With	LSMT02...
EXLS02M008C08.0LH30R01	0.5	2	8	1	4.29	4	8	59	31	90	12°	0.03	With	LSMT02...
EXLS02M010C10.0LH20R02	0.5	2	10	2	6.28	6	10	60	20	80	12°	0.04	With	LSMT02...
EXLS02M010C10.0LH40R02	0.5	2	10	2	6.28	6	10	60	40	100	12°	0.05	With	LSMT02...
EXLS02M010C08.0LH20R02	0.5	2	10	2	6.28	6	8	60	20	80	12°	0.03	With	LSMT02...
EXLS02M012C12.0LH20R03	0.5	2	12	3	8.31	8	12	60	20	80	12°	0.06	With	LSMT02...
EXLS02M012C12.0LH50R02	0.5	2	12	2	8.31	8	12	60	50	110	12°	0.08	With	LSMT02...
EXLS02M012C10.0LH20R03	0.5	2	12	3	8.31	8	10	60	20	80	12°	0.04	With	LSMT02...
EXLS02M016C16.0LH30R05	0.5	2	16	5	12.31	12	16	70	30	100	12°	0.14	With	LSMT02...
EXLS02M016C16.0LH50R03	0.5	2	16	3	12.31	12	16	70	50	120	12°	0.17	With	LSMT02...
EXLS02M020C20.0LH50R05	0.5	2	20	5	16.29	16	20	80	50	130	12°	0.27	With	LSMT02...
EXLS02M020C20.0LH50R06	0.5	2	20	6	16.29	16	20	80	50	130	12°	0.27	With	LSMT02...
EXLS02M020C20.0LH80R05	0.5	2	20	5	16.29	16	20	80	80	160	12°	0.33	With	LSMT02...
EXLS02M025C25.0LH60R06	0.5	2	25	6	21.28	21	25	80	60	140	12°	0.45	With	LSMT02...
EXLS02M025C25.0LH60R08	0.5	2	25	8	21.28	21	25	80	60	140	12°	0.47	With	LSMT02...
EXLS02M025C25.0LH100R06	0.5	2	25	6	21.28	21	25	80	100	180	12°	0.57	With	LSMT02...

HXLS

Modular head for high-feed milling, screw-on (TungFlex)

GAMP = +4°, GAMF = -21° ~ -17°





Metric	APMX	APMX2	DCX	CICT	DC	DC2	OAL	LF	H	DCSFMS	CRKS	KAPR	WT (kg)	Air hole	Insert
HXLS02M008M06R01	0.5	2	8	1	4.29	4	33.5	19	7	9.5	M6	12°	0.01	With	LSMT02...
HXLS02M010M06R02	0.5	2	10	2	6.28	6	31.5	17	7	9.5	M6	12°	0.01	With	LSMT02...
HXLS02M012M06R03	0.5	2	12	3	8.31	8	31.5	17	7	10	M6	12°	0.01	With	LSMT02...
HXLS02M012M06R02	0.5	2	12	2	8.31	8	31.5	17	7	10	M6	12°	0.01	With	LSMT02...
HXLS02M016M08R05	0.5	2	16	5	12.31	12	40	23	10	13	M8	12°	0.03	With	LSMT02...
HXLS02M016M08R03	0.5	2	16	3	12.31	12	40	23	10	13	M8	12°	0.03	With	LSMT02...
HXLS02M020M10R05	0.5	2	20	5	16.29	16	49	30	15	17.8	M10	12°	0.05	With	LSMT02...
HXLS02M020M10R06	0.5	2	20	6	16.9	16	49	30	15	17.8	M10	12°	0.05	With	LSMT02...
HXLS02M025M12R06	0.5	2	25	6	21.28	21	52	30	17	20.8	M12	12°	0.08	With	LSMT02...
HXLS02M025M12R08	0.5	2	25	8	21.28	21	52	30	17	20.8	M12	12°	0.08	With	LSMT02...

SPARE PARTS





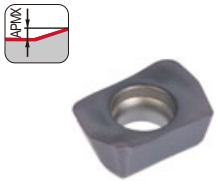
Designation	Clamping screw	Lubricant	Wrench
EXLS02U..., EXLS02M..., HXLS02M...	CSPB-2H	M-1000	IP-6DB

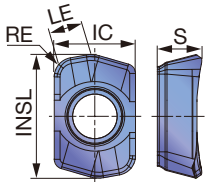
Recommended clamping torque: 0.52 lbs·ft, 0.7 N·m

Reference pages: Standard cutting conditions → H042 - H043, TungFlex → H038 - H039

INSERT

LSMT-HM (High feed)

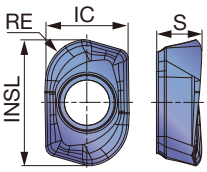




LSMT-MM (Radius)







P	Steel	★	☆
M	Stainless	★	
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials		★

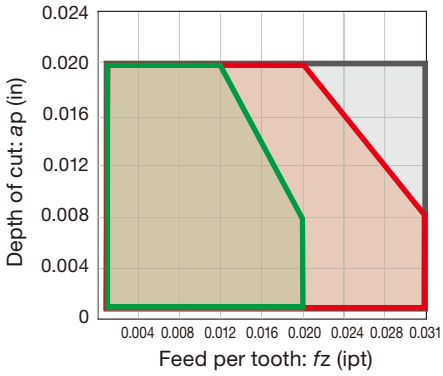
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH8015	LE	INSL	IC	S
LSMT0202ZER-HM	0.039	0.019	●	●	0.067	0.252	0.165	0.091
LSMT0202R2-MM	0.079	0.079	●	●	-	0.252	0.169	0.091

●: Line up

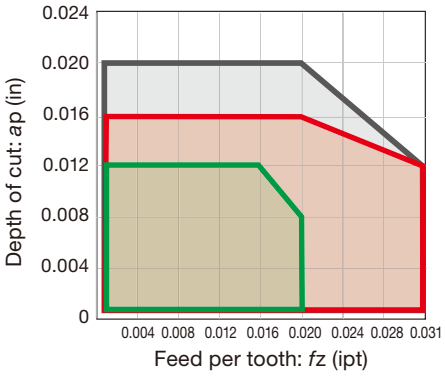
APPLICATION

LSMT-HM



- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

LSMT-MM



- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

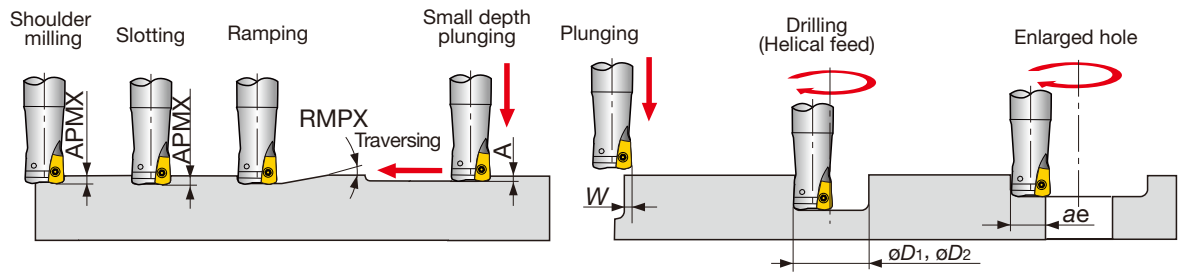
* When the DOC is 0.020" or more, the feed less than 0.006 ipt is recommended.

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.		- 300HB	First choice	AH3225	330 - 990	0.008 - 0.031
			- 300HB	For wear resistance	AH8015	330 - 990	0.008 - 0.031
	Alloy steels 4140, etc.		- 300HB	First choice	AH3225	330 - 990	0.008 - 0.031
			- 300HB	For wear resistance	AH8015	330 - 990	0.008 - 0.031
	Prehardened steels NAK80, PX5, etc.		30 - 40HRC	First choice	AH8015	330 - 660	0.008 - 0.020
			30 - 40HRC	For impact resistance	AH3225	330 - 660	0.008 - 0.020
M	Stainless steels 304, 316, etc.		- 200HB	First choice	AH3225	330 - 660	0.008 - 0.020
K	Gray cast irons No.250B, etc.		150 - 250HB	First choice	AH8015	330 - 990	0.008 - 0.031
			150 - 250HB	For impact resistance	AH3225	330 - 990	0.008 - 0.031
	Ductile cast irons 65-45-12, etc.		150 - 250HB	First choice	AH8015	260 - 660	0.008 - 0.031
			150 - 250HB	For impact resistance	AH3225	260 - 660	0.008 - 0.031
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3225	100 - 200	0.004 - 0.012
			- 40HRC	For wear resistance	AH8015	100 - 200	0.004 - 0.012
	Heat resistant alloy Inconel, Hastelloy, etc.		- 40HRC	First choice	AH8015	70 - 170	0.004 - 0.012
			- 40HRC	For impact resistance	AH3225	70 - 170	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH8015	260 - 490	0.004 - 0.020
		D2, D3, etc.	50 - 60HRC	First choice	AH8015	160 - 230	0.004 - 0.012

APPLICATION RANGE

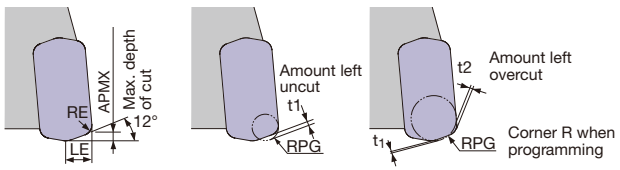
Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others



Inch	DC	Max. depth of cut APMX	Max. depth of cut APMX2	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machining ø*D*1	Max. machining ø*D*2	Max. cutting width in enlarged hole *ae*
EXLS02U0.37…	0.375	0.019	0.079	3.6°	0.007	0.078	0.513	0.730	0.292
EXLS02U0.50…	0.500	0.019	0.079	1.8°	0.007	0.078	0.763	0.980	0.417
EXLS02U0.62…	0.625	0.019	0.079	1.3°	0.007	0.078	1.013	1.230	0.542
EXLS02U0.75…	0.750	0.019	0.079	1.2°	0.007	0.078	1.260	1.460	0.660
EXLS02U1.00…	1.000	0.019	0.079	1.0°	0.007	0.078	1.760	1.960	0.910

APMX: with LSMT-HM, APMX2: with LSMT- MM

Tool geometry on programming



LSMT**-HM

Corner R when programming: RPG	Amount left uncut t1 (in)	Amount left overcut t2 (in)
0.039	0.006	0
0.059	0.003	0.006
0.079	0	0.013

*Recommended

Tool dia.: (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.020", Number of teeth: CICT

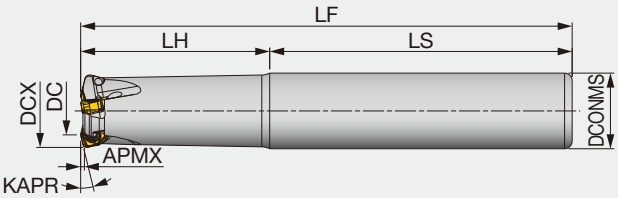
ø0.375", CICT = 1		ø0.5"			ø0.625"			ø0.750"			ø1.000"		
n	*Vf*	*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
			CICT = 2	CICT = 3		CICT = 3	CICT = 5		CICT = 5	CICT = 6		CICT = 5	CICT = 8
6682	134	5011	200	301	4009	241	401	3341	334	401	2506	301	401
						Vc = 656 sfm, *fz* = 0.020 ipt							
6682	134	5011	200	301	4009	241	401	3341	334	401	2506	301	401
						Vc = 656 sfm, *fz* = 0.020 ipt							
5011	80	3759	120	180	3007	144	241	2506	200	241	1879	180	241
						Vc = 492 sfm, *fz* = 0.016 ipt							
4013	64	3010	96	144	2408	116	193	2007	161	193	1505	144	193
						Vc = 394 sfm, *fz* = 0.016 ipt							
6682	134	5011	200	301	4009	241	401	3341	334	401	2506	301	401
						Vc = 656 sfm, *fz* = 0.020 ipt							
5011	100	3759	150	226	3007	180	301	2506	251	301	1879	225	301
						Vc = 492 sfm, *fz* = 0.020 ipt							
1334	11	1001	16	24	801	19	32	667	27	32	500	24	32
						Vc = 131 sfm, *fz* = 0.008 ipt							
998	8	749	12	18	599	14	24	499	20	24	374	18	24
						Vc = 98 sfm, *fz* = 0.008 ipt							
4013	48	3010	72	108	2408	87	144	2007	120	145	1505	108	144
						Vc = 394 sfm, *fz* = 0.012 ipt							
2007	16	1505	24	36	1204	29	48	1003	40	48	752	36	48
						Vc = 197 sfm, *fz* = 0.008 ipt							

EXWX03

High feed endmill, shank type, with screw clamp system

GAMP = +23°, GAMF = -7.9° ~ -6.2°





Inch	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	KAPR	WT(lb)	Air hole	Insert
EXWX03U0.62C0.62R02	0.039	0.625	2	0.3448	0.625	2.750	1.250	4.000	12°	0.31	With	WXMU03...
EXWX03U0.62C0.62R02L	0.039	0.625	2	0.3448	0.625	4.000	2.000	6.000	12°	0.46	With	WXMU03...
EXWX03U0.75C0.75R03	0.039	0.750	3	0.4645	0.750	3.000	2.000	5.000	12°	0.50	With	WXMU03...
EXWX03U0.75C0.75R03L	0.039	0.750	3	0.4645	0.750	3.000	3.500	6.500	12°	0.63	With	WXMU03...
EXWX03U1.00C1.00R04	0.039	1.000	4	0.7125	1.000	3.000	2.500	5.500	12°	1.05	With	WXMU03...
EXWX03U1.00C1.00R04L	0.039	1.000	4	0.7125	1.000	3.000	4.000	7.000	12°	1.31	With	WXMU03...
EXWX03U1.25C1.25R05	0.039	1.250	5	0.9606	1.250	3.000	3.000	6.000	12°	1.85	With	WXMU03...
EXWX03U1.25C1.25R05L	0.039	1.250	5	0.9606	1.250	3.000	5.000	8.000	12°	2.44	With	WXMU03...

Metric	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	KAPR	WT(kg)	Air hole	Insert
EXWX03M016C16.0R02	1	16	2	8.9	16	70	30	100	12°	0.14	With	WXMU03...
EXWX03M016C16.0R02L	1	16	2	8.9	16	100	50	150	12°	0.21	With	WXMU03...
EXWX03M020C20.0R03	1	20	3	12.8	20	80	50	130	12°	0.26	With	WXMU03...
EXWX03M020C20.0R03L	1	20	3	12.8	20	80	80	160	12°	0.31	With	WXMU03...
EXWX03M025C25.0R04	1	25	4	17.8	25	80	60	140	12°	0.46	With	WXMU03...
EXWX03M025C25.0R04L	1	25	4	17.8	25	80	100	180	12°	0.58	With	WXMU03...
EXWX03M032C32.0R05	1	32	5	24.7	32	80	70	150	12°	0.84	With	WXMU03...
EXWX03M032C32.0R05L	1	32	5	24.7	32	80	120	200	12°	1.11	With	WXMU03...

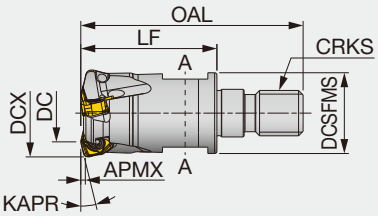
HXWX03-M

High feed endmill, modular type (TungFlex)

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

GAMP = +23°, GAMF = -7.9° ~ -6.2°







A-A cross section

Metric	APMX	DCX	CICT	DC	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXWX03M016M08R02	1	16	2	8.9	42	25	10	12.8	12°	M8	0.03	With	WXMU03...
HXWX03M020M10R03	1	20	3	12.8	49	30	15	17.8	12°	M10	0.06	With	WXMU03...
HXWX03M025M12R04	1	25	4	17.8	57	35	17	20.8	12°	M12	0.1	With	WXMU03...
HXWX03M032M16R05	1	32	5	24.7	63	40	22	28.8	12°	M16	0.21	With	WXMU03...

SPARE PARTS





Designation	Clamping screw	Wrench
EXWX03..., HXWX03...	CSPB-2.5SH	IP-7D

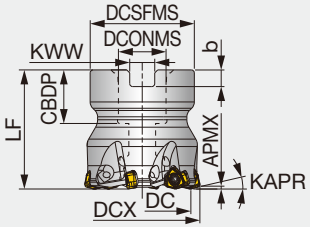
Recommended clamping torque: 0.81 lbs·ft, 1.1 N·m

Reference pages: Standard cutting conditions → H046 - H047, TungFlex → H038 - H039

High feed bore type milling with screw clamp system

GAMP = +23°, GAMF = -6.2° ~ -6.1°







Inch	APMX	DCX	CICT	DC	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	WT(lb)	Air hole	Insert
TXWX03U1.50B0.50R05	0.039	1.500	6	1.217	1.457	0.500	0.630	1.575	0.157	0.258	12°	0.53	With	WXMU03...
TXWX03U2.00B0.75R08	0.039	2.000	8	1.713	1.693	0.750	0.750	1.969	0.197	0.315	12°	0.96	With	WXMU03...

Metric	APMX	DCX	CICT	DC	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	WT(kg)	Air hole	Insert
TXWX03M040B16.0R06	1	40	6	32.7	35	16	18	40	5.6	8.4	12°	0.22	With	WXMU03...
TXWX03M050B22.0R08	1	50	8	42.7	47	22	20	50	6.3	10.4	12°	0.46	With	WXMU03...

SPARE PARTS





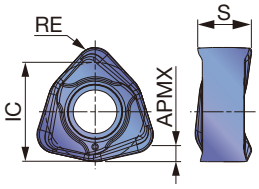
Designation	Clamping screw	Shell locking bolt	Wrench
TXWX03U1.50...	CSPB-2.5SH	(SR UNF 1/4X3/4 B18.3)	IP-7D
TXWX03U2.00...	CSPB-2.5SH	(C0.375X1.125H)	IP-7D
TXWX03M040...	CSPB-2.5SH	CM8X30H	IP-7D
TXWX03M050...	CSPB-2.5SH	CM10X30H	IP-7D

Recommended clamping torque: 0.81 lbs·ft, 1.1 N·m

INSERT

WXMU0303-MM





P	Steel	★	☆	
M	Stainless	★		
K	Cast iron	☆	★	
N	Non-ferrous			
S	Superalloy	☆	★	
H	Hard materials		★	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH8015	IC	S
WXMU0303ZER-MM	0.047	0.039	●	●	0.250	0.143

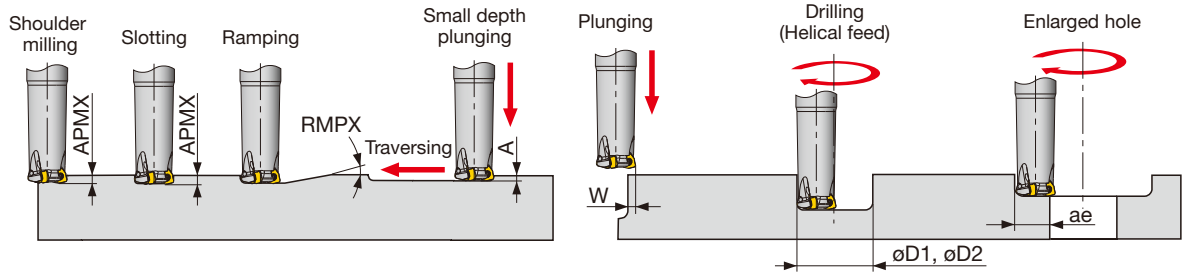
● : Line up

Reference pages: Standard cutting conditions → H046 - H047

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Chipbreaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, etc.		- 300HB	First choice	AH3225	MM	328 - 984	0.020 - 0.059
				For wear resistance	AH8015			
	Carbon steel, Alloy steel 1045, 1055, etc.		- 300HB	First choice	AH3225	MM	328 - 820	0.020 - 0.059
				For wear resistance	AH8015			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	MM	328 - 656	0.020 - 0.047
				For wear resistance	AH8015			
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3225	MM	262 - 492	0.020 - 0.039
	Martensitic Stainless steel S41000, 420SS, etc.		- 200HB	First choice	AH3225	MM	164 - 394	0.012 - 0.039
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH8015	MM	328 - 984	0.020 - 0.059
				For impact resistance	AH3225			
	Ductile cast iron 60-40-18, etc.		150 - 250HB	First choice	AH8015	MM	262 - 656	0.020 - 0.059
				For impact resistance	AH3225			
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3225	MM	98 - 197	0.012 - 0.028
	Superalloys Inconel718, etc.		- 40HRC	First choice	AH8015	MM	66 - 164	0.004 - 0.012
H	Hardened steel	H-13, etc.	40 - 50HRC	First choice	AH8015	MM	262 - 492	0.004 - 0.020
				For impact resistance	AH3225			
		D2, etc.	50 - 60HRC	First choice	AH8015	MM	164 - 230	0.001 - 0.004

APPLICATION RANGE



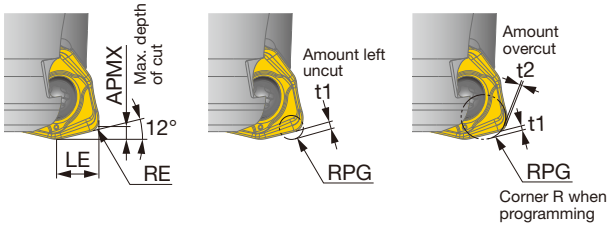
Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXWX03U0.62C0.62R02	0.625	0.039	3.6°	0.012	0.157	0.979	1.176	0.468
EXWX03U0.62C0.62R02L	0.625	0.039	3.6°	0.012	0.157	0.979	1.176	0.468
EXWX03U0.75C0.75R03	0.750	0.039	2.3°	0.012	0.157	1.196	1.511	0.593
EXWX03U0.75C0.75R03L	0.750	0.039	2.3°	0.012	0.157	1.196	1.511	0.593
EXWX03U1.00C1.00R04	1.000	0.039	1.4°	0.012	0.157	1.630	1.898	0.843
EXWX03U1.00C1.00R04L	1.000	0.039	1.4°	0.012	0.157	1.630	1.898	0.843
EXWX03U1.25C1.25R05	1.250	0.039	1°	0.012	0.157	2.116	2.392	1.093
EXWX03U1.25C1.25R05L	1.250	0.039	1°	0.012	0.157	2.116	2.392	1.093
TXWS03U150W0.75R06	1.500	0.039	0.7°	0.012	0.157	2.666	2.902	1.343
TXWS03U2.00W0.75R08	2.000	0.039	0.5°	0.012	0.157	3.457	3.850	1.843

Tool dia: DCX (in), Number of revolution: *n* (min^{-1}), Feed speed: *Vf* (ipm), Max. depth of cut: APMX = 0.039", Number of teeth: CICT

ø0.625", CICT = 2		ø0.750", CICT = 3		ø1.000", CICT = 4		ø1.250", CICT = 5		ø1.500", CICT = 6		ø2.000", CICT = 8	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
2995	168	2496	210	1872	210	1497	210	1248	210	936	210
					Vc = 490 sfm, *fz* = 0.028 ipt						
2384	95	1986	119	1490	119	1192	119	993	119	745	119
					Vc = 390 sfm, *fz* = 0.020 ipt						
2017	48	1681	61	1261	61	1008	60	840	60	630	60
					Vc = 330 sfm, *fz* = 0.012 ipt						
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
2995	234	2496	292	1872	292	1497	292	1248	292	936	292
					Vc = 490 sfm, *fz* = 0.039 ipt						
801	26	667	32	500	32	400	32	334	32	250	32
					Vc = 131 sfm, *fz* = 0.016 ipt						
599	10	499	12	374	12	299	12	250	12	187	12
					Vc = 98 sfm, *fz* = 0.008 ipt						
2384	57	1986	71	1490	72	1192	72	993	71	745	72
					Vc = 390 sfm, *fz* = 0.012 ipt						
1204	10	1003	12	752	12	602	12	502	12	376	12
					Vc = 197 sfm, *fz* = 0.004 ipt						

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.059".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.039	0.047	0.138	0.039	0.022	-
0.039	**0.047**	**0.138**	**0.059**	**0.018**	**-**
0.039	0.047	0.138	0.079	0.014	0.006
0.039	0.047	0.138	0.098	0.008	0.020

*Recommended

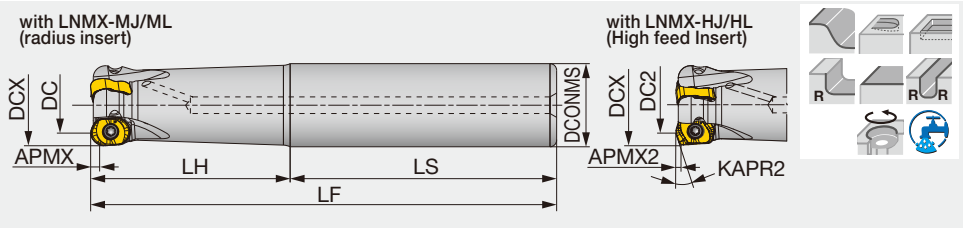
DO TWIST BALL

EXLN

Radius endmill, shank type cutter

GAMP= +3°, GAMF= -12° ~ -14°





Inch	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EXLN04U1.00C1.00R03	0.157	0.051	1.000	3	0.693	0.669	20°	1.000	3.000	2.500	5.500	1.00	With	LNMX04...
EXLN04U1.00C1.00R03L	0.157	0.051	1.000	3	0.693	0.669	20°	1.000	3.000	4.000	7.000	1.32	With	LNMX04...
EXLN04U1.25C1.25R04	0.157	0.051	1.250	4	0.941	0.917	20°	1.250	3.000	3.000	6.000	1.80	With	LNMX04...
EXLN04U1.25C1.25R05	0.157	0.051	1.250	5	0.941	0.917	20°	1.250	3.000	3.000	6.000	1.80	With	LNMX04...
EXLN04U1.25C1.25R05L	0.157	0.051	1.250	5	0.941	0.917	20°	1.250	3.000	5.000	8.000	2.38	With	LNMX04...
EXLN06U1.25C1.25R02	0.236	0.079	1.250	2	0.758	0.746	25°	1.250	3.000	3.000	6.000	1.90	With	LNMX06...
EXLN06U1.50C1.25R03	0.236	0.079	1.500	3	1.012	1.000	25°	1.250	4.000	2.000	6.000	2.06	With	LNMX06...

Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EXLN04M020C20.0R02	4	1.3	20	2	12.2	11.6	20°	20	80	50	130	0.28	With	LNMX04...
EXLN04M020C20.0R02L	4	1.3	20	2	12.2	11.6	20°	20	80	80	160	0.34	With	LNMX04...
EXLN04M025C25.0R03	4	1.3	25	3	17.2	16.6	20°	25	80	60	140	0.46	With	LNMX04...
EXLN04M025C25.0R03L	4	1.3	25	3	17.2	16.6	20°	25	80	100	180	0.6	With	LNMX04...
EXLN05M025C25.0R02	5	-	25	2	15	-	-	25	90	60	150	0.54	With	LNMX05...
EXLN04M032C32.0R04	4	1.3	32	4	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN04M032C32.0R05	4	1.3	32	5	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN04M032C32.0R05L	4	1.3	32	5	24.2	23.6	20°	32	80	120	200	1.09	With	LNMX04...
EXLN05M032C32.0R04	5	-	32	4	21.9	-	-	32	80	70	150	0.87	With	LNMX05...
EXLN06M032C32.0R02	6	2	32	2	19.6	19.3	25°	32	80	70	150	0.9	With	LNMX06...
EXLN06M040C32.0R04	6	2	40	4	27.6	27.3	25°	32	100	50	150	0.95	With	LNMX06...

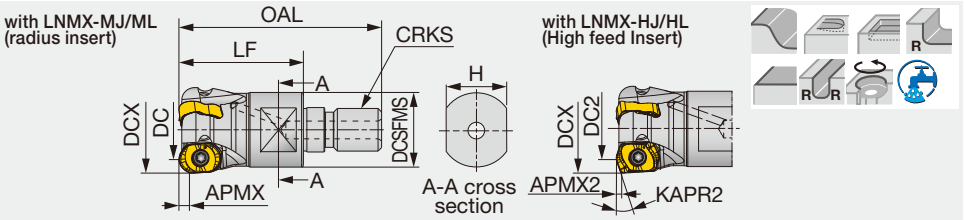
Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

HXLN04-M

Radius endmill, modular type (TungFlex)

GAMP= +3°, GAMF= -12° ~ -14°





Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HXLN04M020M10R02	4	1.3	20	2	12.2	11.6	20°	49	30	15	18	M10	0.07	With	LNMX04...
HXLN04M025M12R03	4	1.3	25	3	17.2	16.6	20°	57	35	17	21	M12	0.16	With	LNMX04...
HXLN05M025M12R02	5	-	25	2	15	-	-	57	35	17	21	M12	0.1	With	LNMX05...
HXLN04M032M16R04	4	1.3	32	4	24.2	23.6	20°	63	40	22	29	M16	0.2	With	LNMX04...
HXLN04M032M16R05	4	1.3	32	5	24.2	23.6	20°	63	40	22	29	M16	0.2	With	LNMX04...
HXLN05M032M16R04	5	-	32	4	21.9	-	-	63	40	22	28.8	M16	0.2	With	LNMX05...
HXLN06M032M16R02	6	2	32	2	19.6	19.3	25°	63	40	22	28.8	M16	0.24	With	LNMX06...
HXLN04M040M16R06	4	1.3	40	6	32.2	31.6	20°	63	40	22	29	M16	0.24	With	LNMX04...

SPARE PARTS






Designation	Clamping screw	Mono block wrench	Torx bit	Grip
EXLN04..., HXLN04...	CSPD-3	IP-10D	-	-
EXLN05..., HXLN05...	CSPB-4S	-	BLDIP15/S7	H-TB2W
EXLN06..., HXLN06...	CSPB-5	-	BLDIP20/S7	H-TB2W

Recommended clamping torque : CSPD-3 = 1.84 lbs·ft, 2.5 N·m, CSPB-4S = 2.58 lbs·ft, 3.5 N·m, CSPB-5 = 3.69 lbs·ft, 5 N·m

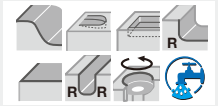
Reference pages: Inserts → H050, Standard cutting conditions → H050 - H051, TungFlex → H038 - H039

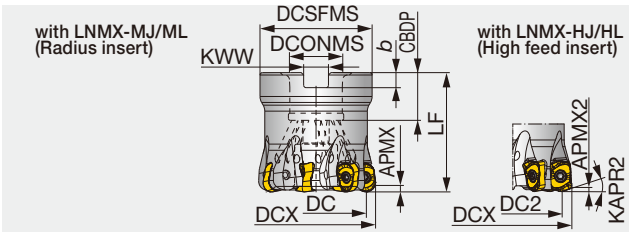
TXLN

Radius mill, bore type cutter



GAMP= +3°, GAMF= -13°





Inch	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TXLN04U1.50B0.50R06	0.157	0.051	1.500	6	1.193	1.169	20°	1.378	1.574	0.500	0.610	0.258	0.157	0.84	With	LNMX04...
TXLN04U2.00B0.75R07	0.157	0.051	2.000	7	1.693	1.669	20°	1.850	1.969	0.750	0.750	0.315	0.197	1.10	With	LNMX04...
TXLN06U2.00B0.75R05	0.236	0.079	2.000	5	1.511	1.499	25°	1.850	1.969	0.750	0.750	0.315	0.197	1.17	With	LNMX06...
TXLN06U2.50B0.75R06	0.236	0.079	2.500	6	2.009	1.997	25°	2.323	1.969	0.750	0.750	0.315	0.197	1.90	With	LNMX06...
TXLN06U3.00B1.00R07	0.236	0.079	3.000	7	2.510	2.498	25°	2.835	2.480	1.000	1.024	0.374	0.236	3.47	With	LNMX06...

Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXLN04M040B16.0R06	4	1.3	40	6	32.2	31.6	20	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN05M040B16.0R05	5	-	40	5	29.8	-	-	35	40	16	18	8.4	5.6	0.26	With	LNMX05...
TXLN04M042B16.0R06	4	1.3	42	6	34.2	33.6	20	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN04M050B22.0R07	4	1.3	50	7	42.2	41.6	20	47	50	22	20	10.4	6.3	0.45	With	LNMX04...
TXLN05M050B22.0R06	5	-	50	6	39.8	-	-	47	50	22	20	10.4	6.3	0.5	With	LNMX05...
TXLN06M050B22.0R05	6	2	50	5	37.6	37.3	25	47	50	22	20	10.4	6.3	0.5	With	LNMX06...
TXLN04M052B22.0R07	4	1.3	52	7	44.2	43.6	20	47	50	22	20	10.4	6.3	0.47	With	LNMX04...
TXLN06M052B22.0R05	6	2	52	5	39.6	39.3	25	49	50	22	20	10.4	6.3	0.55	With	LNMX06...
TXLN04M063B22.0R07	4	1.3	63	7	55.2	54.6	20	59	50	22	20	10.4	6.3	0.76	With	LNMX04...
TXLN06M063B22.0R06	6	2	63	6	50.6	50.3	25	59	50	22	20	10.4	6.3	0.82	With	LNMX06...

INCH SPARE PARTS



Designation	Clamping screw	Torx bit	Grip	Lubricant	Shell locking bolt
TXLN04U1.50B0.50R06	CSPD-3	BLD IP10/S7	H-TB2W	M-1000	(SR UNF 1/4X3/4 B18.3)
TXLN04U2.00B0.75R07	CSPD-3	BLD IP10/S7	H-TB2W	M-1000	(C0.375X1.125H)
TXLN06U2...	CSPD-5	BLD IP20/S7	H-TB2W	M-1000	(C0.375X1.125H)
TXLN06U3.00B1.00R07	CSPD-5	BLD IP20/S7	H-TB2W	M-1000	(C0.500X1.375H)

Recommended clamping torque : CSPD-3 = 1.84 lbs·ft, CSPB-5 = 3.69 lbs·ft

METRIC SPARE PARTS



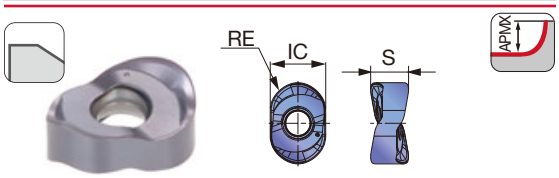
Designation	Clamping screw	Torx bit	Grip	Shell locking bolt
TXLN04M04*B16.0R06	CSPD-3	BLD IP10/S7	SW6-SD	FSHM8-30H
TXLN04M05*B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN04M063B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN05M040B16.0R05	CSPB-4S	BLDIP15/S7	H-TB2W	FSHM8-30H
TXLN05M050B22.0R06	CSPB-4S	BLDIP15/S7	H-TB2W	CM10X30H
TXLN06M050B22.0R05	CSPB-5	BLDIP20/S7	H-TB2W	FSHM10-40H
TXLN06M052..., TXLN06M063...	CSPB-5	BLDIP20/S7	H-TB2W	CM10X30H

Recommended clamping torque : CSPD-3 = 2.5 N·m, CSPB-4S = 3.5 N·m, CSPB-5 = 5 N·m

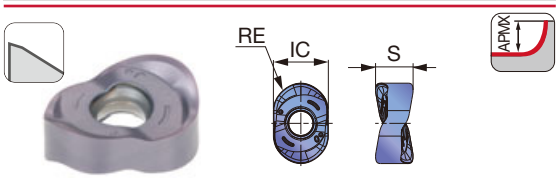
Reference pages: Inserts → H050, Standard cutting conditions → H050 - H051

INSERT

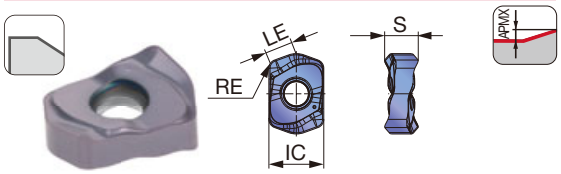
LNMX-MJ (Radius, for general purpose)



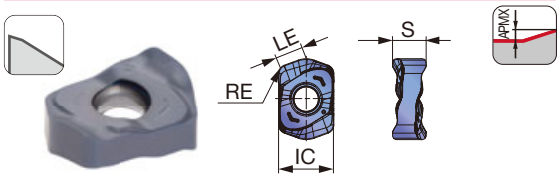
LNMX-ML (Radius, for low cutting force)



LNMX-HJ (High feed, for general purpose)



LNMX-HL (High feed, for low cutting force)



		Coated			
P	Steel	☆	★	☆	★
M	Stainless		★		★
K	Cast iron	★	☆	★	☆
N	Non-ferrous				
S	Superalloys	★	☆	★	☆
H	Hard materials	★	☆	☆	☆

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH8015	Coated AH3225	Coated AH120	Coated AH3135	LE	IC	S
LNMX0405R4-MJ	0.157	0.157	●	●	●	●	-	0.323	0.220
LNMX0405R4-ML	0.157	0.157			●	●	-	0.323	0.220
LNMX0405ZER-HJ	0.051	0.051	●	●	●	●	0.169	0.323	0.197
LNMX0405ZER-HL	0.051	0.051	●	●		●	0.169	0.323	0.197
LNMX0506R5-MJ	0.197	0.197	●	●	●	●	-	0.409	0.240
LNMX0607R6-MJ	0.236	0.236	●	●	●	●	-	0.496	0.291
LNMX0607ZER-HJ	0.079	0.079	●	●	●	●	0.264	0.500	0.283

● : Line up

STANDARD CUTTING CONDITIONS

FOR RADIUS (MJ, ML)

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.	- 200HB	First choice	AH3225	MJ	328 - 984	0.008 - 0.024
			Low cutting force	AH3135	ML	328 - 984	0.008 - 0.024
	Carbon steel, Alloy steel 1055, 4140, etc.	- 300HB	First choice	AH3225	MJ	328 - 820	0.008 - 0.024
			Low cutting force	AH3135	ML	328 - 820	0.008 - 0.024
	Prehardened steel NAK80, PX5, etc.	30 - 40HRC	First choice	AH3225	MJ	328 - 656	0.006 - 0.016
			Low cutting force	AH3135	ML	328 - 656	0.006 - 0.016
M	Austenitic Stainless steel 304SS, 316SS, etc.	- 200HB	First choice	AH3135	MJ	328 - 656	0.008 - 0.024
			Low cutting force	AH3135	ML	328 - 656	0.008 - 0.024
	Martensitic Stainless steel 420SS etc.	- 200HB	First choice	AH3135	ML	328 - 984	0.008 - 0.024
			Fracture resistance	AH3135	MJ	328 - 984	0.008 - 0.024
K	Gray cast iron Class 25, Class 30, etc.	150 - 250HB	First choice	AH120	MJ	328 - 984	0.008 - 0.024
			Fracture resistance	AH3225	MJ	328 - 984	0.008 - 0.024
	Ductile cast iron 60-40-18, 80-55-06, etc.	150 - 250HB	First choice	AH120	MJ	262 - 820	0.008 - 0.024
			Fracture resistance	AH3225	MJ	262 - 820	0.008 - 0.024
S	Titanium alloy Ti-6Al-4V, etc.	- 40HRC	First choice	AH3135	ML	98 - 197	0.006 - 0.024
			Fracture resistance	AH3135	MJ	98 - 197	0.006 - 0.024
	Superalloys Inconel718, etc.	- 40HRC	First choice	AH8015	MJ	66 - 164	0.002 - 0.012
			Low cutting force	AH120	ML	66 - 164	0.002 - 0.012
H	Hardened steel: H13, etc.	40 - 50HRC	First choice	AH3225	MJ	164 - 492	0.004 - 0.012
			Wear resistance	AH8015	MJ	164 - 492	0.004 - 0.012
	Hardened steel: D2, etc.	50 - 60HRC	First choice	AH8015	MJ	164 - 230	0.002 - 0.006

· When using a long shank or modular head with long overhang, please lower the cutting conditions (*Vc*, *fz*, *ap*) to 70% of the maximum conditions for the standard shank.

HIGH FEED (HJ, HL)

LNMX04-HJ/HL

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		- 300HB	First choice	AH3225	HJ	328 - 984	0.020 - 0.051
				Wear resistance	AH8015	HJ		
				Low cutting force	AH3225	HL		0.016 - 0.039
	Carbon steel, Alloy steel 1055, 4140, etc.		- 300HB	First choice	AH3225	HJ	328 - 820	0.020 - 0.051
				Wear resistance	AH8015	HJ		
				Low cutting force	AH3225	HL		0.016 - 0.039
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	HJ	328 - 656	0.016 - 0.039
				Wear resistance	AH8015	HJ		
				Low cutting force	AH3225	HL		0.008 - 0.031
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	HL	328 - 656	0.012 - 0.035
				Fracture resistance		HJ		
	Martensitic Stainless steel 420SS, etc.		- 200HB	First choice	AH3135	HL	328 - 984	0.012 - 0.035
				Fracture resistance		HJ		
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH120	HJ	328 - 984	0.020 - 0.051
				Fracture resistance	AH3225			
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	HJ	262 - 820	0.020 - 0.051
				Fracture resistance	AH3225			
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3135	HL	98 - 197	0.012 - 0.028
				Fracture resistance		HJ		
	Superalloys Inconel718, etc.		- 40HRC	First choice	AH8015	HL	66 - 164	0.004 - 0.012
				Fracture resistance		HJ		
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3225	HJ	164 - 492	0.004 - 0.020
				Wear resistance	AH8015			
		D2, etc.	50 - 60HRC	First choice	AH8015	HJ	164 - 230	0.002 - 0.008

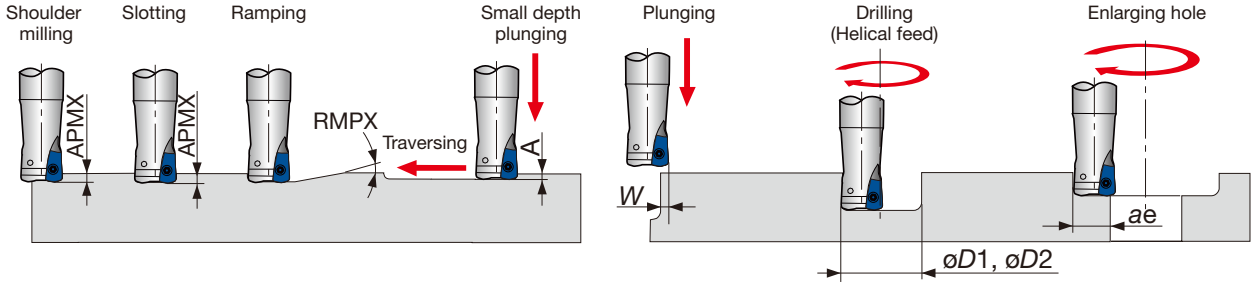
HIGH FEED (HJ, HL)

LNMX06-HJ

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		- 300HB	First choice	AH3225	HJ	328 - 984	0.012 - 0.043
				Wear resistance	AH8015			
	Carbon steel, Alloy steel 1055, 4140, etc.		- 300HB	First choice	AH3225	HJ	328 - 820	0.012 - 0.043
				Wear resistance	AH8015			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	HJ	328 - 656	0.008 - 0.028
				Wear resistance	AH8015			
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	HJ	328 - 656	0.008 - 0.028
	Martensitic Stainless steel 420SS, etc.		- 200HB	First choice	AH3135	HJ	328 - 984	0.008 - 0.028
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH120	HJ	328 - 984	0.012 - 0.043
				Fracture resistance	AH3225			
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	HJ	262 - 820	0.012 - 0.043
				Fracture resistance	AH3225			
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3135	HJ	98 - 197	0.006 - 0.024
	Superalloys Inconel718, etc.		- 40HRC	First choice	AH8015	HJ	66 - 164	0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3225	HJ	164 - 492	0.004 - 0.012
				Wear resistance	AH8015			
		D2, etc.	50 - 60HRC	First choice	AH8015	HJ	164 - 230	0.002 - 0.006

· When using a long shank or modular head with long overhang, please lower the cutting conditions (*Vc*, *fz*, *ap*) to 70% of the maximum conditions for the standard shank.

MACHINING APPLICATIONS



FOR RADIUS (MJ, ML)

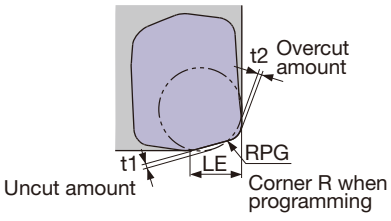
Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae
EXLN04U1.00...	1.000	0.157	3°	0.031	0.157	1.535	1.929	0.803
EXLN04U1.25...	1.250	0.157	1.9°	0.031	0.157	2.047	2.402	1.053
EXLN04U1.25C1.25R05	1.250	0.157	1.9°	0.031	0.157	2.047	2.402	1.053
TXLN04U1.50B0.50R06	1.500	0.157	1.2°	0.024	0.157	2.511	2.905	1.342
TXLN04U2.00B0.75R07	2.000	0.157	1°	0.027	0.157	3.496	3.889	1.842
EXLN06U1.25C01.25R02	1.250	0.236	3.7°	0.039	0.394	1.732	2.421	0.827
EXLN06U1.50C01.25R03	1.500	0.236	4°	0.067	0.394	2.165	2.921	1.063
TXLN06U2.00B0.75R05	2.000	0.236	2.7°	0.067	0.394	3.150	3.921	1.575
TXLN06U2.50B0.75R06	2.500	0.236	2.3°	0.079	0.394	4.134	4.921	2.047
TXLN06U3.00B1.00R07	3.000	0.236	1.6°	0.071	0.394	5.157	5.921	2.559

HIGH FEED (HJ, HL)

Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarging ae
EXLN04U1.00C1.00R03	1.000	0.051	3°	0.030	0.161	1.496	1.929	0.803
EXLN04U1.25C1.25R04	1.250	0.051	2°	0.030	0.161	2.008	2.441	1.053
EXLN04U1.25C1.25R05	1.250	0.051	2°	0.030	0.161	2.008	2.441	1.053
TXLN04U1.50B0.50R06	1.500	0.157	1.3°	0.024	0.161	2.456	2.905	1.342
TXLN04U2.00B0.75R07	2.000	0.157	1°	0.027	0.161	3.456	3.889	1.842
EXLN06U1.25C01.25R02	1.250	0.079	5.7°	0.055	0.433	1.614	2.421	0.787
EXLN06U1.50C01.25R03	1.500	0.079	4.3°	0.059	0.433	2.087	2.921	1.024
TXLN06U2.00B0.75R05	2.000	0.079	2.7°	0.063	0.433	3.110	4.000	1.535
TXLN06U2.50B0.75R06	2.500	0.079	2°	0.067	0.433	4.094	4.921	2.008
TXLN06U3.00B1.00R07	3.000	0.079	1.4°	0.067	0.433	5.079	5.921	2.520

TOOL GEOMETRY ON PROGRAMMING FOR HIGH FEED (HJ, HL)

The following table shows the amount left uncut (t1) and overcut (t2).



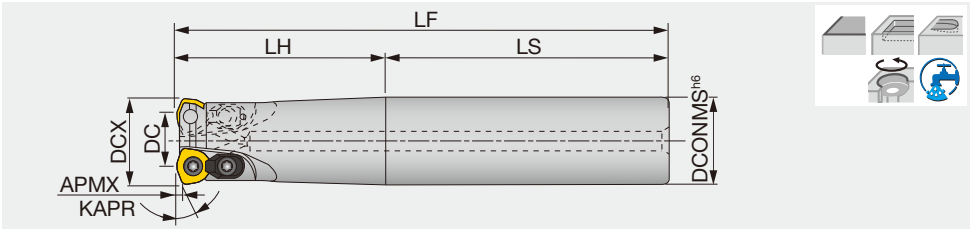
	Max. depth of cut APMX (in)	LE (in)	Programmed corner R (in)	Amount left uncut t1 (in)	Amount left overcut t2 (in)
LNMX04-HJ LNMX04-HL	0.051	0.161	R0.059	0.031	-
	0.051	0.161	R0.079	0.026	-
	0.051	0.161	R0.098	0.020	0.002
	0.051	0.161	R0.118	0.014	0.008
LNMX06-HJ	0.079	0.236	R0.079	0.055	-
	0.079	0.236	R0.118	0.043	-
	0.079	0.236	R0.138	0.036	-
	0.079	0.236	R0.157	0.029	0.002
	0.079	0.236	R0.197	0.016	0.014

MILLFEED
EXP05/06/08/09

High feed endmill cutter with double clamp system

GAMP = +5°, GAMF = -6°





Inch	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	Air hole	Insert	Shank
EXP05075RSU	0.060	0.750	2	0.480	0.750	4.031	2.000	2.031	15°	With	WPM*05...	Cylindrical
EXP05075RLU	0.060	0.750	2	0.480	0.750	7.000	2.000	2.031	15°	With	WPM*05...	Cylindrical
EXP05075RLLU	0.060	0.750	2	0.480	0.750	10.000	4.000	3.000	15°	With	WPM*05...	Cylindrical
EXP06100RSU	0.060	1.000	2	0.697	1.000	4.781	5.000	3.000	15°	With	WPM*06...	Cylindrical
EXP06100RLU	0.060	1.000	2	0.697	1.000	8.000	5.000	3.000	15°	With	WPM*06...	Cylindrical
EXP06100RLLU	0.060	1.000	2	0.697	1.000	12000	7.000	5.000	15°	With	WPM*06...	Cylindrical
EXP06125RSBU	0.060	1.250	3	0.929	1.250	5.281	3.000	2.281	20°	With	WPM*06...	Cylindrical
EXP06125RLBU	0.060	1.250	3	0.929	1.250	8.000	5.000	3.000	20°	With	WPM*06...	Cylindrical
EXP06125RLLBU	0.060	1.250	3	0.929	1.250	12.000	7.000	5.000	20°	With	WPM*06...	Cylindrical
EXP06150RSU	0.060	1.500	3	1.169	1.250	5.781	3.500	2.281	20°	With	WPM*06...	Cylindrical
EXP06150RLU	0.060	1.500	3	1.169	1.250	10.000	2.000	8.000	20°	With	WPM*06...	Cylindrical
EXP06150RLLU	0.060	1.500	3	1.169	1.250	12.000	2.000	10.000	20°	With	WPM*06...	Cylindrical
EXP09200RU	0.118	2.000	2	1.477	1.250	4.781	2.500	2.281	20°	With	WPMT09...	Cylindrical
EXP09200RLU	0.118	2.000	2	1.477	1.250	9.750	2.000	7.750	20°	With	WPMT09...	Cylindrical

Metric	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	Air hole	Insert	Shank
EXP05020RL	1.5	20	2	12.4	20	180	100	80	15°	With	WPM*05...	Cylindrical
EXP05020RLL	1.5	20	2	12.4	20	250	130	120	15°	With	WPM*05...	Cylindrical
EXP05020RS	1.5	20	2	12.4	20	130	50	80	15°	With	WPM*05...	Cylindrical
EXP05021RL	1.5	21	2	13.4	20	180	100	80	15°	With	WPM*05...	Cylindrical
EXP05021RLL	1.5	21	2	13.4	20	250	50	200	15°	With	WPM*05...	Cylindrical
EXP05021RS	1.5	21	2	13.4	20	130	50	80	15°	With	WPM*05...	Cylindrical
EXP06025RL	1.5	25	2	16.4	25	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06025RLL	1.5	25	2	16.4	25	300	180	120	20°	With	WPM*06...	Cylindrical
EXP06025RS	1.5	25	2	16.4	25	140	60	80	20°	With	WPM*06...	Cylindrical
EXP06026RL	1.5	26	2	17.4	25	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06026RLL	1.5	26	2	17.4	25	300	60	240	20°	With	WPM*06...	Cylindrical
EXP06026RS	1.5	26	2	17.4	25	140	60	80	20°	With	WPM*06...	Cylindrical
EXP06032RL	1.5	32	2	23.4	32	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06032RLB	1.5	32	3	23.4	32	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06032RLL	1.5	32	2	23.4	32	300	180	120	20°	With	WPM*06...	Cylindrical
EXP06032RS	1.5	32	2	23.4	32	150	70	80	20°	With	WPM*06...	Cylindrical
EXP06032RSB	1.5	32	3	23.4	32	150	70	80	20°	With	WPM*06...	Cylindrical
EXP06033RL	1.5	33	2	24.4	32	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06033RLB	1.5	33	3	24.4	32	200	120	80	20°	With	WPM*06...	Cylindrical
EXP06033RLL	1.5	33	2	24.4	32	300	70	230	20°	With	WPM*06...	Cylindrical
EXP06033RS	1.5	33	2	24.4	32	150	70	80	20°	With	WPM*06...	Cylindrical
EXP06033RSB	1.5	33	3	24.4	32	150	70	80	20°	With	WPM*06...	Cylindrical
EXP06040RL	1.5	40	3	31.4	32	250	50	200	20°	With	WPM*06...	Cylindrical
EXP06040RLL	1.5	40	3	31.4	32	300	50	250	20°	With	WPM*06...	Cylindrical
EXP06040RLS42	1.5	40	3	31.4	42	250	50	200	20°	With	WPM*06...	Cylindrical
EXP06040RS	1.5	40	3	31.4	32	150	50	100	20°	With	WPM*06...	Cylindrical
EXP08040RLA	1.5	40	2	28.6	32	250	50	200	10°	With	WPMT08...	Cylindrical
EXP08040RLL	1.5	40	2	28.6	32	300	50	250	10°	With	WPMT08...	Cylindrical
EXP08040RSA	1.5	40	2	28.6	32	150	50	100	10°	With	WPMT08...	Cylindrical
EXP09050RS	3	50	2	36.4	42	150	50	100	20°	With	WPMT09...	Cylindrical
EXP09050RL	3	50	2	36.4	42	250	50	200	20°	With	WPMT09...	Cylindrical

SPARE PARTS







Designation	Clamp set	Clamping screw	Lubricant	Wrench 1	Wrench 2
EXP05...	-	CSPB-3.5S	M-1000	IP-15D	-
EXP06...	CSY-15	CSPB-4S	M-1000	IP-15D	-
EXP08...	CSX20	CSTB-5	M-1000	-	T-20T
EXP09...	CSY-20	CSPB-5	M-1000	-	IP-20T

Recommended clamping torque: CSPB-3.5S/CSPB-4S = 2.58 lbs·ft, 3.5 N·m, CSTB-5/CSPB-5 = 3.69 lbs·ft, 5 N·m

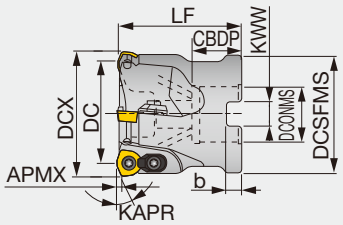
Reference pages: Inserts → H056, Standard cutting conditions → H057 - H058

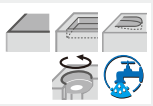
MILLFEED
TXP05/06/08/09

High feed bore type cutter with double clamp system

GAMP = +5°, GAMF = -4° - -6°







Inch	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	KAPR	WT(lb)	Air hole	Insert
TXP06200RBU	0.060	2.000	4	1.650	1.850	1.969	0.750	0.750	0.315	0.197	20°	1.10	With	WPM*06...
TXP08050RU	0.060	2.000	3	1.547	1.850	1.969	0.750	0.750	0.315	0.197	10°	0.87	Without	WPMT08...
TXP08200RU-A	0.060	2.000	3	1.547	1.850	1.969	0.750	0.750	0.315	0.197	10°	0.87	With	WPMT08...
TXP05250RBU	0.060	2.500	6	2.190	2.323	1.969	0.750	0.750	0.315	0.197	15°	1.76	With	WPM*05...
TXP06250RBU	0.060	2.500	5	2.150	2.323	1.969	0.750	0.750	0.315	0.197	20°	1.76	With	WPM*06...
TXP09250RU	0.118	2.500	3	1.971	2.323	1.969	0.750	0.750	0.315	0.197	20°	1.54	With	WPMT09...
TXP05300RBU	0.060	3.000	7	2.690	2.835	2.480	1.000	1.024	0.374	0.236	20°	3.31	With	WPM*05...
TXP06300RBU	0.060	3.000	6	2.650	2.835	2.480	1.000	1.024	0.374	0.236	20°	3.09	With	WPM*06...
TXP08300RU-A	0.060	3.000	5	2.547	2.835	2.480	1.000	1.024	0.375	0.236	10°	3.20	With	WPMT08...
TXP09300RU	0.118	3.000	4	2.470	2.835	2.480	1.000	1.024	0.374	0.236	20°	2.65	With	WPMT09...
TXP08400RU-A	0.060	4.000	6	3.547	3.819	2.480	1.500	1.260	0.625	0.394	10°	5.80	With	WPMT08...
TXP09400RU	0.118	4.000	5	3.471	3.780	2.480	1.500	1.457	0.626	0.394	20°	4.41	With	WPMT09...
TXP09500RU	0.118	5.000	6	4.471	3.780	2.480	1.500	1.457	0.626	0.394	20°	6.83	With	WPMT09...
TXP09600RU	0.118	6.000	7	5.471	4.331	2.480	2.000	1.496	0.748	0.433	20°	9.48	Without	WPMT09...

Metric	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	KAPR	WT(kg)	Air hole	Insert
TXP06050R	1.5	50	4	41.4	47	50	22	20	10	6	20	0.4	Without	WPM*06...
TXP06050R2	1.5	50	4	41.4	47	50	22.225	20	8	5	20	0.4	With	WPM*06...
TXP06050RA	1.5	50	4	41.4	47	50	22	20	10	6	20	0.4	With	WPM*06...
TXP08050R	1.5	50	3	38.6	47	50	22	19.5	10	6	10	0.4	With	WPMT08...
TXP08050R2	1.5	50	3	38.6	47	50	22.225	19.5	8	5	10	0.4	With	WPMT08...
TXP08050RA	1.5	50	3	38.6	47	50	22	19.5	10	6	10	0.4	With	WPMT08...
TXP08050R-E	1.5	50	3	38.6	47	50	22	20	10.4	6.3	10	0.4	Without	WPMT08...
TXP08052R-E	1.5	52	3	40.6	50	50	22	20	10.4	6.3	10	0.5	Without	WPMT08...
TXP05063RB-E	1.5	63	6	55.4	59	50	22	20	10.4	6.3	15	0.8	With	WPM*05...
TXP06063RB-E	1.5	63	5	54.4	59	50	22	20	10.4	6.3	20	0.7	With	WPM*06...
TXP08063R	1.5	63	4	51.6	59	50	22	20	10	6	10	0.7	With	WPMT08...
TXP08063R2	1.5	63	4	51.6	59	50	22.225	20	8	5	10	0.7	With	WPMT08...
TXP08063RA	1.5	63	4	51.6	59	50	22	20	10	6	10	0.7	With	WPMT08...
TXP08063R-E	1.5	63	4	51.6	59	50	22	20	10.4	6.3	10	0.7	Without	WPMT08...
TXP09063R	3	63	3	49.4	59	50	22	20	10	6	20	0.6	With	WPMT09...
TXP09063R2	3	63	3	49.4	59	50	22.225	20	8	5	20	0.6	With	WPMT09...
TXP09063R-E	3	63	3	49.4	59	50	22	20	10.4	6.3	20	0.6	Without	WPMT09...
TXP08066R-E	1.5	66	4	54.6	63	50	27	22	12.4	7	10	0.8	Without	WPM*06...
TXP05080RB-E	1.5	80	7	72.4	76	63	27	22	12.4	7	15	1.7	With	WPM*05...
TXP06080RB-E	1.5	80	6	71.4	76	63	27	22	12.4	7	20	1.6	With	WPM*06...
TXP08080R	1.5	80	5	68.6	76	63	31.75	32	12.7	8	10	1.4	With	WPMT08...
TXP08080RA	1.5	80	5	68.6	76	63	31.75	32	12.7	8	10	1.4	With	WPMT08...
TXP08080R-E	1.5	80	5	68.6	76	63	27	22	12.4	7	10	1.5	Without	WPM*06...
TXP09080R	3	80	4	66.4	76	63	31.75	32	12.7	8	20	1.3	With	WPMT09...
TXP09080R-E	3	80	4	66.4	76	63	27	22	12.4	7	20	1.3	Without	WPMT09...
TXP08100R	1.5	100	6	88.6	96	63	31.75	32	12.7	8	10	2.5	With	WPMT08...
TXP08100RA	1.5	100	6	88.6	96	63	31.75	32	12.7	8	10	2.5	With	WPMT08...
TXP08100R-E	1.5	100	6	88.6	96	63	32	25	14.4	8	10	2.5	With	WPM*06...
TXP09100R	3	100	5	86.4	96	63	31.75	32	12.7	8	20	2.4	With	WPMT09...
TXP09100R-E	3	100	5	86.4	96	63	32	25	14.4	8	20	2.4	Without	WPMT09...
TXP08125R	1.5	125	7	113.6	80	63	38.1	45	15.9	10	10	3.1	With	WPMT08...
TXP08125R-E	1.5	125	7	113.6	98	63	40	32	16.4	9	10	3.1	Without	WPMT08...
TXP09125R	3	125	6	111.4	98	63	38.1	38	15.9	10	20	3.1	With	WPMT09...
TXP09125R-E	3	125	6	111.4	98	63	40	32	16.4	9	20	2.9	Without	WPMT09...
TXP08160R	1.5	160	8	148.6	100	63	50.8	46	19	11	10	5.1	With	WPMT08...
TXP09160R	3	160	7	146.4	100	63	50.8	38	19	11	20	4.7	With	WPMT09...

Reference pages: Inserts → H056, Standard cutting conditions → H057 - H058

INCH SPARE PARTS








Designation	Clamp set	Clamping screw	Lubricant	Wrench	Wrench 1	Shell locking bolt (Optional parts)
TXP05250RBU	-	CSPB-3.5S	M-1000	IP-15D	-	(C0.375X1.125H)
TXP05300RBU	-	CSPB-3.5S	M-1000	IP-15D	-	(C0.500X1.375H)
TXP06200RBU, TXP06250RBU	CSY-15	CSPB-4S	M-1000	IP-15D	-	(C0.375X1.125H)
TXP06300RBU	CSY-15	CSPB-4S	M-1000	IP-15D	-	(C0.500X1.375H)
TXP08050RU, TXP08200RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(C0.375X1.125H)
TXP08300RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(C0.500X1.375H)
TXP08400RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(TMBA-0.750H)
TXP09250RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(C0.375X1.125H)
TXP09300RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(C0.500X1.375H)
TXP09400RU, TXP09500RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(TMBA-0.750H)
TXP09600RU	CSY-20	CSPB-5	M-1000	-	IP-20T	-

Recommended clamping torque: CSPB-3.5S/CSPB-4S = 2.58 lbs·ft, CSTB-5/CSPB-5 = 3.69 lbs·ft

METRIC SPARE PARTS







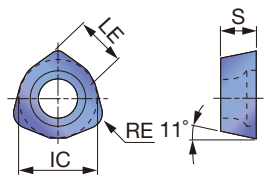



Designation	Clamp set	Clamping screw	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Shell locking bolt 3	Wrench 1	Wrench 2
TXP05063RB-E	CSY-15	CSPB-3.5S	M-1000	-	CM10X30H	-	IP-15D	-
TXP05080RB-E	CSY-15	CSPB-3.5S	M-1000	-	-	CAP-CM12X1.75X30	IP-15D	-
TXP06050R	CSY-15	CSPB-4S	M-1000	-	-	CAP-CM10X1.5X30	IP-15D	-
TXP06050R2, RA TXP06063RB-E	CSY-15	CSPB-4S	M-1000	-	CM10X30H	-	IP-15D	-
TXP06080RB-E	CSY-15	CSPB-4S	M-1000	-	CM12X30H	-	IP-15D	-
TXP08050R TXP0805*R-E	CSX20	CSTB-5	M-1000	-	-	FSHM10-40	-	T-20T
TXP08050R*	CSX20	CSTB-5	M-1000	-	FSHM10-40H	-	-	T-20T
TXP08063R	CSX20	CSTB-5	M-1000	-	-	CAP-CM10X1.5X30	-	T-20T
TXP08063R2 TXP08063RA	CSX20	CSTB-5	M-1000	-	CM10X30H	-	-	T-20T
TXP08063, 066R-E	CSX20	CSTB-5	M-1000	-	-	-	-	T-20T
TXP08080R TXP08100R	CSX20	CSTB-5	M-1000	-	-	CAP-CM16X2.0X40	-	T-20T
TXP08080RA TXP08100RA	CSX20	CSTB-5	M-1000	-	CM16X40H	-	-	T-20T
TXP08080R-E	CSX20	CSTB-5	M-1000	-	-	-	-	T-20T
TXP08100R-E	CSX20	CSTB-5	M-1000	-	-	-	-	IP-20T
TXP08125R	CSX20	CSTB-5	M-1000	TMBA-M20H	-	-	-	T-20T
TXP08160R	CSX20	CSTB-5	M-1000	TMBA-M24H	-	-	-	T-20T
TXP09063R*	CSY-20	CSPB-5	M-1000	-	CM10X30H	-	-	IP-20T
TXP09063R-E TXP09080R-E TXP09100R-E TXP09125R-E	CSY-20	CSPB-5	M-1000	-	-	-	-	IP-20T
TXP09080R TXP09100R	CSY-20	CSPB-5	M-1000	-	CM16X40H	-	-	IP-20T
TXP09125R	CSY-20	CSPB-5	M-1000	TMBA-M20H	-	-	-	IP-20T
TXP09160R	CSY-20	CSPB-5	M-1000	TMBA-M24H	-	-	-	IP-20T

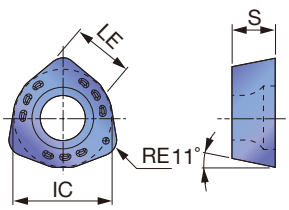
Recommended clamping torque: CSPB-3.5S/CSPB-4S = 3.5 N·m, CSTB-5/CSPB-5 = 5 N·m

INSERT

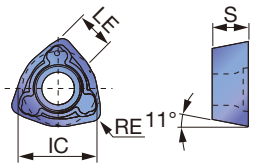
WPMW05/06



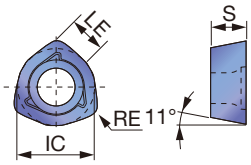
WPMT08/09



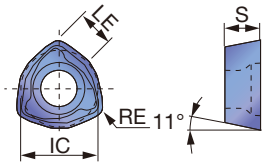
WPMT05/06/08/09-ML



WPMT05/06/08/09-MH



WPMT05/06/08/09-DML



		AH120	AH130	AH140	AH730	T3130	AH3135
P	Steel	☆				☆	★
M	Stainless		★	☆			★
K	Cast iron	★					
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials				★		

★ : First choice
☆ : Second choice

Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

Designation	RE	APMX	Coated						LE	IC	S
			AH120	AH130	AH140	AH730	T3130	AH3135			
WPMW05H315ZPR	0.059	0.060	●		●		●	●	0.197	0.3130	0.138
WPMT05H315ZPR-ML	0.059	0.060	●		●		●	●	0.197	0.3130	0.138
WPMT05H315ZPR-MH	0.059	0.060	●		●			●	0.197	0.3134	0.138
WPMT05H315ZPR-DML	0.059	0.060				●			0.197	0.3130	0.138
WPMW06X415ZPR	0.059	0.060	●		●		●	●	0.236	0.3750	0.165
WPMT06X415ZPR-ML	0.059	0.060	●	●	●		●	●	0.236	0.3750	0.165
WPMT06X415ZPR-MH	0.059	0.060	●		●			●	0.236	0.3755	0.165
WPMT06X415ZPR-DML	0.059	0.060				●			0.236	0.3750	0.165
WPMT080615ZSR	0.059	0.060	●	●	●		●	●	0.315	0.507	0.250
WPMT080615ZPR-ML	0.059	0.060	●	●	●		●	●	0.315	0.507	0.250
WPMT080615ZSR-MH	0.059	0.060	●		●			●	0.315	0.507	0.250
WPMT080615ZPR-DML	0.059	0.060				●			0.315	0.507	0.250
WPMT090725ZSR	0.098	0.118	●		●		●	●	0.354	0.591	0.276
WPMT090725ZPR-ML	0.098	0.118	●	●	●		●	●	0.354	0.591	0.276
WPMT090725ZSR-MH	0.098	0.118	●	●	●			●	0.354	0.591	0.276
WPMT090725ZPR-DML	0.098	0.118				●			0.354	0.591	0.276

●: Line up

Reference pages: Standard cutting conditions → H057 - H058

STANDARD CUTTING CONDITIONS

05·06 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø0.787", 0.827" (CICT = 2)	ø0.984", 1.024" (CICT = 2)	ø1.260", 1.299" (CICT = 2, 3)	ø1.575" (CICT = 3)	ø1.969" (CICT = 4)	ø2.480" (CICT = 5, 6)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 - 820	0.020 - 0.078	*Vc* = 500 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* (in) = 1×DCX	*Vc* = 500 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* (in) = 1×DCX				
					When plunging in small depth: *fz* = 0.008"					
P	Alloy steels 4140, etc. < 300 HB	AH3135	330 - 650	0.020 - 0.078	*Vc* = 425 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* (in) = 1×DCX	*Vc* = 425 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* (in) = 1×DCX				
					When plunging in small depth: *fz* = 0.008"					
P	Prehardened steels P20, H13, etc. 30 - 40HRC	AH3135	260 - 500	0.020 - 0.039	*Vc* = 330 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* (in) = 1×DCX	*Vc* = 330 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* (in) = 1×DCX				
					When plunging in small depth: *fz* = 0.004 ipt					
M	Stainless steels S30400, etc. - 200HB	AH130 (AH3135)	330 - 650	0.020 - 0.078	*Vc* = 425 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* (in) = 1×DCX	*Vc* = 425 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* (in) = 1×DCX				
					When plunging in small depth: *fz* = 0.008 ipt					
K	Cast irons 250, etc. 150 - 250HB	AH120	330 - 820	0.032 - 0.098	*Vc* = 500 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* (in) = 1×DCX	*Vc* = 590 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* (in) = 1×DCX				
					When plunging in small depth: *fz* = 0.008 ipt					
S	Titanium alloys Ti-6Al-4V, etc. - 40HRC	AH130	98 - 197	0.012 - 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.028", *ae* (in) = 0.5×DCX					
					When plunging in small depth: *fz* = 0.004 ipt					
S	Heat-resistant alloys Inconel 718, etc. - 40HRC	AH120	33 - 131	0.004 - 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.028", *ae* (in) = 0.5×DCX					
					When plunging in small depth: *fz* = 0.004 ipt					
H	Hard materials D2, etc. 40 - 50HRC	AH730	200 - 330	0.020 - 0.078	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.028", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.004 ipt					

08 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø1.575" (CICT = 2)	ø1.969" (CICT = 3)	ø2.480" (CICT = 4)	ø3.150" (CICT = 5)	ø3.937" (CICT = 6)	ø4.921" (CICT = 7)	ø6.299" (CICT = 8)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 - 820	0.020 - 0.078	*Vc* = 591 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 656 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt						
P	Alloy steels 4140, etc. < 300 HB	AH3135	330 - 650	0.020 - 0.078	*Vc* = 427 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 492 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt						
P	Prehardened steels P20, H13, etc. 30 - 40HRC	AH3135	260 - 500	0.020 - 0.039	*Vc* = 328 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 394 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.004 ipt						
M	Stainless steels S30400, etc. - 200HB	AH130 (AH3135)	330 - 650	0.020 - 0.078	*Vc* = 427 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 492 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt						
K	Cast irons 250, etc. 150 - 250HB	AH120	500 - 820	0.032 - 0.098	*Vc* = 591 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 656 sfm, *fz* = 0.079 ipt *ap* = 0.039", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt						
S	Titanium alloys Ti-6Al-4V, etc. - 40HRC	AH130	98 - 197	0.012 - 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.028", *ae* (in) = 0.5×DCX						
					When plunging in small depth: *fz* = 0.004 ipt						
S	Heat-resistant alloys Inconel 718, etc. - 40HRC	AH120	33 - 131	0.004 - 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.028", *ae* (in) = 0.5×DCX						
					When plunging in small depth: *fz* = 0.004 ipt						
H	Hard materials D2, etc. 40 - 50HRC	AH730	170 - 260	0.020 - 0.039	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.028", *ae* (in) = 1×DCX						
					When plunging in small depth: *fz* = 0.004 ipt						

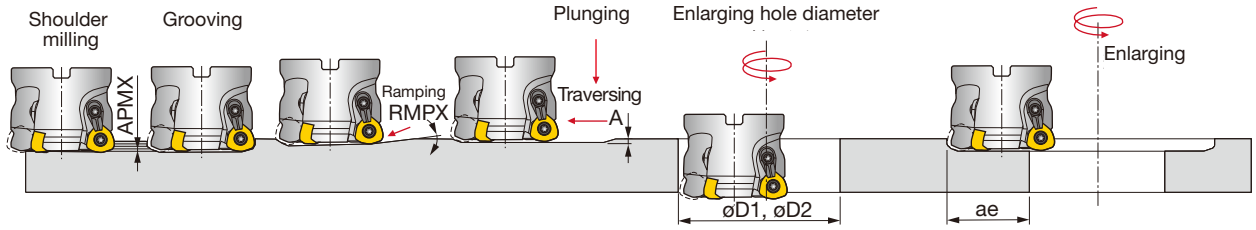
The above values of cutting speed show the standard speed when overhang length of tool is below 3D.
The cutting speed and the feed rate should be set at the lower limit values when overhang length of tool exceeds 3D.
Thick and heavy chips are discharged by these TAC mills. Use internal air supply or air-blowing in order to prevent tool failure.

09 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø2.000" (CICT = 2)	ø2.500" (CICT = 3)	ø3.000" (CICT = 4)	ø4.000" (CICT = 5)	ø5.000" (CICT = 6)	ø6.000" (CICT = 7)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 - 820	0.020 - 0.078	*Vc* = 650 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt					
	Alloy steels 4140, etc. < 300 HB	AH3135	330 - 650	0.020 - 0.078	*Vc* = 500 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt					
	Prehardened steels P20, H13, etc. 30 - 40HRC	AH3135	260 - 500	0.020 - 0.039	*Vc* = 3.94, *fz* = 0.031 ipt, *ap* = 0.079", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.004 ipt					
M	Stainless steels S30400, etc. - 200HB	AH130 (AH3135)	330 - 650	0.020 - 0.078	*Vc* = 500 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt					
K	Cast irons 250, etc. 150 - 250HB	AH120	500 - 820	0.032 - 0.098	*Vc* = 650 sfm, *fz* = 0.078 ipt, *ap* = 0.079", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.008 ipt					
S	Titanium alloys Ti-6Al-4V, etc. - 40HRC	AH130	98 - 197	0.012 - 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.059", *ae* (in) = 0.5×DCX					
					When plunging in small depth: *fz* = 0.039 ipt					
	Heat-resistant alloys Inconel 718, etc. - 40HRC	AH120	33 - 131	0.004 - 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.039", *ae* (in) = 0.5×DCX					
					When plunging in small depth: *fz* = 0.039 ipt					
H	Hard materials D2, etc. 40 - 50HRC	AH730	200 - 330	0.020 - 0.039	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.027", *ae* (in) = 1×DCX					
					When plunging in small depth: *fz* = 0.004 ipt					

The cutting speed and feed should be set to 70 to 80 % of the value shown in the above table when overhang length of tool exceeds 3D.

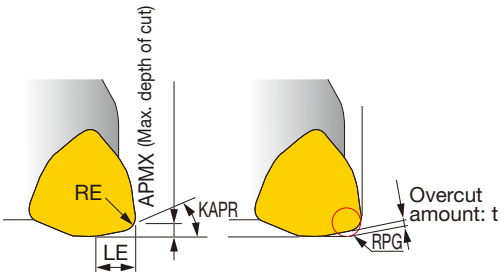
APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining hole dia. øD1	Max. machining hole dia. øD2	Max. cutting width in enlarging hole ae
TXP05250RBU	2.500	0.060	2° 30'	0.020	3.860	4.840	2.240
TXP05300RBU	3.000	0.060	1° 30'	0.020	5.200	6.180	2.910
TXP06250RBU	2.500	0.060	2°	0.040	3.860	4.840	2.240
TXP06200RBU	2.000	0.060	1° 30'	0.040	3.270	3.820	1.770
TXP06300RBU	3.000	0.060	1° 30'	0.040	5.200	6.180	2.910
TXP08050RU	2.000	0.060	4°	0.040	2.830	3.820	1.730
TXP08300RU-A	3.000	0.060	1° 30'	0.040	5.200	6.180	2.910
TXP08400RU-A	4.000	0.060	1°	0.040	6.770	7.760	3.700
TXP09250RU	2.500	0.118	2°	0.060	3.860	4.840	2.200
TXP09300RU	3.000	0.118	1° 30'	0.060	5.200	6.180	2.870
TXP09400RU	4.000	0.118	1°	0.060	6.770	7.760	3.660
TXP09500RU	5.000	0.118	0° 45'	0.060	8.740	9.720	4.650
TXP09600RU	6.000	0.118	0° 30'	0.060	11.500	12.480	6.020
EXP05075...	0.750	0.060	3°	0.020	1.181	1.457	0.630
EXP06100...	1.000	0.060	5°	0.039	1.299	1.850	0.787
EXP06125...	1.250	0.060	3° 30'	0.039	1.850	2.402	1.063
EXP06150...	1.500	0.060	2°	0.039	2.480	2.874	1.299

TOOL GEOMETRY FOR PROGRAMMING

When programming for CAD/CAM, the tool should be assumed to be a radius cutter shown in the table below.
In this case, the amount left as uncut (t) is shown below.



TXP	Max. depth of cut APMX	Corner of insert RE	Cutting edge angle KAPR	LE	t	Corner R when programming RPG
05	0.060	0.059	20°	0.150	0.020	R.078
06	0.060	0.059	20°	0.169	0.028	R.078
08	0.060	0.059	20°	0.224	0.028	R.078
09	0.118	0.098	20°	0.268	0.055	R.118
09	0.118	0.098	20°	0.268	0.047	R.157

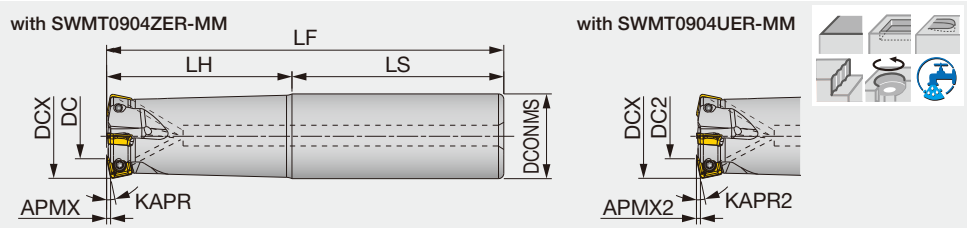
MILLQUAD FEED

EXSW09

High feed mill

GAMP = +3.9°, GAMF = -3.5°





Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	KAPR2	WT(lb)	Air hole	Insert
EXSW09U1.00C1.00R03	0.059	0.039	1.000	3	0.409	0.370	1.000	5.500	2.500	3.000	12°	7°	1.014	With	SWMT09...
EXSW09U1.00C1.00R03L	0.059	0.039	1.000	3	0.409	0.370	1.000	7.000	4.000	3.000	12°	7°	1.279	With	SWMT09...
EXSW09U1.25C1.25R04	0.059	0.039	1.250	4	0.657	0.618	1.250	6.000	3.000	3.000	12°	7°	1.786	With	SWMT09...
EXSW09U1.25C1.25R04L	0.059	0.039	1.250	4	0.657	0.618	1.250	8.000	5.000	3.000	12°	7°	2.359	With	SWMT09...

Metric	APMX	APMX2	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	KAPR2	WT(kg)	Air hole	Insert
EXSW09M025C25.0R03	1.5	1	25	3	10	9	25	140	60	80	12°	7°	0.45	With	SWMT09...
EXSW09M025C25.0R03L	1.5	1	25	3	10	9	25	180	100	80	12°	7°	0.57	With	SWMT09...
EXSW09M032C32.0R04	1.5	1	32	4	17	16	32	150	70	80	12°	7°	0.81	With	SWMT09...
EXSW09M032C32.0R04L	1.5	1	32	4	17	16	32	200	120	80	12°	7°	1.07	With	SWMT09...

SPARE PARTS





Designation	Clamping screw	Mono block wrench	Lubricant
EXSW09...	CSPD-3	IP-10D	M-1000

Recommended clamping torque: 1.84 lbs·ft, 2.5 N·m

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

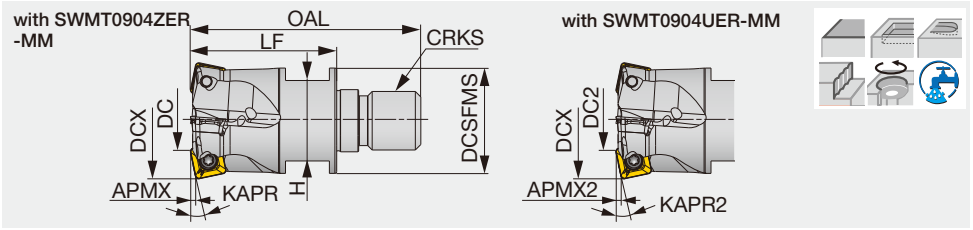
Reference pages: Inserts → H063, Standard cutting conditions → H064 - H065

HXSW09

High feed mill, modular type (TungFlex), for 4-corner single sided inserts

GAMP = +3.8°, GAMF = -3.5°





Metric	APMX	APMX2	DCX	CICT	DC	DC2	OAL	LF	H	DCSFMS	KAPR	KAPR2	CRKS	WT (kg)	Air hole	Insert
HXSW09M025M12R03	1.5	1	25	3	10	9	57	35	17	20.8	12°	7°	M12	0.09	With	SWMT09...
HXSW09M032M16R04	1.5	1	32	4	17	16	63	40	22	28.8	12°	7°	M16	0.18	With	SWMT09...

SPARE PARTS

Designation	Clamping screw	Mono block wrench	Lubricant
HXSW09...	CSPD-3	IP-10D	M-1000

Recommended clamping torque: 2.5 N·m

Reference pages: Inserts → H063, Standard cutting conditions → H064 - H065, TungFlex → H038 - H039

MILLQFEED UAD

TXSW

High feed mill

GAMP = +3.8°, GAMF = -3.5°



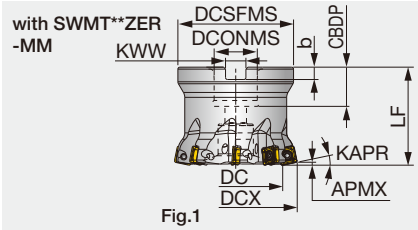


Fig.1

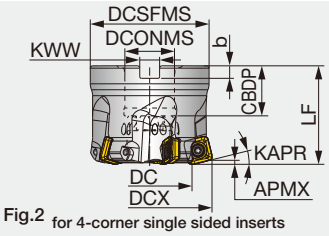


Fig.2 for 4-corner single sided inserts



Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCSFMS	DCONMS	CBDP	LF	KWW	b	KAPR	KAPR2	WT(lb)	Air hole	Insert	Fig.
TXSW09U1.50B0.50R04	0.059	0.039	1.500	4	0.909	0.870	1.378	0.500	0.630	1.575	0.258	0.157	12°	7°	0.40	With	SWMT09...	1
TXSW09U1.50B0.50R05	0.059	0.039	1.500	5	0.909	0.870	1.378	0.500	0.630	1.575	0.258	0.157	12°	7°	0.40	With	SWMT09...	1
TXSW09U2.00B0.75R05	0.059	0.039	2.000	5	1.406	1.366	1.772	0.750	0.750	1.969	0.315	0.197	12°	7°	0.82	With	SWMT09...	1
TXSW09U2.00B0.75R07	0.059	0.039	2.000	7	1.406	1.366	1.772	0.750	0.750	1.969	0.315	0.197	12°	7°	0.84	With	SWMT09...	1
TXSW15U2.00B0.75R03	0.098	0.079	2.000	3	0.929	0.905	1.850	0.750	0.750	1.969	0.315	0.197	14°	10°	0.95	With	SWMT15...	2
TXSW09U2.50B0.75R06	0.059	0.039	2.500	6	1.906	1.866	2.323	0.750	0.750	1.969	0.315	0.197	12°	7°	1.59	With	SWMT09...	1
TXSW09U2.50B0.75R08	0.059	0.039	2.500	8	1.906	1.866	2.323	0.750	0.750	1.969	0.315	0.197	12°	7°	1.61	With	SWMT09...	1
TXSW15U2.50B0.75R04	0.098	0.079	2.500	4	1.480	1.405	2.323	0.750	0.750	1.969	0.315	0.197	14°	10°	1.52	With	SWMT15...	2
TXSW09U3.00B1.00R07	0.059	0.039	3.000	7	2.406	2.366	2.835	1.000	1.024	2.480	0.374	0.236	12°	7°	3.00	With	SWMT09...	1
TXSW09U3.00B1.00R10	0.059	0.039	3.000	10	2.406	2.366	2.835	1.000	1.024	2.480	0.374	0.236	12°	7°	3.06	With	SWMT09...	1
TXSW15U3.00B1.00R05	0.098	0.079	3.000	5	1.980	1.905	2.835	1.000	1.024	2.480	0.374	0.236	14°	10°	2.71	With	SWMT15...	2
TXSW09U4.00B1.50R08	0.059	0.039	4.000	8	3.406	3.366	3.819	1.500	1.181	2.480	0.626	0.394	12°	7°	4.67	With	SWMT09...	1
TXSW15U4.00B1.50R06	0.098	0.079	4.000	6	2.980	2.905	3.819	1.500	1.063	2.480	0.626	0.394	14°	10°	4.87	With	SWMT15...	2
TXSW15U5.00B1.50R07	0.098	0.079	5.000	7	3.980	3.905	3.819	1.500	1.614	2.480	0.626	0.394	14°	10°	6.37	With	SWMT15...	2
TXSW15U6.00B2.00R08	0.098	0.079	6.000	8	4.980	4.905	4.331	2.000	1.496	2.480	0.748	0.433	14°	10°	8.29	With	SWMT15...	2

Metric	APMX	APMX2	DCX	CICT	DC	DC2	DCSFMS	DCONMS	CBDP	LF	KWW	b	KAPR	KAPR2	WT(kg)	Air hole	Insert	Fig.
TXSW09M040B16.0R04	1.5	1	40	4	25	24	38	16	18	40	8.4	5.6	12°	7°	0.2	With	SWMT09...	1
TXSW09M040B16.0R05	1.5	1	40	5	25	24	38	16	18	40	8.4	5.6	12°	7°	0.2	With	SWMT09...	1
TXSW09M050B22.0R05	1.5	1	50	5	35	34	47	22	20	50	10.4	6.3	12°	7°	0.37	With	SWMT09...	1
TXSW09M050B22.0R07	1.5	1	50	7	35	34	47	22	20	50	10.4	6.3	12°	7°	0.38	With	SWMT09...	1
TXSW15M050B22.0R03	2.5	2	50	3	24.1	22.2	47	22	20	50	10.4	6.3	14°	10°	0.4	With	SWMT15...	2
TXSW09M052B22.0R05	1.5	1	52	5	37	36	49	22	20	50	10.4	6.3	12°	7°	0.42	With	SWMT09...	1
TXSW09M052B22.0R07	1.5	1	52	7	37	36	49	22	20	50	10.4	6.3	12°	7°	0.38	With	SWMT09...	1
TXSW09M063B22.0R06	1.5	1	63	6	48	47	59	22	20	50	10.4	6.3	12°	7°	0.69	With	SWMT09...	1
TXSW09M063B22.0R08	1.5	1	63	8	48	47	59	22	20	50	10.4	6.3	12°	7°	0.7	With	SWMT09...	1
TXSW15M063B22.0R04	2.5	2	63	4	37.1	35.2	59	22	20	50	10.4	6.3	14°	10°	0.66	With	SWMT15...	2
TXSW15J080B31.7R05	2.5	2	80	5	54.1	52.2	76	31.75	32	63	12.7	8	14°	10°	1.31	With	SWMT15...	2
TXSW15M080B27.0R05	2.5	2	80	5	54.1	52.2	76	27	22	63	12.4	7	14°	10°	1.41	With	SWMT15...	2
TXSW15J100B31.7R06	2.5	2	100	6	74.1	72.2	96	31.75	32	63	12.7	8	14°	10°	2.25	With	SWMT15...	2
TXSW15M100B32.0R06	2.5	2	100	6	74.1	72.2	96	32	25	63	14.4	8	14°	10°	2.26	With	SWMT15...	2
TXSW15J125B38.1R07	2.5	2	125	7	99.1	97.2	100	38.1	43	63	15.9	10	14°	10°	2.91	With	SWMT15...	2
TXSW15M125B40.0R07	2.5	2	125	7	99.1	97.2	100	40	37	63	16.4	9	14°	10°	2.83	With	SWMT15...	2
TXSW15J160B50.8R08	2.5	2	160	8	134.1	132.2	100	50.8	46	63	19	11	14°	10°	3.93	With	SWMT15...	2
TXSW15M160B40.0R08	2.5	2	160	8	134.1	132.2	100	40	37	63	16.4	9	14°	10°	4.23	With	SWMT15...	2

Approach angle

7°-25°

41°-45°

60°-70°

85°-88°

90°

Others

INCH SPARE PARTS









Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Shell locking bolt 3	Torx bit
TXSW09U1.50...	CSPD-3	H-TB2W	M-1000	-	-	(SR UNF 1/4X3/4 B18.3)	BLDIP10/S7
TXSW09U2.00...	CSPD-3	H-TB2W	M-1000	-	(C0.375X1.125H)	-	BLDIP10/S7
TXSW09U2.50...	CSPD-3	H-TB2W	M-1000	-	(C0.375X1.125H)	-	BLDIP10/S7
TXSW09U3.00...	CSPD-3	H-TB2W	M-1000	-	(C0.500x1.375H)	-	BLDIP10/S7
TXSW09U4.00...	CSPD-3	H-TB2W	M-1000	(TMBA-0.750H)	-	-	BLDIP10/S7
TXSW15U2.00B0.75R03	TS50115I	H-TB2W	M-1000	-	-	SR 5/16-32UNEF_3/8-24UNF	BT20S
TXSW15U2.50B0.75R04	TS50115I	H-TB2W	M-1000	-	(SD-06-A6)	-	BT20S
TXSW15U3.00B1.00R05	TS50115I	H-TB2W	M-1000	-	(C0.500x1.375H)	-	BT20S
TXSW15U4.00B1.50R06	TS50115I	H-TB2W	M-1000	-	(SD-12-99)	-	BT20S
TXSW15U5.00B1.50R07	TS50115I	H-TB2W	M-1000	(TMBA-0.750H)	-	-	BT20M
TXSW15U6.00B2.00R08	TS50115I	H-TB2W	M-1000	-	-	-	BT20M

Recommended clamping torque: CSPD-3 = 1.84 lbs·ft, TS50115I = 3.69 lbs·ft

Reference pages: Inserts → H063, Standard cutting conditions → H064 - H065

METRIC SPARE PARTS

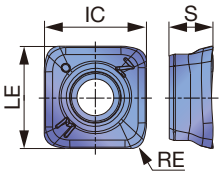
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Shell locking bolt 3	Torx bit
TXSW09M04...	CSPD-3	H-TB2W	M-1000	-	FSHM8-30H	-	BLDIP10/S7
TXSW09M05...	CSPD-3	H-TB2W	M-1000	-	FSHM10-40H	-	BLDIP10/S7
TXSW09M06...	CSPD-3	H-TB2W	M-1000	-	CM10X30H	-	BLDIP10/S7
TXSW15M050B22.0R03	TS50115I	H-TB2W	M-1000	-	-	SRPS118-0273	BT20S
TXSW15M063B22.0R04	TS50115I	H-TB2W	M-1000	-	FSHM10-40H	-	BT20S
TXSW15J080B31.7R05	TS50115I	H-TB2W	M-1000	-	CM16X40H	-	BT20S
TXSW15M080B27.0R05	TS50115I	H-TB2W	M-1000	-	CM12X30H	-	BT20S
TXSW15*100B...	TS50115I	H-TB2W	M-1000	-	CM16X40H	-	BT20S
TXSW15*125B...	TS50115I	H-TB2W	M-1000	TMBA-M20H	-	-	BT20M
TXSW15J160B50.8R08	TS50115I	H-TB2W	M-1000	TMBA-M24H	-	-	BT20M
TXSW15M160B40.0R08	TS50115I	H-TB2W	M-1000	TMBA-M20H	-	-	BT20M

Recommended clamping torque: CSPD-3 = 2.5 N·m, TS50115I = 5 N·m

INSERT

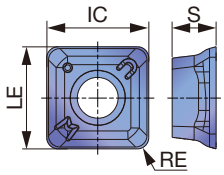
SWMT09/15ZER-MM (for general purpose)





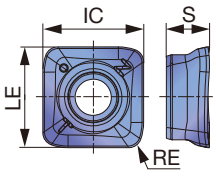
SWMT09/15UER-MM (for general purpose)





SWMT15ZER-MT (Robust cutting edges)





P	Steel		☆	★		
M	Stainless	★	☆	☆		
K	Cast iron		☆	☆	★	
N	Non-ferrous					
S	Titanium	★	☆			
S	Heat resistant alloy				☆	★
H	Hard materials			☆	☆	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH130	AH3135	AH3225	AH120	AH8015	LE	IC	S
SWMT0904ZER-MM	0.039	0.059	●	●	●	●	●	0.339	0.339	0.157
SWMT0904UER-MM	0.039	0.039	●	●	●	●	●	0.356	0.356	0.157
SWMT1506ZER-MM	0.079	0.098		●		●		0.630	0.630	0.268
SWMT1506UER-MM	0.079	0.079		●				0.641	0.641	0.268
SWMT1506ZER-MT	0.079	0.098		●		●		0.627	0.627	0.268

● : Line up

Reference pages: Standard cutting conditions → H064 - H065

STANDARD CUTTING CONDITIONS

09 type

ISO	Workpiece material		Hardness	Priority	Insert type	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1045, 1055, etc.		- 300HB	First choice	ZER	AH3225	MM	328 - 984	0.02 - 0.059
				Fracture resistance	ZER	AH3135	MM	328 - 984	0.02 - 0.059
				Wear resistance	UER	AH3225	MM	328 - 984	0.02 - 0.059
	Alloy steel 4140, etc.		- 300HB	First choice	ZER	AH3225	MM	328 - 656	0.02 - 0.059
				Fracture resistance	ZER	AH3135	MM	328 - 656	0.02 - 0.059
				Wear resistance	UER	AH3225	MM	328 - 656	0.02 - 0.059
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	ZER	AH3225	MM	328 - 656	0.02 - 0.047
				Fracture resistance	ZER	AH3135	MM	328 - 656	0.02 - 0.047
				Wear resistance	UER	AH3225	MM	328 - 656	0.02 - 0.047
M	Austenitic stainless steel 304SS, etc.		- 200HB	First choice	UER	AH3135	MM	328 - 492	0.02 - 0.047
				Fracture resistance	UER	AH130	MM	328 - 492	0.02 - 0.047
				Low cutting force	ZER	AH3135	MM	328 - 492	0.02 - 0.047
	Precipitation hardening stainless steel 17-4 PH, etc.		28HRC - (H1150)	First choice	UER	AH3135	MM	262 - 492	0.012 - 0.047
				Fracture resistance	UER	AH130	MM	262 - 492	0.012 - 0.047
				Low cutting force	ZER	AH3135	MM	262 - 492	0.012 - 0.047
			40HRC - (H900)	First choice	UER	AH3135	MM	262 - 394	0.012 - 0.031
				Fracture resistance	UER	AH130	MM	262 - 394	0.012 - 0.031
				Low cutting force	ZER	AH3135	MM	262 - 394	0.012 - 0.031
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	ZER	AH8015	MM	328 - 984	0.02 - 0.079
				Fracture resistance	ZER	AH120	MM	328 - 984	0.02 - 0.079
	Ductile cast iron 80-55-06, etc.		150 - 250HB	First choice	ZER	AH8015	MM	262 - 656	0.02 - 0.079
				Fracture resistance	ZER	AH120	MM	262 - 656	0.02 - 0.079
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	UER	AH130	MM	98 - 197	0.012 - 0.028
				Wear resistance	UER	AH8015	MM	98 - 197	0.012 - 0.028
				Low cutting force	ZER	AH130	MM	98 - 197	0.012 - 0.028
	Heat-resistance alloys Inconel, Hastelloy, etc.		- 40HRC	First choice	UER	AH8015	MM	66 - 164	0.004 - 0.012
				Fracture resistance	UER	AH130	MM	66 - 164	0.004 - 0.012
				Low cutting force	ZER	AH8015	MM	66 - 164	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	UER	AH8015	MM	262 - 427	0.004 - 0.012
				Fracture resistance	UER	AH130	MM	262 - 427	0.004 - 0.012
				Low cutting force	ZER	AH8015	MM	262 - 427	0.004 - 0.012

15 type

Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

ISO	Workpiece material		Hardness	Priority	Insert type	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1045, 1055, etc.		- 300HB	First choice	ZER	AH3135	MM	328 - 984	0.02 - 0.059
				Wear resistance	ZER	AH120	MM	328 - 984	0.02 - 0.059
				Fracture resistance	ZER	AH3135	MT	328 - 984	0.02 - 0.079
	Alloy steel 4140, etc.		- 300HB	First choice	ZER	AH3135	MM	328 - 656	0.02 - 0.059
				Wear resistance	ZER	AH120	MM	328 - 656	0.02 - 0.059
				Fracture resistance	ZER	AH3135	MT	328 - 656	0.02 - 0.079
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	ZER	AH3135	MM	328 - 656	0.02 - 0.047
				Wear resistance	ZER	AH120	MM	328 - 656	0.02 - 0.047
				Fracture resistance	ZER	AH3135	MT	328 - 656	0.02 - 0.059
M	Austenitic stainless steel 304SS, etc.		- 200HB	First choice	UER	AH3135	MM	328 - 492	0.02 - 0.047
				Low cutting force	ZER	AH3135	MM	328 - 492	0.02 - 0.047
	Precipitation hardening stainless steel 17-4 PH, etc.		28HRC - (H1150)	First choice	UER	AH3135	MM	262 - 492	0.012 - 0.047
				Low cutting force	ZER	AH3135	MM	262 - 492	0.012 - 0.047
			40HRC - (H900)	First choice	UER	AH3135	MM	262 - 394	0.012 - 0.031
				Low cutting force	ZER	AH3135	MM	262 - 394	0.012 - 0.031
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	ZER	AH120	MT	328 - 984	0.02 - 0.079
				Fracture resistance	ZER	AH3135	MT	328 - 984	0.02 - 0.079
				Low cutting force	ZER	AH120	MM	328 - 984	0.02 - 0.059
	Ductile cast iron 80-55-06, etc.		150 - 250HB	First choice	ZER	AH120	MT	262 - 656	0.02 - 0.079
				Fracture resistance	ZER	AH3135	MT	262 - 656	0.02 - 0.079
				Low cutting force	ZER	AH120	MM	262 - 656	0.02 - 0.059
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	UER	AH3135	MM	98 - 197	0.012 - 0.028
				Low cutting force	ZER	AH3135	MM	98 - 197	0.012 - 0.028
				Fracture resistance	ZER	AH3135	MT	98 - 197	0.012 - 0.028
	Heat-resistance alloys Inconel, Hastelloy, etc.		- 40HRC	First choice	UER	AH3135	MM	66 - 164	0.004 - 0.012
				Wear resistance	ZER	AH120	MM	66 - 164	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	ZER	AH3135	MT	262 - 427	0.004 - 0.012
				Wear resistance	ZER	AH120	MT	262 - 427	0.004 - 0.012
		D2, etc.	50 - 60HRC	First choice	ZER	AH120	MT	164 - 230	0.002 - 0.008

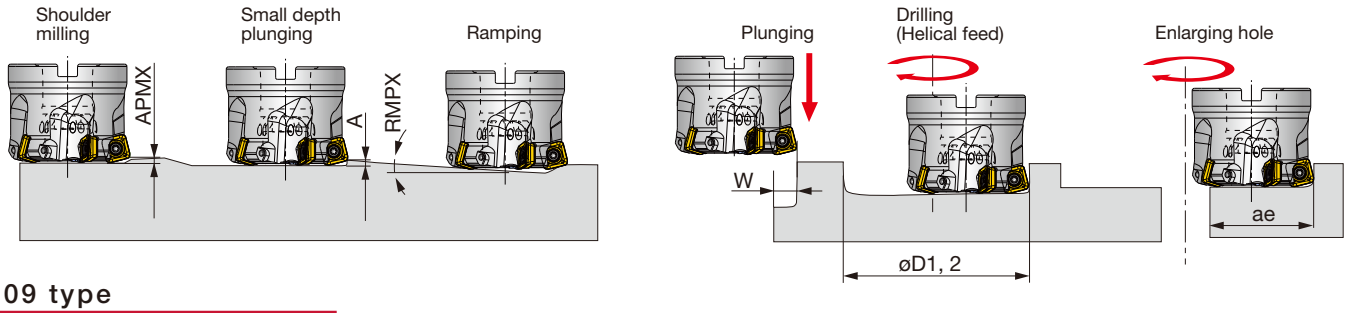
Tool dia.: DC (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Number of inserts: CICT

ø1.000", CICT = 3		ø1.250", CICT = 4		ø1.500", CICT = 5		ø2.000", CICT = 7	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
2,550	301	1,990	313	1,590	313	1,270	350
			Vc = 660 sfm, *fz* = 0.040 ipt				
1,910	226	1,490	235	1,190	234	960	265
			Vc = 490 sfm, *fz* = 0.040 iptt				
1,910	180	1,490	188	1,190	187	960	212
			Vc = 490 sfm, *fz* = 0.031 ipt				
1,530	144	1,190	150	960	151	760	168
			Vc = 400 sfm, *fz* = 0.031 ipt				
1,530	144	1,190	150	960	151	760	168
			Vc = 400 sfm, *fz* = 0.031 ipt				
1,270	90	1,000	94	800	94	640	106
			Vc = 330 sfm, *fz* = 0.024 ipt				
2,550	361	1,990	376	1,590	376	1,270	420
			Vc = 660 sfm, *fz* = 0.047 ipt				
1,910	271	1,490	281	1,190	281	1,270	420
			Vc = 490 sfm, *fz* = 0.047 ipt				
510	30	400	31	320	31	250	35
			Vc = 150 sfm, *fz* = 0.020 ipt				
380	9	300	9	240	9	190	11
			Vc = 120 sfm, *fz* = 0.008 ipt				
1,270	30	1,000	31	800	31	640	35
			Vc = 100 sfm, *fz* = 0.200 ipt				

Tool dia.: DC (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Number of inserts: CICT

ø2.000", CICT = 3		ø2.500", CICT = 4		ø3.000", CICT = 5		ø4.000", CICT = 6		ø5.000", CICT = 7		ø6.000", CICT = 8	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,270	150	1,010	159	800	157	640	151	510	141	400	126
					Vc = 660 sfm, *fz* = 0.040 ipt						
1,270	180	1,010	191	800	189	640	181	510	169	400	151
					Vc = 660 sfm, *fz* = 0.047 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
960	136	760	144	600	142	480	136	380	126	300	113
					Vc = 490 sfm, *fz* = 0.047 ipt						
960	91	760	96	600	94	480	91	380	84	300	76
					Vc = 490 sfm, *fz* = 0.031 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
760	72	610	77	480	76	380	72	310	69	240	61
					Vc = 400 sfm, *fz* = 0.031 ipt						
760	72	610	77	480	76	380	72	310	69	240	61
					Vc = 400 sfm, *fz* = 0.031 ipt						
640	45	510	48	400	47	320	45	250	41	200	38
					Vc = 330 sfm, *fz* = 0.024 ipt						
1,270	180	1,010	191	800	189	640	181	510	169	400	151
					Vc = 660 sfm, *fz* = 0.047 ipt						
1,270	150	1,010	159	800	157	640	151	510	141	400	126
					Vc = 660 sfm, *fz* = 0.040 ipt						
960	136	760	144	600	142	480	136	380	126	300	113
					Vc = 490 sfm, *fz* = 0.047 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
250	15	200	16	160	16	130	15	100	14	80	13
					Vc = 150 sfmn, *fz* = 0.020 ipt						
200	5	150	5	120	5	100	5	80	4	60	4
					Vc = 120 sfm, *fz* = 0.008 ipt						
640	15	510	16	400	16	320	15	250	14	200	13
					Vc = 100 sfm, *fz* = 0.200 ipt						
380	6	300	6	240	6	190	6	150	5	120	5
					Vc = 60 sfm, *fz* = 0.120 ipt						

APPLICATION RANGE



09 type

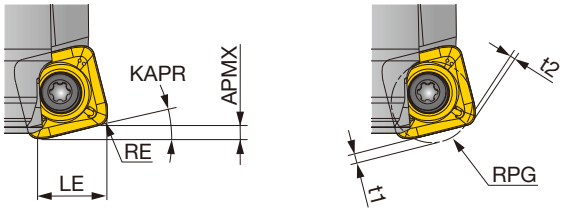
Inch	Tool dia. DCX	Max. depth of cut APMX SWMT 09**ZER	Max. depth of cut APMX SWMT 09**UER	Max. plunging depth A	Max. ramping angle RMPX SWMT 09**ZER	Max. ramping angle RMPX SWMT 09**UER	Max. cutting width in plunging W SWMT 09**ZER	Max. cutting width in plunging W SWMT 09**UER	Min. machining dia. øD1 SWMT 09**ZER	Min. machining dia. øD1 SWMT 09**UER	Max. machining dia. øD2 SWMT 09**ZER	Max. machining dia. øD2 SWMT 09**UER	Max. cutting width in enlarging ae SWMT 09**ZER	Max. cutting width in enlarging ae SWMT 09**UER
EXSW09U1.00…	1.000	0.059	0.039	0.012	4.6°	5.8°	0.275	0.295	1.370	1.331	1.881	1.881	0.665	0.645
EXSW09U1.25…	1.250	0.059	0.039	0.012	2.7°	3.2°	0.275	0.295	1.870	1.831	2.381	2.381	0.914	0.894
TXSW09U1.50B0.50R04	1.500	0.059	0.039	0.012	1.9°	2.2°	0.276	0.295	2.370	2.331	2.882	2.882	1.165	1.146
TXSW09U2.00B0.75R05	2.000	0.059	0.039	0.012	1.2°	1.4°	0.276	0.295	3.370	3.331	3.882	3.882	1.665	1.646
TXSW09U2.50B0.75R06	2.500	0.059	0.039	0.012	0.9°	0.9°	0.276	0.295	4.370	4.331	4.882	4.882	2.165	2.146
TXSW09U2.50B0.75R08	2.500	0.059	0.039	0.012	0.9°	0.9°	0.276	0.295	4.370	4.331	4.882	4.882	2.165	2.146
TXSW09U3.00B1.00R07	3.000	0.059	0.039	0.012	0.7°	0.8°	0.276	0.295	5.370	5.331	5.882	5.882	2.665	2.646
TXSW09U3.00B1.00R10	3.000	0.059	0.039	0.012	0.4°	0.6°	0.276	0.295	5.370	5.331	5.882	5.882	2.665	2.646
TXSW09U4.00B1.50R08	4.000	0.059	0.039	0.012	0.5°	0.6°	0.276	0.295	7.370	7.331	7.882	7.882	3.665	3.646

15 type

Inch	Tool dia. DCX	Max. depth of cut APMX SWMT 15**ZER	Max. depth of cut APMX SWMT 15**UER	Max. plunging depth A	Max. ramping angle RMPX	Max. cutting width in plunging W SWMT 15**ZER	Max. cutting width in plunging W SWMT 15**UER	Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae SWMT 15**ZER	Max. cutting width in enlarging ae SWMT 15**UER
TXSW15U2.00B0.75R03	2.000	0.098	0.079	0.028	4.6°	0.591	0.630	2.787	3.772	1.433	1.393
TXSW15U2.50B0.75R04	2.500	0.098	0.079	0.028	2.9°	0.591	0.630	3.819	4.803	1.949	1.909
TXSW15U3.00B1.00R05	3.000	0.098	0.079	0.028	2.1°	0.591	0.630	4.819	5.803	2.449	2.409
TXSW15U4.00B1.50R06	4.000	0.098	0.079	0.028	1.4°	0.591	0.630	6.819	7.803	3.449	3.409
TXSW15U5.00B1.50R07	5.000	0.098	0.079	0.028	1°	0.591	0.630	8.819	9.803	4.449	4.409
TXSW15U6.00B2.00R08	6.000	0.098	0.079	0.028	0.8°	0.591	0.630	10.819	11.803	5.449	5.409

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

TOOL GEOMETRY FOR PROGRAMMING



09 type

APMX (in) SWMT 09**ZER	APMX (in) SWMT 09**UER	Actual corner radius RE (in)	LE (in) SWMT 09**ZER	LE (in) SWMT 09**UER	KAPR SWMT 09**ZER	KAPR SWMT 09**UER	Programmed corner radius RPG	Uncut amount: t1 (in) SWMT 09**ZER	Uncut amount: t1 (in) SWMT 09**UER	Overcut amount: t2 (in) SWMT 09**ZER	Overcut amount: t2 (in) SWMT 09**UER
0.059	0.039	0.039	0.291	0.311	12°	7°	0.025	0.054	0.033	-	-
0.059	0.039	0.039	0.291	0.311	12°	7°	0.050	0.049	0.031	-	-
0.059	0.039	0.039	0.291	0.311	12°	7°	0.075	0.045	0.028	-	0.0002
0.059	0.039	0.039	0.291	0.311	12°	7°	0.100	0.040	0.025	0.001	0.006
0.059	0.039	0.039	0.291	0.311	12°	7°	0.125	0.036	0.022	0.006	0.015

- When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set in SWMT09**ZER insert: RPG = 0.059". If a larger radius is used, overcutting may occur.

15 type

APMX (in) SWMT 15**ZER	APMX (in) SWMT 15**UER	Actual corner radius RE (in)	LE (in) SWMT 15**ZER	LE (in) SWMT 15**UER	KAPR SWMT 15**ZER	KAPR SWMT 15**UER	Programmed corner radius RPG	Uncut amount: t1 (in) SWMT 15**ZER	Uncut amount: t1 (in) SWMT 15**UER	Overcut amount: t2 (in) SWMT 15**ZER	Overcut amount: t2 (in) SWMT 15**UER
0.098	0.079	0.079	0.500	0.543	14°	10°	0.138	0.083	0.073	-	-
0.098	0.079	0.079	0.500	0.543	14°	10°	0.157	0.078	0.070	-	-
0.098	0.079	0.079	0.500	0.543	14°	10°	0.178	0.074	0.067	-	0.001
0.098	0.079	0.079	0.500	0.543	14°	10°	0.197	0.070	0.063	0.0003	0.005

- When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set in SWMT15**ZER insert: RPG = 0.177", SWMT**UER insert: RPG = 0.157". If a larger radius is used, overcutting may occur. The above table shows the uncut (t1) and overcut (t2) amounts for the programmed corner radius.

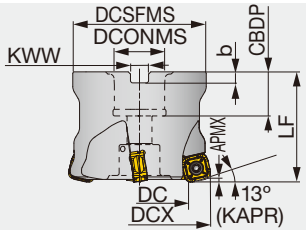
DOFEEDQUAD

TXQ

High feed face mill

GAMP = +7°, GAMF = -8° - -4.5°





Inch	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TXQ12R200U0075A03	0.079	2.000	3	1.362	1.850	1.969	0.750	0.750	0.315	0.197	1.120	With	SQMU12...
TXQ12R200U0075A04	0.079	2.000	4	1.362	1.850	1.969	0.750	0.750	0.315	0.197	1.120	With	SQMU12...
TXQ12R250U0075A04	0.079	2.500	4	1.862	2.323	1.969	0.750	0.750	0.315	0.197	1.760	With	SQMU12...
TXQ12R300U0100A05	0.079	3.000	5	2.362	2.835	2.480	1.000	1.024	0.374	0.236	3.770	With	SQMU12...
TXQ12R400U0150A06	0.079	4.000	6	3.362	3.780	2.480	1.500	1.457	0.626	0.394	5.710	With	SQMU12...
TXQ12R500U0150A07	0.079	5.000	7	4.362	3.780	2.480	1.500	1.457	0.626	0.394	7.010	With	SQMU12...
TXQ12R600U0200AZ08	0.079	6.000	8	5.37	3.937	2.480	2.000	1.496	0.748	0.433	9.700	With	SQMU12...

Metric	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXQ12R050M22.0E03	2	50	3	33.8	47	50	22	20	10.4	6.3	0.4	With	SQMU12...
TXQ12R050M22.2-03	2	50	3	33.8	47	50	22.225	20	8	5	0.4	With	SQMU12...
TXQ12R052M22.0E03	2	52	3	35.8	49	50	22	20	10.4	6.3	0.5	With	SQMU12...
TXQ12R063M22.0E04	2	63	4	46.8	59	50	22	20	10.4	6.3	0.8	With	SQMU12...
TXQ12R063M22.2-04	2	63	4	46.8	59	50	22.225	20	8	5	0.8	With	SQMU12...
TXQ12R066M27.0E04	2	66	4	49.8	63	50	27	22	12.4	7	0.9	With	SQMU12...
TXQ12R080M27.0E05	2	80	5	63.8	76	63	27	22	12.4	7	1.6	With	SQMU12...
TXQ12R080M31.7-05	2	80	5	63.8	76	63	31.75	32	12.7	8	1.5	With	SQMU12...
TXQ12R100M31.7-06	2	100	6	83.8	96	63	31.75	32	12.7	8	2.6	With	SQMU12...
TXQ12R100M32.0E06	2	100	6	83.8	96	63	32	25	14.4	8	3	With	SQMU12...
TXQ12R125M38.1-07	2	125	7	108.8	98	63	38.1	44	15.9	10	3.3	With	SQMU12...
TXQ12R125M40.0E07	2	125	7	108.8	98	63	40	32	16.4	9	3.2	With	SQMU12...

INCH SPARE PARTS







Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt (Optional parts)
TXQ12R**U0075A...	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(C0.375X1.125H)
TXQ12R300U0100A05	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(C0.500X1.375H)
TXQ12R**U0150A...	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(TMBA-0.750H)
TXQ12R600U0200AZ08	CSPB-4	H-TBS	M-1000	BLDIP15/S7	-

Recommended clamping torque: 2.58 lbs·ft

METRIC SPARE PARTS








Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TXQ12R050, 052M22.0...	CSPB-4	H-TBS	M-1000	-	FSHM10-40H	BLDIP15/S7
TXQ12R063M...	CSPB-4	H-TBS	M-1000	-	CM10X30H	BLDIP15/S7
TXQ12R066, 080M27.0...	CSPB-4	H-TBS	M-1000	-	CM12X30H	BLDIP15/S7
TXQ12R080, 100M31.7...	CSPB-4	H-TBS	M-1000	-	CM16X40H	BLDIP15/S7
TXQ12R100M32.0E06	CSPB-4	H-TBS	M-1000	-	CM16X40H	BLDIP15/S7
TXQ12R125M...	CSPB-4	H-TBS	M-1000	TMBA-M20H	-	BLDIP15/S7

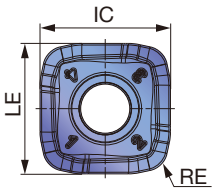
Recommended clamping torque: 3.5 N·m

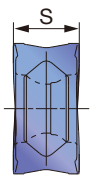
Reference pages: Inserts → H068, Standard cutting conditions → H068 - H069

INSERT

SQMU-MJ







P	Steel	☆		★	☆	
M	Stainless		★	☆		
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★	☆	★		
H	Hard materials			★		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH130	Coated AH725	Coated T3130	LE	S	IC
SQMU1206ZSR-MJ	0.079	0.079	●	●	●	●	0.461	0.236	0.461

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.	- 300HB	First choice	AH725	330 - 980	0.020 - 0.080
			Wear resistance	T3130	330 - 980	0.020 - 0.080
			Fracture resistance	AH130	330 - 980	0.020 - 0.080
	Alloy steels 4140, etc.	- 300HB	First choice	AH725	330 - 660	0.020 - 0.060
			Wear resistance	T3130	330 - 660	0.020 - 0.060
			Fracture resistance	AH130	330 - 660	0.020 - 0.060
	Prehardened steels NAK80, PX5, etc.	30 - 40HRC	-	AH725	330 - 660	0.020 - 0.040
M	Stainless steels 304, 316, etc.	- 200HB	-	AH130	330 - 500	0.012 - 0.030
K	Gray cast irons No.25, No.30, etc.	150 - 250HB	-	AH120	100 - 300	0.020 - 0.080
	Ductile cast irons 60-40-18, 65-45-12, etc.	150 - 250HB	-	AH120	260 - 660	0.020 - 0.080
S	Titanium alloy Ti-6Al-4V, etc.	- 40HRC	-	AH725	100 - 200	0.012 - 0.028
H	Hardened steels H13, D2, etc.	40 - 50HRC	-	AH725	260 - 43	0.004 - 0.012
		50 - 60HRC	-	AH725	160 - 230	0.001 - 0.003

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

· Slot or pocket milling is not recommended, since chip re-cutting easily occurs.
· Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.
· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Tool dia: DCX (in), Number of revolution: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: APMX = 0.079"

ø2.000"		ø2.500"		ø3.000"		ø4.000"		ø5.000"	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,260	227	1,010	242	790	237	630	227	500	210
				Vc = 660 sfm, *fz* = 0.060 ipt					
950	114	750	120	590	118	470	113	380	106
				Vc = 500 sfm, *fz* = 0.040 ipt					
950	86	750	90	590	89	470	85	380	80
				Vc = 490 sfm, *fz* = 0.030 ipt					
760	46	600	48	470	47	380	46	300	42
				Vc = 400 sfm, *fz* = 0.020 ipt					
1,260	227	1,010	242	790	237	630	227	500	210
				Vc = 660 sfm, *fz* = 0.060 ipt					
950	171	750	180	590	177	470	170	380	160
				Vc = 500 sfm, *fz* = 0.060 ipt					
250	15	200	16	150	15	120	14	100	14
				Vc = 130 sfm, *fz* = 0.020 ipt					
630	15	500	16	390	16	310	15	250	14
				Vc = 330 sfm, *fz* = 0.008 ipt					
380	2	300	2	240	2	190	2	150	2
				Vc = 200 sfm, *fz* = 0.002 ipt					

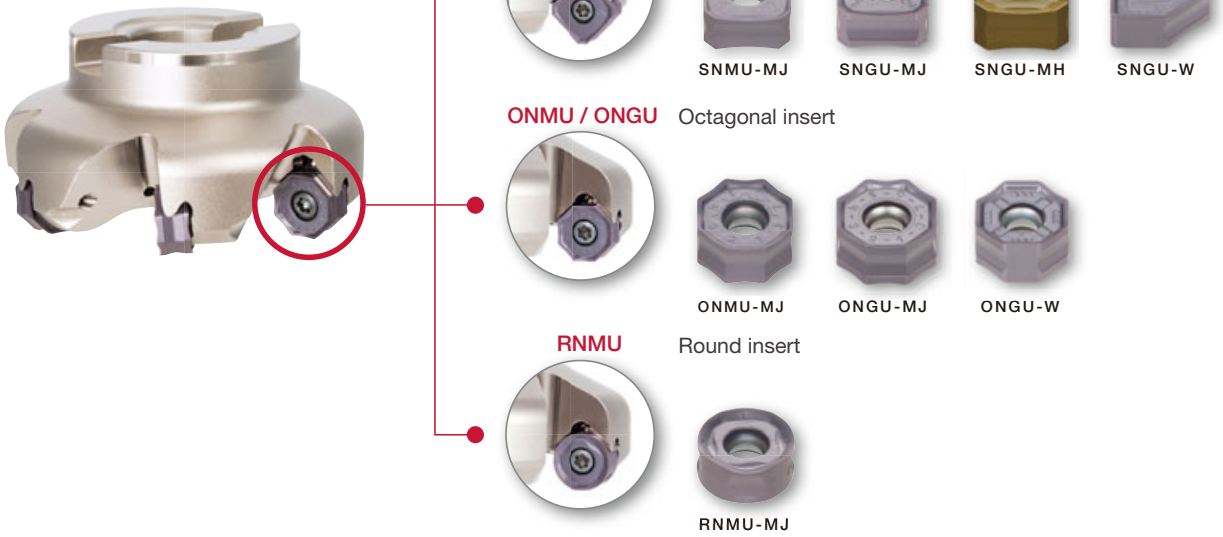
TRIPLE DOTMILL



Brings a top performance in every operation: from high feed milling, scale removing, finish milling … to stainless steel milling

Versatility

3 types of double sided inserts fit in the same pocket



High efficiency with close pitch cutter/Extra-close pitch type available in addition to regular close pitch type

Tool line-up includes extra close pitch cutter maximizing efficiency in cast iron machining.


Standard pitch


Close pitch


Extra-close pitch

Reference pages: H095 - H098



Super high density PCD cutter for efficient finishing of aluminum

Super high density cutter

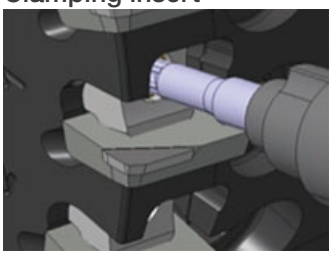


Super high density design
High speed cutting more than *Vc* = 9843 sfm is possible.

Cutter diameter (in)	Max num. of teeth	Max. rotation number (rpm)	Cutter weight (lb)
2	8	20,000	1.92
2.5	10	19,000	1.34
3	16	17,000	2.56
4	22	15,000	4.30
5	26	14,000	8.03
6	34	12,000	10.76

CamAdjust - super simple adjusting mechanism

Clamping insert

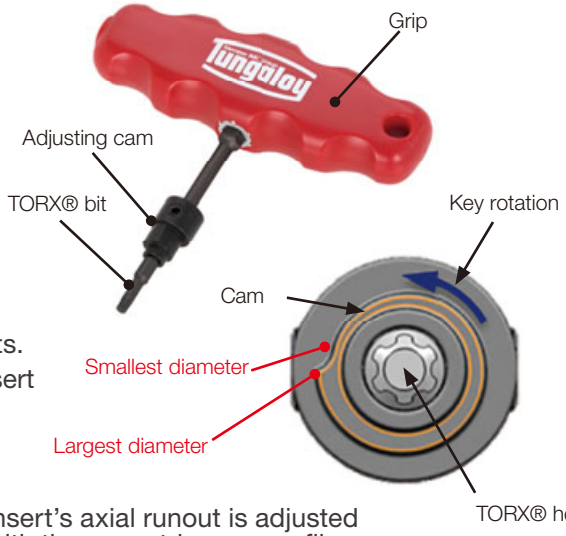


Adjusting axial runout



The same key is used for mounting and adjusting the inserts. The key wrench is operated in a single direction making insert adjustment easy on the pre-setter.

Special key wrench with adjusting cam



Insert's axial runout is adjusted with the eccentric cam profile.

Reference pages: H105 - H107

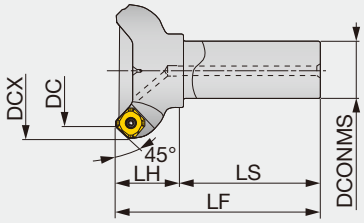
TUNGMILL

EAW13

Face endmill, shank type, with screw clamp system

GAMP=+17°~+20°,GAMF=-16°~-11°





Right hand (R) shown.

Metric	DC	DCX	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EAW13R025M25.0-02	25	39	2	25	80	35	115	0.4	With	SW*T13...
EAW13R032M32.0-02	32	46	2	32	80	35	115	0.7	With	SW*T13...
EAW13R040M32.0-03	40	54	3	32	80	35	115	0.8	With	SW*T13...
EAW13R050M32.0-03	50	63	3	32	80	40	120	1	With	SW*T13...
EAW13R050M32.0-04	50	63	4	32	80	40	120	0.9	With	SW*T13...
EAW13R063M32.0-04	63	76	4	32	80	40	120	1.1	With	SW*T13...
EAW13R063M32.0-05	63	76	5	32	80	40	120	1.1	With	SW*T13...
EAW13R080M32.0-04	80	94	4	32	80	40	120	1.5	With	SW*T13...
EAW13R080M32.0-06	80	94	6	32	80	40	120	1.4	With	SW*T13...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shim screw	Shim	Wrench	Wrench 1
EAW13R025 - 040...	CSPB-3.5	M-1000	-	-	IP-15D	-
EAW13R050 - 080...	CSPB-3.5	M-1000	DTS5-3.5SS	FSSA1102	IP-15D	P-3.5

Recommended clamping torque: 3.5 N·m

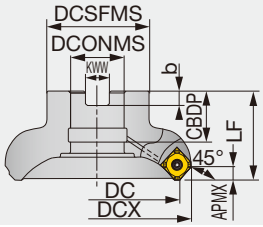
Reference pages: Inserts → H075

TAW13

Face mill, with screw clamp system

GAMP=+17°~+20°,GAMF=-16°~-11°



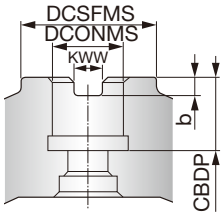


Right hand (R) shown.

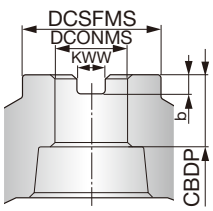
Inch	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAW13R200U0075A03	2.000	3	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R200U0075A04	2.000	4	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R200U0075A05	2.000	5	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R300U0100A04	3.000	4	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R300U0100A06	3.000	6	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R300U0100A08	3.000	8	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R400U0150A05	4.000	5	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.750	With	SW*T13...	B
TAW13R400U0150A07	4.000	7	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.530	With	SW*T13...	B
TAW13R400U0150A10	4.000	10	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.750	With	SW*T13...	B
TAW13R500U0150A06	5.000	6	5.510	3.150	2.480	1.500	1.457	0.626	0.394	6.170	With	SW*T13...	B
TAW13R500U0150A08	5.000	8	5.510	3.150	2.480	1.500	1.457	0.626	0.394	5.950	With	SW*T13...	B
TAW13R500U0150A12	5.000	12	5.510	3.150	2.480	1.500	1.457	0.626	0.394	6.170	With	SW*T13...	B
TAW13R600U0200A07	6.000	7	6.510	3.937	2.480	2.000	1.500	0.748	0.433	9.040	Without	SW*T13...	B
TAW13R600U0200A10	6.000	10	6.510	3.937	2.480	2.000	1.500	0.748	0.433	8.600	Without	SW*T13...	B
TAW13R600U0200A16	6.000	16	6.510	3.937	2.480	2.000	1.500	0.748	0.433	9.040	Without	SW*T13...	B

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Lubricant	Shim screw	Shell locking bolt	Shim	Wrench	Wrench 1
TAW13R200...	CSPB-3.5	M-1000	DTS5-3.5SS	C0.375X1.125H	FSSA1102	IP-15D	P-3.5
TAW13R300...	CSPB-3.5	M-1000	DTS5-3.5SS	C0.500X1.375H	FSSA1102	IP-15D	P-3.5
TAW13R400, 500...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-0.750H	FSSA1102	IP-15D	P-3.5
TAW13R600...	CSPB-3.5	M-1000	DTS5-3.5SS	-	FSSA1102	IP-15D	P-3.5

Recommended clamping torque：2.58 lbs·ft

Reference pages: Inserts → H075

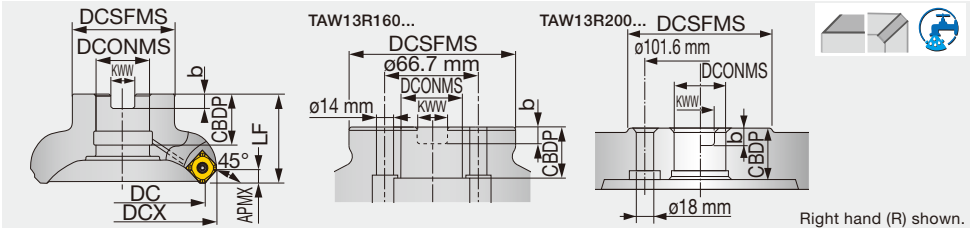
TUNGMILL

TAW13

Face mill, with screw clamp system

GAMP=+17°~+20°,GAMF=-16°~-11°





Right hand (R) shown.

Metric	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TAW13R050M22.0-03	50	63	3	41	40	22	20	10	6	0.4	With	SW*T13...
TAW13R050M22.0-04	50	63	4	41	40	22	20	10	6	0.4	With	SW*T13...
TAW13R050M22.0E04	50	63	4	41	40	22	20	10.4	6.3	0.4	With	SW*T13...
TAW13R050M22.0E05	50	63	5	41	40	22	20	10.4	6.3	0.4	With	SW*T13...
TAW13R063M22.0-04	63	76	4	41	40	22	20	10	6	0.5	With	SW*T13...
TAW13R063M22.0-05	63	76	5	41	40	22	20	10	6	0.6	With	SW*T13...
TAW13R063M22.0E05	63	76	5	41	40	22	20	10.4	6.3	0.6	With	SW*T13...
TAW13R063M22.0E06	63	76	6	41	40	22	20	10.4	6.3	0.6	With	SW*T13...
TAW13R080M25.4-04	80	94	4	50	50	25.4	26	9.5	6	1	With	SW*T13...
TAW13R080M25.4-06	80	94	6	50	50	25.4	26	9.5	6	1	With	SW*T13...
TAW13R080M27.0E06	80	94	6	50	50	27	22	12.4	7	1	With	SW*T13...
TAW13R080M27.0E08	80	94	8	50	50	27	22	12.4	7	1	With	SW*T13...
TAW13R100M31.7-05	100	114	5	60	50	31.75	32	12.7	8	1.5	With	SW*T13...
TAW13R100M31.7-07	100	114	7	60	50	31.75	32	12.7	8	1.5	With	SW*T13...
TAW13R100M32.0E07	100	114	7	60	50	32	28.5	14.4	8	1.5	With	SW*T13...
TAW13R100M32.0E10	100	114	10	60	50	32	28.5	14.4	8	1.5	With	SW*T13...
TAW13R125M38.1-06	125	139	6	80	63	38.1	38	15.9	10	2.8	With	SW*T13...
TAW13R125M38.1-08	125	139	8	80	63	38.1	38	15.9	10	2.7	With	SW*T13...
TAW13R125M40.0E08	125	139	8	80	63	40	32	16.4	9	2.7	With	SW*T13...
TAW13R125M40.0E12	125	139	12	80	63	40	32	16.4	9	3	With	SW*T13...
TAW13R160M40.0E10	160	174	10	100	63	40	29	16.4	9	4.4	Without	SW*T13...
TAW13R160M40.0E16	160	174	16	100	63	40	29	16.4	9	4.4	Without	SW*T13...
TAW13R160M50.8-07	160	174	7	100	63	50.8	40	19	11	4.4	Without	SW*T13...
TAW13R160M50.8-10	160	174	10	100	63	50.8	40	19	11	4.4	Without	SW*T13...
TAW13R200M47.6-08	200	213	8	130	63	47.625	38	25.4	14	8	Without	SW*T13...

Approach angle

7°-25°

41°-45°

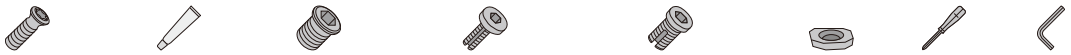
60°-70°

85°-88°

90°

Others

SPARE PARTS

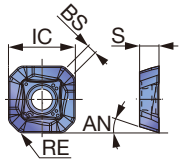


Designation	Clamping screw	Lubricant	Shim screw	Shell locking bolt 1	Shell locking bolt 2	Shim	Wrench	Wrench 1
TAW13R050 - 063...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM10X30H	FSSA1102	IP-15D	P-3.5
TAW13R080...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM12X30H	FSSA1102	IP-15D	P-3.5
TAW13R100...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M16H	-	FSSA1102	IP-15D	P-3.5
TAW13R125...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M20H	-	FSSA1102	IP-15D	P-3.5
TAW13R160..., TAW13R200...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSA1102	IP-15D	P-3.5

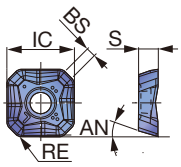
Recommended clamping torque: 3.5 N·m

INSERT

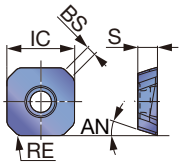
SWMT13T3-MJ



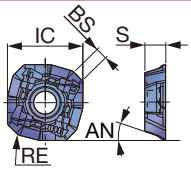
SWMT13T3-ML



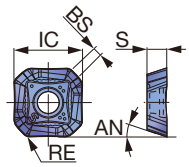
SWMW13T3 (Flat)



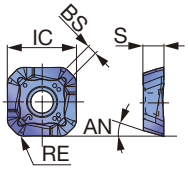
SWMT13T3-HJ



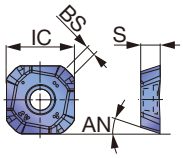
SWMT13T3-MS



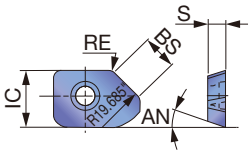
SWGT13T3-MJ



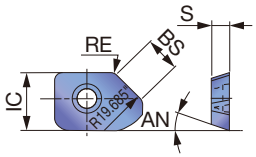
SWGT13T3-AJ



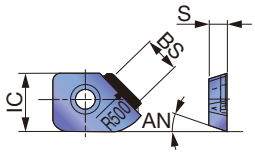
WWCW13T3AFER-WS



WWCW13T3AFFR-WS



WWCW13T3AFFR-WD



P	Steel	☆			★				★	☆			★					
M	Stainless		★	☆	★					☆								
K	Cast iron	★				★	★	★										
N	Non-ferrous										★				★		★	
S	Superalloys	★	☆		☆													
H	Hard materials																	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet	Uncoated	PCD	IC	S	AN	BS
			AH120	AH130	AH140	AH3135	GH110	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F	DX140				
SWMT13T3AFPR-MJ	0.059	0.157	●	●	●	●		●	●	●	●		●			0.547	0.157	18.5°	0.079
SWMT13T3AFER-ML	0.059	0.098	●			●										0.547	0.157	18.5°	0.079
SWMW13T3AFTR	0.059	0.197	●			●		●	●	●	●		●			0.547	0.157	18.5°	0.079
SWMT13T3AFPR-HJ	0.059	0.079	●	●	●	●		●	●	●	●					0.579	0.157	18.5°	0.091
SWMT13T3AFPR-MS	0.039	0.157		●	●	●										0.555	0.157	18.5°	0.079
SWGT13T3AFPR-MJ	0.059	0.157	●			●							●			0.547	0.157	18.5°	0.079
SWGT13T3AFFR-AJ	-	0.157										●		●		0.555	0.157	18.5°	0.079
WWCW13T3AFER-WS	0.059	-					●						●			0.504	0.157	18.5°	0.307
WWCW13T3AFFR-WS	0.059	-										●		●		0.504	0.157	18.5°	0.307
WWCW13T3AFFR-WD	-	-													●	0.504	0.157	18.5°	0.307

●: Line up
DX140 : Packing Quantity = 1 pc.

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
EAW13

e-catalog
TAW13

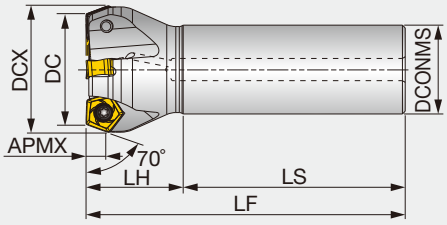
DOPENT

EEN09

Face endmill, shank type, with screw clamp system

GAMP=-6°,GAMF=-2°~-10°





Inch	APMX	DC	DCX	CICT	DCONMS	LS	LH	LF	WT (lb)	Air hole	Insert
EEN09R125U0125W03	0.252	1.250	1.49	3	1.250	2.280	1.500	3.780	0.700	With	PN*U0905...
EEN09R150U0125W04	0.252	1.500	1.74	4	1.250	2.280	2.000	4.280	0.700	With	PN*U0905...

Metric	APMX	DC	DCX	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EEN09R032M32.0-03	6.4	32	38	3	32	80	35	115	0.7	With	PN*U0905...
EEN09R040M32.0-04	6.4	40	46	4	32	80	35	115	0.7	With	PN*U0905...
EEN09R050M32.0-04	6.4	50	56	4	32	80	40	120	0.9	With	PN*U0905...
EEN09R063M32.0-06	6.4	63	69	6	32	80	40	120	1	With	PN*U0905...
EEN09R080M32.0-07	6.4	80	86	7	32	80	40	120	1.3	With	PN*U0905...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
EEN09...	CSTR-4L100	M-1000	T-15D

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H079, Standard cutting conditions → H080

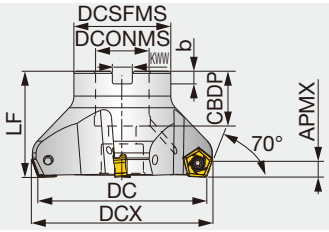
TEN09R/L

Face mill, with screw clamp system

GAMP=-6°,GAMF=-10°~-2°



Arbor type A

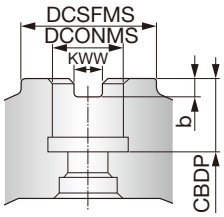


Right hand (R) shown.

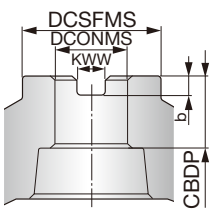
Inch	APMX	DC	CICT	DCX	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TEN09R200U0075A03	0.250	2.000	3	2.240	1.690	1.570	0.750	0.750	0.310	0.200	0.9	With	PN*U0905...	A
TEN09R200U0075A04	0.250	2.000	4	2.240	1.690	1.570	0.750	0.750	0.310	0.200	0.9	With	PN*U0905...	A
TEN09R200U0075A06	0.250	2.000	6	2.240	1.690	1.570	0.750	0.750	0.310	0.200	0.9	With	PN*U0905...	A
TEN09R250U0075A04	0.250	2.500	4	2.740	1.690	1.570	0.750	0.750	0.310	0.200	1.3	With	PN*U0905...	A
TEN09R250U0075A06	0.250	2.500	6	2.740	1.690	1.570	0.750	0.750	0.310	0.200	1.3	With	PN*U0905...	A
TEN09R250U0075A08	0.250	2.500	8	2.740	1.690	1.570	0.750	0.750	0.310	0.200	1.3	With	PN*U0905...	A
TEN09R300U0100A04	0.250	3.000	4	3.240	1.970	1.970	1.000	1.020	0.370	0.240	2.0	With	PN*U0905...	A
TEN09R300U0100A07	0.250	3.000	7	3.240	1.970	1.970	1.000	1.020	0.370	0.240	2.0	With	PN*U0905...	A
TEN09R300U0100A10	0.250	3.000	10	3.240	1.969	1.970	1.000	1.020	0.370	0.240	2.2	With	PN*U0905...	A
TEN09R400U0150A05	0.250	4.000	5	4.240	3.150	1.970	1.500	1.380	0.630	0.390	3.5	With	PN*U0905...	B
TEN09R400U0150A08	0.250	4.000	8	4.240	3.150	1.970	1.500	1.380	0.630	0.390	3.7	With	PN*U0905...	B
TEN09R400U0150A12	0.250	4.000	12	4.240	3.150	1.970	1.500	1.380	0.630	0.390	4.0	With	PN*U0905...	B
TEN09R500U0150A06	0.250	5.000	6	5.240	3.150	2.480	1.500	1.460	0.630	0.390	6.0	With	PN*U0905...	B
TEN09R500U0150A10	0.250	5.000	10	5.240	3.150	2.480	1.500	1.460	0.630	0.390	6.4	With	PN*U0905...	B
TEN09R500U0150A16	0.250	5.000	16	5.240	3.150	2.480	1.500	1.460	0.630	0.390	6.8	With	PN*U0905...	B
TEN09R600U0200A07	0.250	6.000	7	6.240	3.940	2.480	2.000	1.500	0.750	0.430	8.6	Without	PN*U0905...	B
TEN09R600U0200A12	0.250	6.000	12	6.240	3.940	2.480	2.000	1.500	0.750	0.430	9.3	Without	PN*U0905...	B
TEN09R600U0200A20	0.250	6.000	20	6.240	3.940	2.480	2.000	1.500	0.750	0.430	10.0	Without	PN*U0905...	B
TEN09R800U0250A14	0.252	8.000	14	8.230	5.120	2.480	2.500	1.500	1.000	0.550	14.0	Without	PN*U0905...	B
TEN09R1000U0250A16	0.252	10.000	16	10.230	5.120	2.480	2.500	1.500	1.000	0.550	30.4	Without	PN*U0905...	B

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt (Optional parts)	Torx bit
TEN09R200, 250...	CSTR-4L100	H-TBS	M-1000	(C0.375X1.125H)	BT15S
TEN09R300...	CSTR-4L100	H-TBS	M-1000	(C0.500X1.375H)	BT15S
TEN09R400, 500...	CSTR-4L100	H-TBS	M-1000	(TMBA-0.750H)	BT15S
TEN09R600, 800, 1000...	CSTR-4L100	H-TBS	M-1000	-	BT15M

Recommended clamping torque: 2.58 lbs·ft

Reference pages: Inserts → H079, Standard cutting conditions → H080

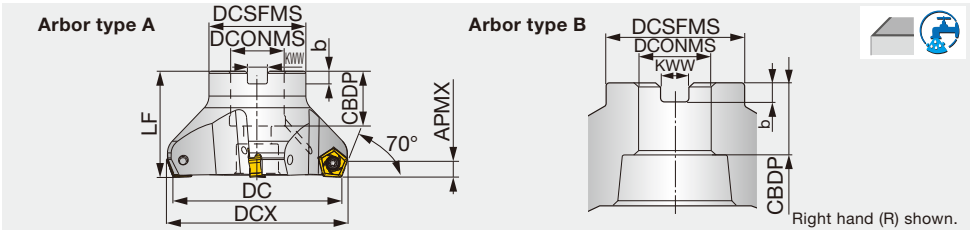
DOPENT

TEN09R/L

Face mill, with screw clamp system

GAMP=-6°,GAMF=-10°~-2°





Metric	APMX	DC	CICT	DCX	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TEN09R050M22.0-03	6.4	50	3	56	41	40	22	20	10	6	0.3	With	PN*U0905...	A
TEN09R050M22.0-04	6.4	50	4	56	41	40	22	20	10	6	0.3	With	PN*U0905...	A
TEN09R050M22.0-06	6.4	50	6	56	41	40	22	20	10	6	0.3	With	PN*U0905...	A
TEN09R050M22.0E04	6.4	50	4	56	41	40	22	20	10.4	6.3	0.3	With	PN*U0905...	A
TEN09R050M22.0E06	6.4	50	6	56	41	40	22	20	10.4	6.3	0.3	With	PN*U0905...	A
TEN09R063M22.0-04	6.4	63	4	69	41	40	22	20	10	6	0.5	With	PN*U0905...	A
TEN09R063M22.0-06	6.4	63	6	69	41	40	22	20	10	6	0.5	With	PN*U0905...	A
TEN09R063M22.0-08	6.4	63	8	69	41	40	22	20	10	6	0.5	With	PN*U0905...	A
TEN09R063M22.0E06	6.4	63	6	69	41	40	22	20	10.4	6.3	0.5	With	PN*U0905...	A
TEN09R063M22.0E08	6.4	63	8	69	41	40	22	20	10.4	6.3	0.5	With	PN*U0905...	A
TEN09R080M25.4-04	6.4	80	4	86	46	50	25.4	26	9.5	6	0.9	With	PN*U0905...	A
TEN09R080M25.4-07	6.4	80	7	86	46	50	25.4	26	9.5	6	0.9	With	PN*U0905...	A
TEN09R080M25.4-10	6.4	80	10	86	46	50	25.4	26	9.5	6	0.9	With	PN*U0905...	A
TEN09R080M27.0E07	6.4	80	7	86	50	50	27	22	12.4	7	0.9	With	PN*U0905...	A
TEN09R080M27.0E10	6.4	80	10	86	50	50	27	22	12.4	7	1	With	PN*U0905...	A
TEN09R100M31.7-05	6.4	100	5	106	60	50	31.75	32	12.7	8	1.3	With	PN*U0905...	B
TEN09R/L100M31.7-08*	6.4	100	8	106	60	50	31.75	32	12.7	8	1.3	With	PN*U0905...	B
TEN09R100M31.7-12	6.4	100	12	106	60	50	31.75	32	12.7	8	1.4	With	PN*U0905...	B
TEN09R/L100M32.0E08*	6.4	100	8	106	60	50	32	28.5	14.4	8	1.3	With	PN*U0905...	B
TEN09R100M32.0E12	6.4	100	12	106	60	50	32	28.5	14.4	8	1.4	With	PN*U0905...	B
TEN09R125M38.1-06	6.4	125	6	131	80	63	38.1	38	15.9	10	2.6	With	PN*U0905...	B
TEN09R/L125M38.1-10*	6.4	125	10	131	80	63	38.1	38	15.9	10	2.7	With	PN*U0905...	B
TEN09R125M38.1-16	6.4	125	16	131	80	63	38.1	43	15.9	10	2.9	With	PN*U0905...	B
TEN09R/L125M40.0E10*	6.4	125	10	131	71	63	40	32	16.4	9	2.3	With	PN*U0905...	B
TEN09R125M40.0E16	6.4	125	16	131	71	63	40	32	16.4	9	2.5	With	PN*U0905...	B
TEN09R160M50.8-07	6.4	160	7	166	100	63	50.8	46	19	11	4.4	Without	PN*U0905...	B
TEN09R/L160M40.0E12*	6.4	160	12	166	100	63	40	29	16.4	9	4	Without	PN*U0905...	B
TEN09R160M40.0E20	6.4	160	20	166	100	63	40	29	16.4	9	4.3	Without	PN*U0905...	B
TEN09R/L160M50.8-12*	6.4	160	12	166	100	63	50.8	46	19	11	4.6	Without	PN*U0905...	B
TEN09R160M50.8-20	6.4	160	20	166	100	63	50.8	46	19	11	4.9	Without	PN*U0905...	B
TEN09R200M47.6-10	6.4	200	10	206	130	63	47.625	38	25.4	14	6.5	Without	PN*U0905...	C
TEN09R200M60.0E14	6.4	200	14	206	130	63	60	38	25.7	14	6.34	Without	PN*U0905...	C
TEN09R250M47.6-12	6.4	250	12	256	130	63	47.625	38	25.4	14	12.94	Without	PN*U0905...	C
TEN09R250M60.0E16	6.4	250	16	256	130	63	60	38	25.7	14	13.46	Without	PN*U0905...	C
TEN09R315M47.6-14	6.4	315	14	321	220	63	47.625	38	25.4	14	17.9	Without	PN*U0905...	D

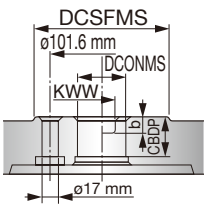
*Please use neutral hand inserts for TEN09L (left hand cutter).

Approach angle

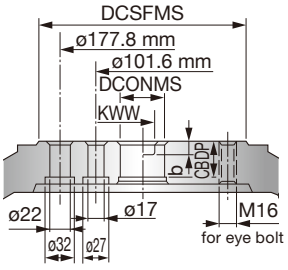
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Arbor type

Arbor type C



Arbor type D



SPARE PARTS

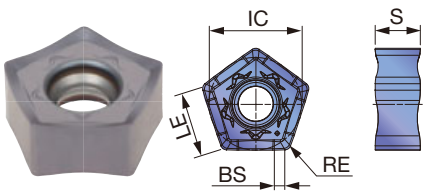
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TEN09R050 - 063...	CSTR-4L100	H-TBS	M-1000	-	CM10X30H	BT15S
TEN09R080...	CSTR-4L100	H-TBS	M-1000	-	CM12X30H	BT15S
TEN09R/L100...	CSTR-4L100	H-TBS	M-1000	TMBA-M16H	-	BT15S
TEN09R125...06, TEN09R/L125M...10	CSTR-4L100	H-TBS	M-1000	TMBA-M20H	-	BT15M
TEN09R125M...16	CSTR-4L100	H-TBS	M-1000	TMBA-M20H	-	BT15S
TEN09R160M...07, TEN09R/L160M...12, TEN09R200M..., TEN09R250M...	CSTR-4L100	H-TBS	M-1000	-	-	BT15M
TEN09R160M...20	CSTR-4L100	H-TBS	M-1000	-	-	BT15S
TEN09R315M...	CSTR-4L100	H-TBS	M-1000	-	-	BT15L

Recommended clamping torque: 3.5 N·m

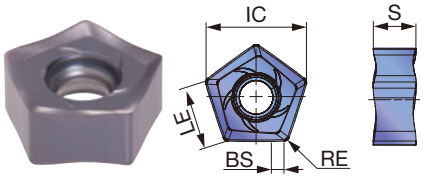
Reference pages: Inserts → H079, Standard cutting conditions → H080

INSERT

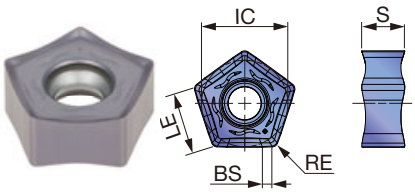
PN*U0905GNEN-MJ (Neutral)



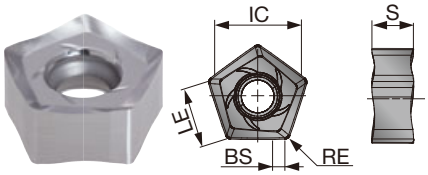
PNCU0905GNER-MJ (Right hand)



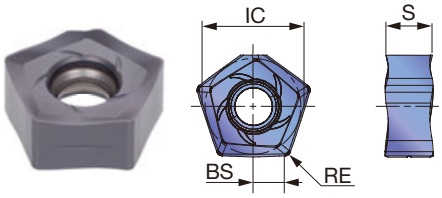
PNCU0905-ML (Neutral)



PNCU0905-AJ (Right hand)



PNCU0905-W (Right hand)



		AH3225	AH8015	AH3135	AH120	AH140	AH725	T1215	T1115	T3225	T3130	NS740	TH10
P	Steel	★	☆	★	☆		★			☆	☆	★	
M	Stainless			★		☆	☆			☆			
K	Cast iron		☆		★		☆	★	★				
N	Non-ferrous												★
S	Superalloys			☆	☆		★						
H	Hard materials		★										

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated									Cermet	Uncoated	LE	S	IC	BS
			AH3225	AH8015	AH3135	AH120	AH140	AH725	T1215	T1115	T3225	T3130	NS740	TH10				
PNMU0905GNEN-MJ	0.031	0.252	●	●	●	●			●		●		●		0.350	0.236	0.480	0.055
PNCU0905GNEN-MJ	0.031	0.252	●	●	●	●			●		●		●		0.350	0.236	0.480	0.055
PNCU0905GNER-MJ	0.031	0.252				●	●	●		●		●	●		0.350	0.233	0.480	0.055
PNCU0905GNEN-ML	0.031	0.252	●	●	●										0.350	0.235	0.480	0.055
PNCU0905GNFR-AJ	0.031	0.252												●	0.350	0.246	0.480	0.055
PNCU0905GNER-W	0.031	0.079						●							-	0.233	0.480	0.150

●: Line up

Reference pages: Standard cutting conditions → H080

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1015, etc.	200 - 300 HB	First choice	AH3225	MJ	330 - 820	0.004 - 0.016
		200 - 300 HB	Low cutting force	AH3225	ML	330 - 820	0.004 - 0.012
		200 - 300 HB	Wear resistance	T3225	MJ	660 - 1150	0.004 - 0.012
		200 - 300 HB	Surface quality	NS740	MJ	330 - 820	0.004 - 0.012
	High carbon steels, alloyed steels 1045, etc.	150 - 300 HB	First choice	AH3225	MJ	330 - 820	0.004 - 0.014
		150 - 300 HB	Low cutting force	AH3225	ML	330 - 820	0.004 - 0.012
		150 - 300 HB	Wear resistance	T3225	MJ	59 - 990	0.004 - 0.012
		150 - 300 HB	Surface quality	NS740	MJ	330 - 820	0.004 - 0.012
	Prehardened steels NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3225	MJ	330 - 660	0.004 - 0.012
		30 - 40 HRC	Low cutting force	AH3225	ML	330 - 660	0.004 - 0.010
		30 - 40 HRC	Wear resistance	T3225	MJ	490 - 820	0.004 - 0.010
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	ML	330 - 660	0.004 - 0.012
		- 200 HB	Fracture resistance	AH3135	MJ	330 - 660	0.004 - 0.014
		- 200 HB	Wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	First choice	T1215	MJ	330 - 980	0.004 - 0.014
		150 - 250 HB	Fracture resistance	AH120	MJ	330 - 820	0.004 - 0.016
	Ductile cast iron 60-40-18, etc.	150 - 250 HB	First choice	T1215	MJ	330 - 980	0.004 - 0.014
		150 - 250 HB	Fracture resistance	AH120	MJ	260 - 660	0.004 - 0.016
N	Aluminum alloys Si < 13%	-	First choice	TH10	AJ	1640 - 4920	0.004 - 0.020
	Aluminum alloys Si ≥ 13%	-	First choice	TH10	AJ	490 - 1640	0.004 - 0.020
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	ML	98 - 197	0.004 - 0.012
		- 40 HRC	Fracture resistance	AH3135	MJ	98 - 197	0.004 - 0.012
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	MJ	33 - 131	0.0004 - 0.004
H	Hardened materials H-13, etc.	- 45 HRC	First choice	AH8015	MJ	260 - 490	0.002 - 0.006
		- 45 HRC	Low cutting force	AH8015	ML	260 - 490	0.002 - 0.006

· Remove excessive chips with an air blast to prevent chip jamming.
· Use water-soluble coolant to avoid built-up edge in case extreme welding occurs on cutting edges. (ex. aluminum machining).
· For operations with a varied depth of cut (ex. casting skin) and machining of workpiece materials with interrupted surface, the feed (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Installation of inserts on an extra close-pitch cutter

- On an extra close-pitch cutter, the screw hole of an insert pocket is placed at an angle.
- Leave a gap between the insert and pocket when starting to fasten the screw on the cutter body as shown in Fig. A.
- After fastening the screw, please ensure that there is no gap between the cutter body and insert. (Fig. B)

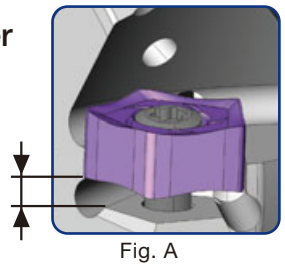
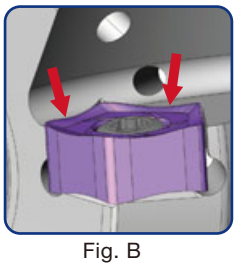


Fig. A


Fig. B

Notes for using wiper inserts

- When fine surface finish is required, wiper insert PNCU0905GNER-W is recommended.
- Attach the insert with its notch on the top, as shown in Fig. C.
- Also, make sure that the mark of the insert is located at the bottom of the cutter body, as shown in Fig. D.
- The wiper insert has two corners available (Fig. D). Do not use the other corners as the cutter body may be broken.

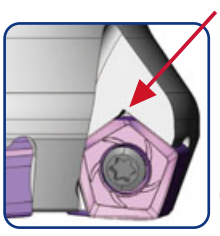


Fig. C

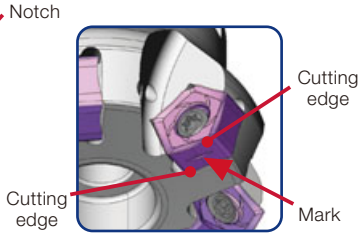
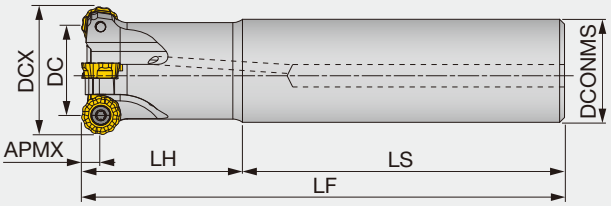


Fig. D

ROUNDSPLIT
ERC12/16
Endmill, shank type

GAMP = +0°, GAMF = -1°~ -5°







Inch	APMX	DCX	DC	CICT	DCONMS	LF	LH	LS	WT(lb)	Air hole	Insert
ERC12R125U0125-03L	0.236	1.250	0.778	3	1.250	6.000	2.250	3.750	2.050	With	RCMT1204...
ERC12R125U0125-03LL	0.236	1.250	0.778	3	1.250	12.000	7.000	5.000	3.370	With	RCMT1204...
ERC12R125U0125-03LM	0.236	1.250	0.778	3	1.250	8.000	4.000	4.000	2.250	With	RCMT1204...
ERC12R125U0125W03	0.236	1.250	0.778	3	1.250	5.000	2.750	2.250	1.320	With	RCMT1204...
ERC12R125U150-03LL	0.236	1.250	0.778	3	1.500	12.000	7.000	5.000	4.190	With	RCMT1204...
ERC12R150U0125-04LM	0.236	1.500	1.028	4	1.250	8.000	4.000	4.000	2.360	With	RCMT1204...
ERC12R150U0125-04LX	0.236	1.500	1.028	4	1.250	12.000	7.000	5.000	3.550	With	RCMT1204...
ERC12R150U0125W04	0.236	1.500	1.028	4	1.250	5.000	2.340	2.660	1.430	With	RCMT1204...
ERC12R150U0150-04L	0.236	1.500	1.028	4	1.500	6.000	2.000	3.750	2.420	With	RCMT1204...
ERC12R150U0150-04LM	0.236	1.500	1.028	4	1.500	8.000	4.000	4.000	3.080	With	RCMT1204...
ERC12R150U0150-04LX	0.236	1.500	1.028	4	1.500	12.000	7.000	5.000	4.410	With	RCMT1204...
ERC12R150U0150W04	0.236	1.500	1.028	4	1.500	5.000	2.340	2.660	1.830	With	RCMT1204...
ERC12R150U150-04LL	0.236	1.500	1.028	4	1.500	12.000	2.000	10.000	5.290	With	RCMT1204...
ERC16R150U0125-02LL	0.315	1.500	0.870	2	1.250	12.000	2.000	10.000	3.810	With	RCMT1606...
ERC16R150U0125-02LM	0.315	1.500	0.870	2	1.250	8.000	2.000	6.000	2.470	With	RCMT1606...
ERC16R150U0125W02	0.315	1.500	0.870	2	1.250	5.000	2.340	2.660	1.430	With	RCMT1606...
ERC16R150U0150-02L	0.315	1.500	0.870	2	1.500	6.000	2.000	4.000	2.380	With	RCMT1606...
ERC16R150U0150-02LM	0.315	1.500	0.870	2	1.500	8.000	4.000	4.000	3.080	With	RCMT1606...
ERC16R150U0150-02LX	0.315	1.500	0.870	2	1.500	12.000	7.000	5.000	4.620	With	RCMT1606...
ERC16R150U0150W02	0.315	1.500	0.870	2	1.500	5.000	2.340	2.660	1.830	With	RCMT1606...
ERC16R150U150-02LL	0.315	1.500	0.870	2	1.500	12.000	2.000	10.000	5.290	Without	RCMT1606...

Metric	APMX	DCX	DC	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
ERC12R032M32.0-03	6	32	20	3	32	150	70	80	0.8	With	RCMT1204...
ERC12R032M32.0-03L	6	32	20	3	32	250	150	100	1.3	With	RCMT1204...
ERC12R032M32.0-03LL	6	32	20	3	32	300	180	120	1.6	With	RCMT1204...
ERC12R033M32.0-03	6	33	21	3	32	150	70	80	0.8	With	RCMT1204...
ERC12R033M32.0-03L	6	33	21	3	32	250	150	100	1.4	With	RCMT1204...
ERC12R033M32.0-03LL	6	33	21	3	32	300	70	230	1.7	With	RCMT1204...
ERC12R040M32.0-04	6	40	28	4	32	150	50	100	0.8	With	RCMT1204...
ERC12R040M32.0-04L	6	40	28	4	32	250	50	200	1.5	With	RCMT1204...
ERC12R040M32.0-04LL	6	40	28	4	32	300	50	250	1.8	With	RCMT1204...
ERC12R050M42.0-05	6	50	38	5	42	150	50	100	1.5	With	RCMT1204...
ERC12R050M42.0-05L	6	50	38	5	42	250	50	200	2.6	With	RCMT1204...
ERC12R050M42.0-05LL	6	50	38	5	42	300	50	250	3	With	RCMT1204...
ERC16R040M32.0-02	8	40	24	2	32	150	50	100	0.8	With	RCMT1606...
ERC16R040M32.0-02L	8	40	24	2	32	250	50	200	1.4	With	RCMT1606...
ERC16R040M32.0-02LL	8	40	24	2	32	300	50	250	1.7	With	RCMT1606...
ERC16R050M42.0-03	8	50	34	3	42	150	50	100	1.4	With	RCMT1606...
ERC16R050M42.0-03L	8	50	34	3	42	250	50	200	2.4	With	RCMT1606...
ERC16R050M42.0-03LL	8	50	34	3	42	300	50	250	3	With	RCMT1606...

SPARE PARTS





Designation	Clamping screw	Wewnch
ERC12R...	CSTB-4L090	T-15DB
ERC16R040...	CSTB-5L105	T-20DB
ERC16R050...	CSTB-5L120	T-20DB

Recommended clamping torque: CSTB-4L090 = 2.58 lbs·ft, 3.5 N·m, CSTB-5L105/CSTB-5L120 = 3.69 lbs·ft, 5 N·m

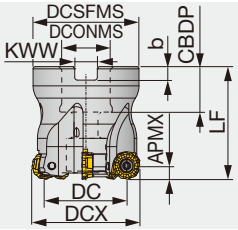
Reference pages: Inserts → H084

ROUNDSPLIT
TRC12/16

Face mill bore type cutter

GAMP = +0°, GAMF = -1°~ -5°





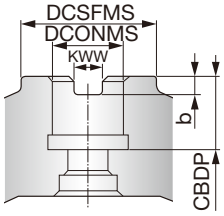


Inch	APMX	DCX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TRC12R200U0075A05	0.236	2.000	1.528	5	1.850	2.000	0.750	0.750	0.320	0.200	0.880	With	RCMT1204...	A
TRC12R250U0075A06	0.236	2.500	2.028	6	2.320	2.000	0.750	0.750	0.320	0.200	1.540	With	RCMT1204...	A
TRC12R300U0100A07	0.315	3.000	2.528	7	2.830	2.500	1.000	1.020	0.370	0.240	2.860	With	RCMT1204...	A
TRC16R200U0075A04	0.315	2.000	1.370	4	1.850	2.000	0.750	0.750	0.320	0.200	0.880	With	RCMT1606...	A
TRC16R250U0075A05	0.315	2.500	1.870	5	2.320	2.000	0.750	0 .750	0.320	0.200	1.540	With	RCMT1606...	A
TRC16R300U0100A06	0.315	3.000	2.370	6	2.830	2.500	1.000	1.020	0.370	0.240	2.860	With	RCMT1606...	A
TRC16R400U0150A07	0.315	4.000	3.370	7	3.820	2.500	1.500	1.460	0.620	0.390	3.520	With	RCMT1606...	B
TRC16R500U0150A08	0.315	5.000	4.370	8	3.780	2.500	1.500	1.460	0.620	0.390	7.930	With	RCMT1606...	B

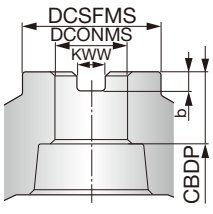
Metric	APMX	DCX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TRC12R040M16.0-04	6	40	28	4	35	40	16	18	8.2	5.6	0.2	With	RCMT1204...
TRC12R040M16.0E04	6	40	28	4	35	40	16	19	8.4	5.6	0.2	With	RCMT1204...
TRC12R050M22.0-05	6	50	38	5	47	50	22	20	10	6	0.4	With	RCMT1204...
TRC12R050M22.0E05	6	50	38	5	47	50	22	20	10.4	6.3	0.4	With	RCMT1204...
TRC12R050M22.2-05	6	50	38	5	47	50	22.225	20	8	5	0.4	With	RCMT1204...
TRC12R052M22.0E05	6	52	40	5	49	50	22	20	10.4	6.3	0.4	With	RCMT1204...
TRC12R063M22.0-06	6	63	51	6	59	50	22	20	10	6	0.7	With	RCMT1204...
TRC12R063M22.0E06	6	63	51	6	59	50	22	20	10.4	6.3	0.7	With	RCMT1204...
TRC12R063M22.2-06	6	63	51	6	59	50	22.225	20	8	5	0.7	With	RCMT1204...
TRC12R066M22.0E06	6	66	54	6	62	50	22	20	10.4	6.3	0.7	With	RCMT1204...
TRC12R080M27.0E07	6	80	68	7	76	50	27	22	12.4	7	1.1	With	RCMT1204...
TRC12R080M31.7-07	6	80	68	7	76	63	31.750	32	12.7	8	1.5	With	RCMT1204...
TRC16R050M22.0-04	8	50	34	4	47	50	22	20	10	6	0.4	With	RCMT1606...
TRC16R050M22.0E04	8	50	34	4	47	50	22	20	10.4	6.3	0.3	With	RCMT1606...
TRC16R050M22.2-04	8	50	34	4	47	50	22.225	20	8	5	0.4	With	RCMT1606...
TRC16R052M22.0E04	8	52	36	4	49	50	22	20	10.4	6.3	0.4	With	RCMT1606...
TRC16R063M22.0-05	8	63	47	5	59	50	22	20	10	6	0.6	With	RCMT1606...
TRC16R063M22.0E05	8	63	47	5	59	50	22	20	10.4	6.3	0.6	With	RCMT1606...
TRC16R063M22.2-05	8	63	47	5	59	50	22.225	20	8	5	0.7	With	RCMT1606...
TRC16R066M22.0E05	8	66	50	5	62	50	22	20	10.4	6.3	0.7	With	RCMT1606...
TRC16R080M27.0E06	8	80	64	6	76	50	27	22	12.4	7	1	With	RCMT1606...
TRC16R080M31.7-06	8	80	64	6	76	63	31.75	32	12.7	8	1.3	With	RCMT1606...
TRC16R100M31.7-07	8	100	84	7	96	63	31.75	32	12.7	8	1.6	With	RCMT1606...
TRC16R100M32.0E07	8	100	84	7	96	63	32	25	14.4	8	2.4	With	RCMT1606...
TRC16R125M38.1-08	8	125	109	8	98	63	38.1	43	15.9	10	3.6	With	RCMT1606...
TRC16R125M40.0E08	8	125	109	8	98	63	40	32	16.4	9	3	With	RCMT1606...

Arbor type

Arbor type A



Arbor type B



Reference pages: Inserts → H084

INCH SPARE PARTS






Designation	Clamping screw	Grip	Shell locking bolt (Optional parts)	Torx bit
TRC12R...	CSTB-4L090	H-TBS	(C0.375X1.125H)	BT15S
TRC16R200, 250...	CSTB-5L120	H-TB	(C0.375X1.125H)	BT20S
TRC16R300...	CSTB-5L120	H-TB	(C0.500X1.375H)	BT20M
TRC16R400, 500...	CSTB-5L120	H-TB	(TMBA-0.750H)	BT20M

Recommended clamping torque：CSTB-4L090 = 2.58 lbs･ft, CSTB-5L120 = 3.69 lbs･ft

METRIC SPARE PARTS





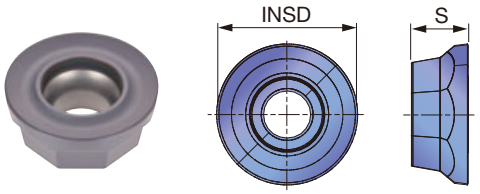


Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TRC12R040...	CSTB-4L090	H-TBS	-	FSHM8-30H	BT15S
TRC12R050 - 066...	CSTB-4L090	H-TBS	-	CM10X30H	BT15S
TRC12R080M27.0E07	CSTB-4L090	H-TBS	-	CM12X30H	BT15S
TRC12R080M31.7-07	CSTB-4L090	H-TBS	-	CM16X40H	BT15S
TRC16R050 - 052...	CSTB-5L120	H-TB	-	FSHM10-40H	BT20S
TRC16R063 - 066...	CSTB-5L120	H-TB	-	CM10X30H	BT20S
TRC16R080M27.0E06	CSTB-5L120	H-TB	-	CM12X30H	BT20S
TRC16R080M31.7-06	CSTB-5L120	H-TB	-	CM16X40H	BT20S
TRC16R100...	CSTB-5L120	H-TB	-	CM16X40H	BT20S
TRC16R125...	CSTB-5L120	H-TB	TMBA-M20H	-	BT20M

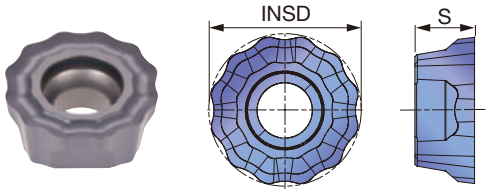
Recommended clamping torque：CSTB-4L090 = 3.5 N·m, CSTB-5L120 = 5 N·m

INSERT

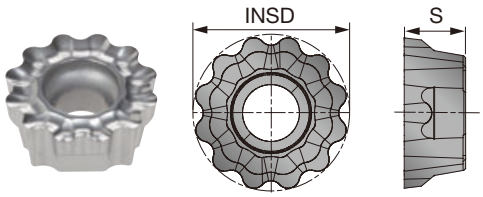
RCMT-MJ



RCMT-NMJ



RCMT-NAJ



		Coated			Uncoated	
P	Steel	☆		★		
M	Stainless		★	☆		
K	Cast iron	★		☆		
N	Non-ferrous				★	
S	Superalloys	★		★		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	APMX	Coated AH120	Coated AH140	Coated AH725	Uncoated KS15F	INSD	S
RCMT1204EN-MJ	0.236	●	●	●		0.472	0.189
RCMT1204EN-NMJ	0.236	●	●	●		0.472	0.189
RCMT1204FN-NAJ	0.236				●	0.472	0.189
RCMT1606EN-MJ	0.315	●	●	●		0.630	0.256
RCMT1606EN-NMJ	0.315	●	●	●		0.630	0.256
RCMT1606FN-NAJ	0.315				●	0.630	0.256

●: Line up

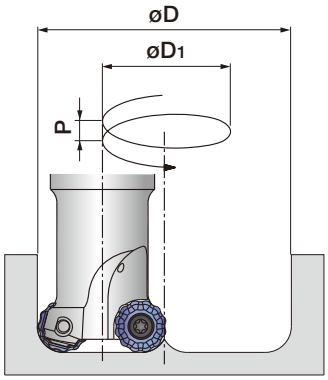
STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
TRC12/16

e-catalog
ERC12/16

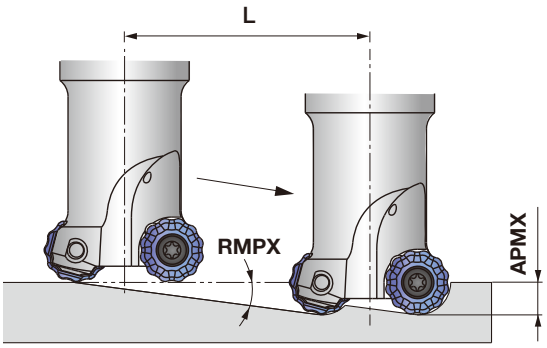
Holemaking with helical feed



Inch	Tool ø DCX (in)	Min. machining diameter (in)		Max. machining diameter (in)		Pitch P (in)
		øD	øD1	øD	øD1	
ERC12R125U...	1.250	2.028	0.778	2.421	1.171	< 0.236
ERC12R150U...	1.500	2.528	1.028	2.921	1.421	< 0.236
TRC12R200U...	2.000	3.528	1.528	3.921	1.921	< 0.236
TRC12R250U...	2.500	4.528	2.028	4.921	2.421	< 0.236
TRC12R300U...	3.000	5.528	2.528	5.921	2.921	< 0.236
ERC16R150U...	1.500	2.370	0.870	2.921	1.421	< 0.315
TRC16R200U...	2.000	3.370	1.370	3.921	1.921	< 0.315
TRC16R250U...	2.500	4.370	1.870	4.921	2.421	< 0.315
TRC16R300U...	3.000	5.370	2.370	5.921	2.921	< 0.315
TRC16R400U...	4.000	7.370	3.370	7.921	3.921	< 0.315
TRC16R500U...	5.000	9.370	4.370	9.921	4.921	< 0.315

When holemaking with a helical feed, the pitch (P) needs to be set at lower values than that shown above.

Ramping



Inch	Tool ø DCX (in)	Max. ramping angle RMPX	L: tool pass length when ramping angle is 2°				
			APMX (in)				
			0.079	0.118	0.158	0.236	0.315
ERC12R125U...	1.250	10°	2.244	3.346	4.488	6.732	–
ERC12R150U...	1.500	7°	2.244	3.346	4.488	6.732	–
TRC12R200U...	2.000	5.5°	2.244	3.346	4.488	6.732	–
TRC12R250U...	2.500	3.5°	2.244	3.346	4.488	6.732	–
TRC12R300U...	3.000	2.5°	2.244	3.346	4.488	6.732	–
ERC16R150U...	1.500	16°	2.244	3.346	4.488	6.732	–
TRC16R200U...	2.000	9.5°	2.244	3.346	4.488	6.732	9.016
TRC16R250U...	2.500	6.5°	2.244	3.346	4.488	6.732	9.016
TRC16R300U...	3.000	4.5°	2.244	3.346	4.488	6.732	9.016
TRC16R400U...	4.000	3°	2.244	3.346	4.488	6.732	9.016
TRC16R500U...	5.000	2.5°	2.244	3.346	4.488	6.732	9.016

Tool pass length: L = *ap* / tan RMPX, Ramping angle needs to be set at smaller than 2 degrees in order to prevent chips from getting tangled.

New

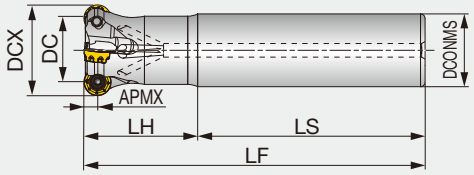
FIXRMILL

ERRQ12

Radius endmill with anti-rotation system, shank type

GAMP = +5°, GAMF = -3°







Metric	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
ERRQ12M040C32.0R04	6	40	4	28	32	150	50	100	0.84	With	RQMT12...

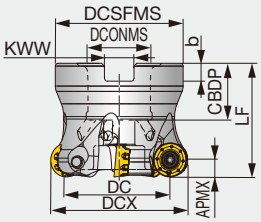
New

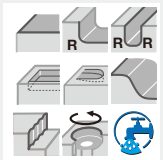
TRRQ12

Radius mill with anti-rotation system

GAMP = +5°, GAMF = -3°







Metric	APMX	DCX	CICT	DC	DCSFMS	DCONMS	LF	CBDP	KWW	b	WT(kg)	Air hole	Insert
TRRQ12M040B16.0R04 (1)	6	40	4	28	34	16	40	24	8.4	5.6	0.16	With	RQMT12...
TRRQ12M050B22.0R05	6	50	5	38	45	22	40	20	10.4	6.3	0.27	With	RQMT12...
TRRQ12M050B22.0R06	6	50	6	38	45	22	40	20	10.4	6.3	0.26	With	RQMT12...
TRRQ12M052B22.0R05	6	52	5	40	45	22	40	20	10.4	6.3	0.29	With	RQMT12...
TRRQ12M063B22.0R06	6	63	6	51	50	22	40	20	10.4	6.3	0.44	With	RQMT12...
TRRQ12M063B22.0R07	6	63	7	51	50	22	40	20	10.4	6.3	0.42	With	RQMT12...
TRRQ12M080B27.0R06	6	80	6	68	56	27	50	22	12.4	7	0.88	With	RQMT12...

(1) Always use the dedicated shell locking bolt # SRPS118-0416 when assembling the cutter on the arbor. See page **H087** for the instruction for the cutter-arbor assembly. Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the shell locking bolt.

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

SPARE PARTS







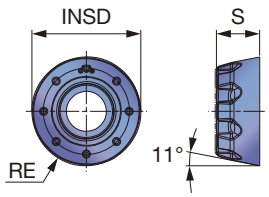
Designation	Clamping screw	Torx bit	Grip	Shell locking bolt 1	Shell locking bolt 2
ERRQ12M040C32.0R04	CSPB-4S	BLDIP15/S7	H-TB2W	-	-
TRRQ12M040B16.0R04	CSPB-4S	BLDIP15/S7	H-TB2W	-	SRPS118-0416
TRRQ12M050 - 063...	CSPB-4S	BLDIP15/S7	H-TB2W	CM10X30H	-
TRRQ12M080B27.0R06	CSPB-4S	BLDIP15/S7	H-TB2W	CM12X30H	-

Recommended clamping torque: 3.5 N·m

INSERT

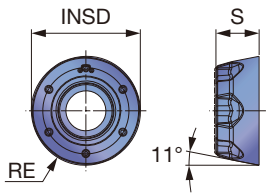
RQMT1204ENC8-MM





RQMT1204ENC6-MM





P	Steel	★	
M	Stainless	★	
K	Cast iron		★
N	Non-ferrous		
S	Superalloy	★	★
H	Hard materials	☆	☆

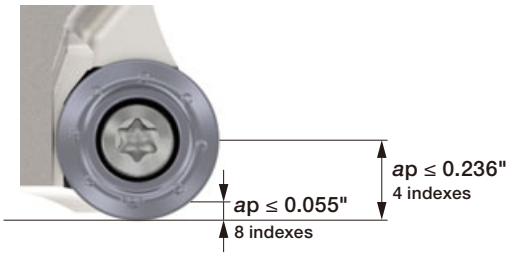
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3135	Coated AH8015	INSD	S
RQMT1204ENC8-MM	0.236	0.236	●	●	0.472	0.187
RQMT1204ENC6-MM	0.236	0.236	●	●	0.472	0.187

●: Line up

Two types of inserts

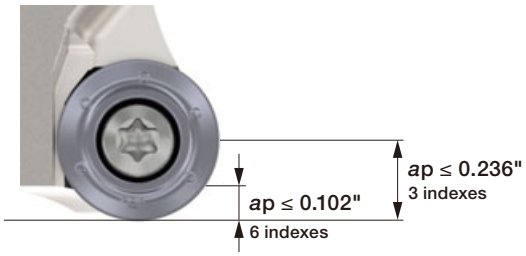
- Both inserts can be clamped in the same pocket
- Inserts can be selected based on the required depth of cut for best cost per edge





RQMT1204ENC8-MM

Allows up to 8 indexes for 0.055" or smaller D.O.C. and up to 4 indexes for up to 0.236" D.O.C.





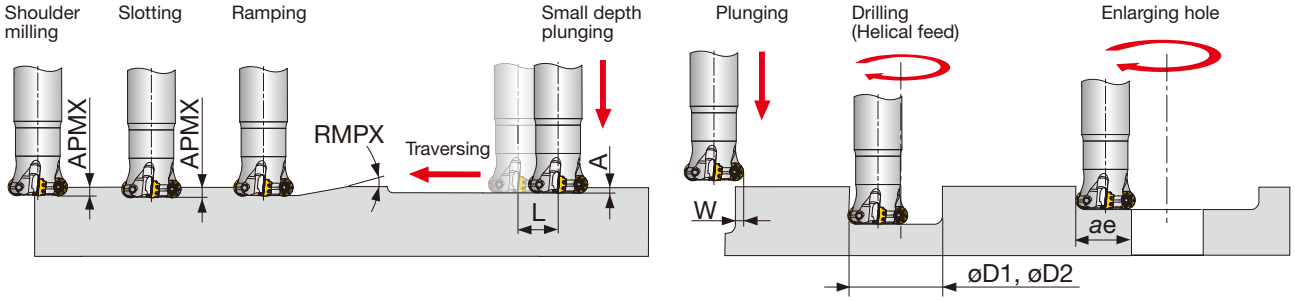
RQMT1204ENC6-MM

Allows up to 6 indexes for 0.102" or smaller D.O.C. and up to 3 indexes for up to 0.236" D.O.C.

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Chipbreaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200HB	First choice	AH3135	MM	328 - 984	
	Carbon steel and alloy steel 1055, etc.		- 300HB	First choice	AH3135	MM	328 - 820	ap = 0.236" : 0.004 - 0.012 ap = 0.079" : 0.006 - 0.024 ap = 0.039" : 0.008 - 0.031
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	MM	328 - 656	
M	Austenitic stainless steel 304, 316, etc.		- 200HB	First choice	AH3135	MM	328 - 656	ap = 0.236" : 0.004 - 0.010 ap = 0.079" : 0.006 - 0.020 ap = 0.039" : 0.008 - 0.026
	Martensitic stainless steel 420, etc.		- 200HB	First choice	AH3135	MM	328 - 984	
K	Gray cast iron No.250B, etc.		150 - 250HB	First choice	AH8015	MM	328 - 984	ap = 0.236" : 0.004 - 0.012 ap = 0.079" : 0.006 - 0.024 ap = 0.039" : 0.008 - 0.031
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH8015	MM	262 - 820	
S	Titanium alloys Ti-6Al-4V, etc.		-	First choice	AH3135	MM	98 - 197	ap = 0.236" : 0.003 - 0.008 ap = 0.079" : 0.005 - 0.016 ap = 0.039" : 0.006 - 0.024
	Heat-resistant alloys Inconel718, etc.		-	First choice	AH8015	MM	66 - 164	ap = 0.236" : 0.002 - 0.005 ap = 0.079" : 0.003 - 0.010 ap = 0.039" : 0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3135	MM	164 - 492	ap = 0.236" : 0.002 - 0.005 ap = 0.079" : 0.003 - 0.010 ap = 0.039" : 0.004 - 0.012
		D2, etc.	50 - 60HRC	First choice	AH8015	MM	164 - 230	ap = 0.236" : 0.001 - 0.004 ap = 0.079" : 0.002 - 0.005 ap = 0.039" : 0.002 - 0.006

APPLICATION RANGE



Metric	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Machining length for removing uncut portion L	Min. machining diameter øD1	Max. machining diameter øD2*	Max. cutting width engagement *ae*
T/ERRQ12M040…	40	6	5.1°	2.4	6	29	59	79	32
TRRQ12M050B22.0…	50	6	3.6°	2.4	6	39	79	99	42
TRRQ12M052B22.0R05	52	6	3.4°	2.4	6	41	83	103	44
TRRQ12M063B22.0…	63	6	3°	2.4	6	52	105	125	55
TRRQ12M080B27.0R06	80	6	2.1°	2.4	6	69	139	159	72

* For flat bottom hole

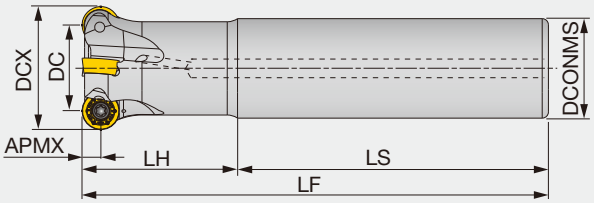
FIXRMILL

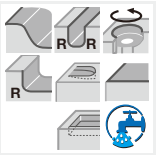
ERP

Radius endmill with anti-rotation system, shank type

GAMP = +10°~ +4°, GAMF = -2°~ -8.5°







Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

Inch	APMX	DCX	DC	CICT	DCONMS	LS	LH	LF	Air hole	Insert
ERP10R100U0100-02	0.197	1.000	0.606	2	1.000	4.000	2.000	6.000	With	RPMT10T3...
ERP10R125U0125-04	0.197	1.250	0.856	4	1.250	4.000	2.000	6.000	With	RPMT10T3...
ERP10R150U0125-04	0.197	1.500	1.106	4	1.250	4.000	2.000	6.000	With	RPMT10T3...
ERP12R125U0125-03	0.236	1.250	0.776	3	1.250	4.000	2.000	6.000	With	RPMT1204...
ERP12R150U0125-04	0.236	1.500	1.034	4	1.250	4.000	2.000	6.000	With	RPMT1204...
ERP16R150U0125-02	0.315	1.500	0.866	2	1.250	4.000	2.000	6.000	With	RPMT1606...

Metric	APMX	DCX	DC	CICT	DCONMS	LS	LH	LF	Air hole	Insert
ERP10R020M20.0-02	5	20	10	2	20	100	50	150	With	RPMT10T3...
ERP10R025M25.0-02	5	25	15	2	25	90	60	150	With	RPMT10T3...
ERP10R032M32.0-04	5	32	22	4	32	80	70	150	With	RPMT10T3...
ERP10R035M32.0-04	5	35	25	4	32	100	50	150	With	RPMT10T3...
ERP12R032M32.0-03	6	32	20	3	32	100	50	150	With	RPMT1204...
ERP12R040M32.0-04	6	40	28	4	32	100	50	150	With	RPMT1204...
ERP16R040M32.0-02	8	40	24	2	32	100	50	150	With	RPMT1606...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
ERP10R...	CSPB-3.5S	M-1000	IP-15D
ERP12R...	CSTR-4L100	M-1000	T-15DB
ERP16R...	CSPB-5	M-1000	IP-20D

Recommended clamping torque: CSPB-3.5S/CSTR-4L100 = 2.58 lbs·ft, 3.5 N·m, CSPB-5 = 3.69 lbf·ft, 5 N·m

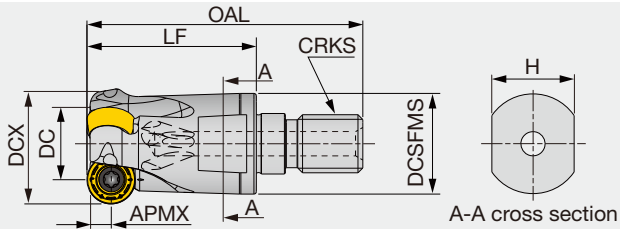
Reference pages: Inserts → H090

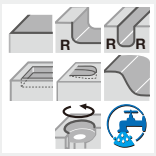
HRP-M

Radius endmill with anti-rotation system, modular type (TungFlex)

GAMP = 1°~ 4°, GAMF = -8.5°~ 2°







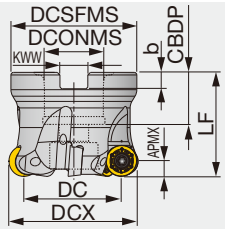
Metric	APMX	DCX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HRP10R020MM10-02	5	20	10	2	49	30	15	17.8	M10	0.1	With	RPMT10T3...
HRP10R025MM12-02	5	25	15	2	57	35	17	20.8	M12	0.1	With	RPMT10T3...
HRP10R032MM16-04	5	32	22	4	63	40	22	28.8	M16	0.2	With	RPMT10T3...
HRP12R032MM16-03	6	32	20	3	63	40	22	28.8	M16	0.2	With	RPMT1204...

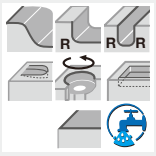
TRP10/12/16

Radius mill with anti-rotation system

GAMP = +4°, GAMF = -4°







Inch	APMX	DCX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TRP12R200U0075A05	0.236	2.000	1.528	5	1.850	0.750	0.750	1.575	0.197	0.315	0.66	With	RPMT1204...
TRP12R250U0100A06	0.236	2.500	2.028	6	2.323	1.000	1.024	1.969	0.236	0.374	1.32	With	RPMT1204...
TRP16R250U0100A05	0.315	2.500	1.869	5	2.323	1.000	1.024	1.969	0.236	0.374	1.32	With	RPMT1606...

Metric	APMX	DCX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TRP10R040M16.0E05	5	40	30	5	35	16	18	40	5.6	8.4	0.2	With	RPMT10T3...
TRP12R050M22.0E05	6	50	38	5	47	22	20	40	6.3	10.4	0.3	With	RPMT1204...
TRP12R052M22.0E05	6	52	40	5	49	22	20	40	6.3	10.4	0.3	With	RPMT1204...
TRP12R063M22.0E06	6	63	51	6	59	22	20	40	6.3	10.4	0.6	With	RPMT1204...
TRP12R066M27.0E06	6	66	54	6	62	27	22	40	7	12.4	0.6	With	RPMT1204...
TRP16R063M22.0E05	8	63	47	5	59	22	20	40	6.3	10.4	0.6	With	RPMT1606...
TRP16R066M27.0E05	8	66	50	5	62	27	22	40	7	12.4	0.7	With	RPMT1606...

INCH SPARE PARTS



Designation	Clamping screw	Lubricant	Torx bit	Grip	Shell locking bolt (Optional parts)
TRP12R200U0075A05	CSTR-4L100	M-1000	BT15S	H-TBS	(C0.375X1.125H)
TRP12R250U0100A06	CSTR-4L100	M-1000	BT15S	H-TBS	(C0.500X1.375H)
TRP16R250U0100A05	CSPB-5	M-1000	BLDIP20/S7	H-TBS	(C0.500X1.375H)

Recommended clamping torque: CSTR-4L100 = 2.58 lbs·ft, CSPB-5 = 3.69 lbs·ft

METRIC SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench		Torx bit	Grip	Shell locking bolt
			Bit	Grip			
HRP10R...	CSPB-3.5S	M-1000	BLD IP15/S7	H-TBS	-	-	-
HRP12R...	CSTR-4L100	M-1000	BT15S	H-TBS	-	-	-
TRP10R040M16.0E05	CSPB-3.5S	M-1000	-	-	BLDIP15/S7	H-TBS	FSHM8-30H
TRP12R050 - 063M22.0...	CSTR-4L100	M-1000	-	-	BT15S	H-TBS	CM10X30H
TRP12R066M27.0E06	CSTR-4L100	M-1000	-	-	BT15S	H-TBS	CM12X30H
TRP16R063M22.0E05	CSPB-5	M-1000	-	-	BLDIP20/S7	H-TBS	CM10X30H
TRP16R066M27.0E05	CSPB-5	M-1000	-	-	BLDIP20/S7	H-TBS	CM12X30H

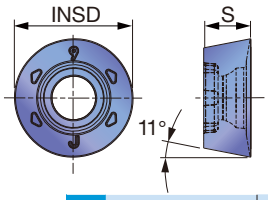
Recommended clamping torque: CSPB-3.5S/CSTR-4L100 = 3.5 N·m, CSPB-5 = 5 N·m

Reference pages: Inserts → H090, TungFlex → H038 - H039

INSERT

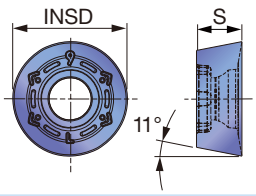
RPMT-MJ





RPMT-ML





P	Steel		★		
M	Stainless	★	☆	★	
K	Cast iron		☆		
N	Non-ferrous				
S	Superalloy	☆	★		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	APMX	Coated			INSD	S
		AH130	AH725	AH4035		
RPMT10T3EN-MJ	0.197	●	●	●	0.394	0.156
RPMT10T3EN-ML	0.197	●	●	●	0.394	0.156
RPMT1204EN-MJ	0.236	●	●	●	0.472	0.187
RPMT1204EN-ML	0.236	●	●	●	0.472	0.187
RPMT1606EN-MJ	0.315	●	●	●	0.630	0.250
RPMT1606EN-ML	0.315	●	●	●	0.630	0.250

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

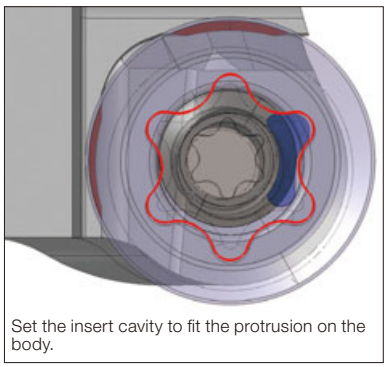
e-catalog
ERP

e-catalog
HRP-M

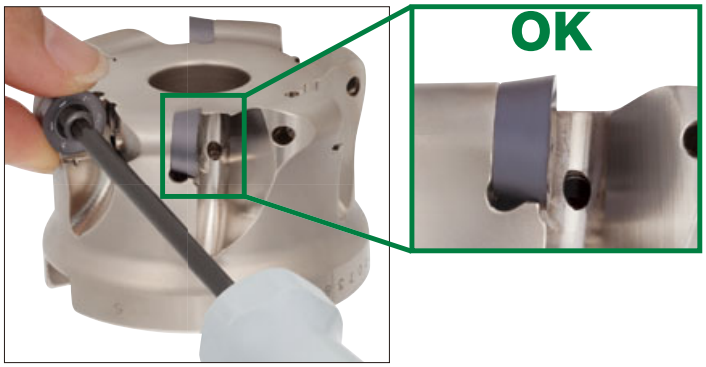
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TRP10/12/16

Caution for insert clamping

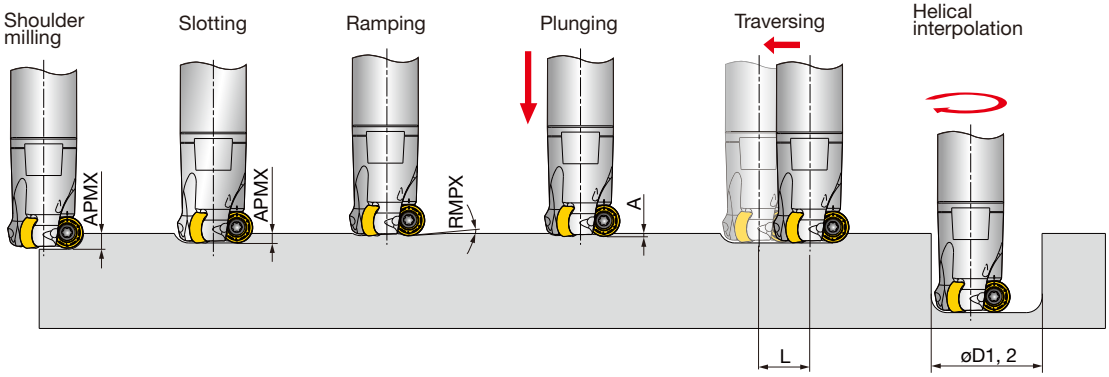
When clamping an insert, please carefully locate it in the seat, fasten the screw, and make sure there is no gap between it and the body.



Set the insert cavity to fit the protrusion on the body.



APPLICATION RANGE



Inch	Tool-ø DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Machining length for removing uncut portion L	Min.machining øD1	*Max. machining øD2
ERP10R100U0100-02	1.000	0.197	3	0.0276	0.630	1.457	1.969
ERP10R125U0125-04	1.250	0.197	8	0.0984	0.866	1.811	2.441
ERP10R150U0125-04	1.500	0.197	6	0.0984	1.142	2.283	2.953
ERP12R125U0125-03	1.250	0.236	8.3	0.0906	0.787	1.693	2.441
ERP12R150U0125-04	1.500	0.236	4	0.0630	1.063	2.244	2.953
ERP16R150U0125-02	1.500	0.315	6	0.0709	0.906	2.008	2.953
TRP12R200U0075A05	2.000	0.236	4	0.0984	1.575	3.189	3.937
TRP12R250U0100A06	2.500	0.236	2.7	0.0906	2.047	4.213	4.921
TRP16R250U0100A05	2.500	0.315	3	0.0906	1.890	3.976	4.921

*For flat bottom hole

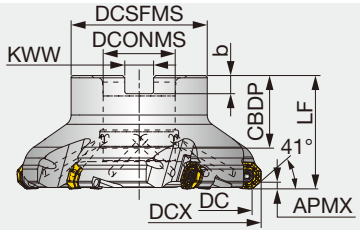
TUNGEIGHT MILL

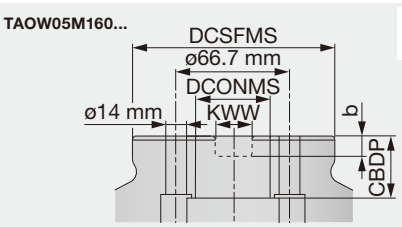
TAOW05

Face mill, with screw clamp system

GAMP = +23°, GAMF = -5°





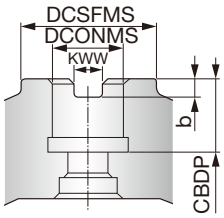


Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TAOW05U2.00B0.75R04	0.118	2.000	2.310	4	1.850	1.575	0.750	0.750	0.315	0.197	0.970	With	OW*T05...	A
TAOW05U2.50B0.75R05	0.118	2.500	2.800	5	1.850	1.575	0.750	0.750	0.315	0.197	1.300	With	OW*T05...	A
TAOW05U3.00B1.00R07	0.118	3.000	3.300	7	1.969	1.969	1.000	1.020	0.374	0.236	1.960	With	OW*T05...	A
TAOW05U4.00B1.50R08	0.118	4.000	4.300	8	3.150	1.969	1.500	1.100	0.626	0.394	3.590	With	OW*T05...	B
TAOW05U5.00B1.50R10	0.118	5.000	5.300	10	3.150	2.480	1.500	1.300	0.626	0.394	6.190	With	OW*T05...	B
TAOW05U6.00B2.00R08	0.118	6.000	6.300	8	3.937	2.480	2.000	1.500	0.748	0.433	9.700	Without	OW*T05...	B

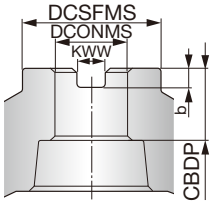
Metric	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TAOW05M050B22.0R04	3	50	57.8	4	41	40	22	20	10.4	6.3	0.35	With	OW*T05...	A
TAOW05M063B22.0R05	3	63	70.7	5	47	40	22	20	10.4	6.3	0.54	With	OW*T05...	A
TAOW05M080B27.0R07	3	80	87.7	7	58	50	27	22	12.4	7	1.07	With	OW*T05...	A
TAOW05J080B25.4R05	3	80	87.7	5	58	50	25.4	26	9.5	6	1.12	With	OW*T05...	A
TAOW05M100B32.0R08	3	100	107.6	8	60	50	32	28.5	14.4	8	1.20	With	OW*T05...	B
TAOW05J100B31.7R06	3	100	107.6	6	60	50	31.75	32	12.7	8	1.27	With	OW*T05...	B
TAOW05M125B40.0R10	3	125	132.6	10	71	63	40	32	16.4	9	2.41	With	OW*T05...	B
TAOW05J125B38.1R07	3	125	132.6	7	80	63	38.1	38	15.9	10	2.72	With	OW*T05...	B
TAOW05M160B40.0R12	3	160	167.6	12	100	63	40	29	16.4	9	4.39	Without	OW*T05...	B
TAOW05J160B50.8R08	3	160	167.6	8	100	63	50.8	46	19	11	4.22	Without	OW*T05...	B

Arbor type

Arbor type A



Arbor type B



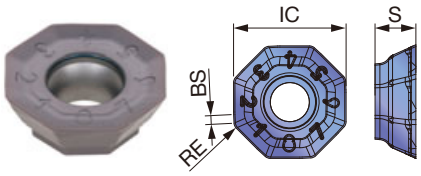
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Shell locking bolt	Shell locking bolt (Optional parts)
TAOW05U2.00..., TAOW05U2.50...	CSPB-4S	SW6-SD	BLDIP15/S7	-	(C0.375X1.125H)
TAOW05U3.00...	CSPB-4S	SW6-SD	BLDIP15/S7	-	(C0.500X1.375H)
TAOW05U4.00..., TAOW05U5.00...	CSPB-4S	SW6-SD	BLDIP15/S7	-	(TMBA-0.750H)
TAOW05U6.00...	CSPB-4S	SW6-SD	BLDIP15/S7	-	-
TAOW05**050..., TAOW05**063...	CSPB-4S	SW6-SD	BLDIP15/S7	CM10X30H	-
TAOW05**080...	CSPB-4S	SW6-SD	BLDIP15/S7	CM12X30H	-
TAOW05**100...	CSPB-4S	SW6-SD	BLDIP15/S7	TMBA-M16H	-
TAOW05**125...	CSPB-4S	SW6-SD	BLDIP15/S7	TMBA-M20H	-
TAOW05**160...	CSPB-4S	SW6-SD	BLDIP15/S7	-	-

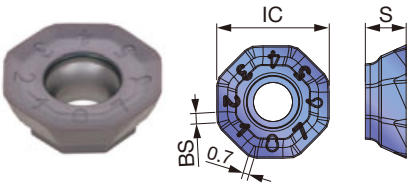
Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

INSERT

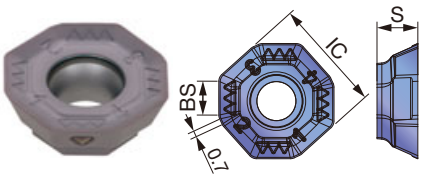
OWMT05T3AFER-MM



OWHT05T3C07AFER-MM



OWHT05T3C07AFER-MW



P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated		IC	S	BS
			AH120	AH3135			
OWMT05T3AFER-MM	0.031	0.118	●	●	0.489	0.177	0.039
OWHT05T3C07AFER-MM	-	0.118	●	●	0.488	0.177	0.045
OWHT05T3C07AFER-MW	-	0.118	●	●	0.488	0.177	0.146

●: Line up

STANDARD CUTTING CONDITIONS

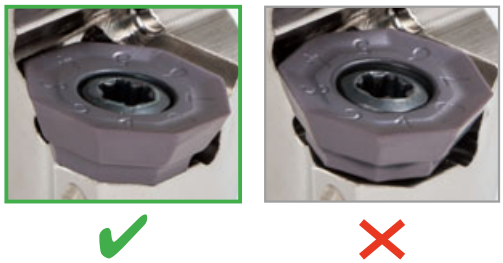
ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.	- 200 HB	First choice	AH3135	MM	325 - 980	0.002 - 0.014
			Wear resistance	AH120	MM	325 - 980	0.002 - 0.014
	High carbon and alloy steel 1055, 4140, etc.	- 300 HB	First choice	AH3135	MM	325 - 820	0.002 - 0.012
			Wear resistance	AH120	MM	325 - 820	0.002 - 0.012
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3135	MM	260 - 655	0.002 - 0.012
			Wear resistance	AH120	MM	260 - 655	0.002 - 0.012
M	Austenitic stainless steel 304, 316, etc.	- 200 HB	First choice	AH3135	MM	325 - 655	0.002 - 0.014
			Wear resistance	AH120	MM	325 - 655	0.002 - 0.014
	Martensitic stainless steel 420, etc.	- 220 HB	First choice	AH3135	MM	325 - 980	0.002 - 0.012
			Wear resistance	AH120	MM	325 - 980	0.002 - 0.012
K	Gray cast iron No.250B, etc.	150 - 250 HB	First choice	AH120	MM	325 - 980	0.002 - 0.014
			Fracture resistance	AH3135	MM	325 - 980	0.002 - 0.014
	Ductile cast iron 80-55-06, etc.	150 - 250 HB	First choice	AH120	MM	260 - 820	0.002 - 0.012
			Fracture resistance	AH3135	MM	260 - 820	0.002 - 0.012
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	MM	95 - 195	0.002 - 0.008
			Wear resistance	AH120	MM	95 - 195	0.002 - 0.008
	Heat-resistant alloys Inconel718, etc.	- 40 HRC	First choice	AH120	MM	65 - 160	0.002 - 0.006
			Fracture resistance	AH3135	MM	65 - 160	0.002 - 0.006
H	Hardened steel H13, etc.	40 - 50 HRC	First choice	AH3135	MM	225 - 425	0.002 - 0.006
			Wear resistance	AH120	MM	225 - 425	0.002 - 0.006

IMPORTANT NOTES

Installing MM inserts

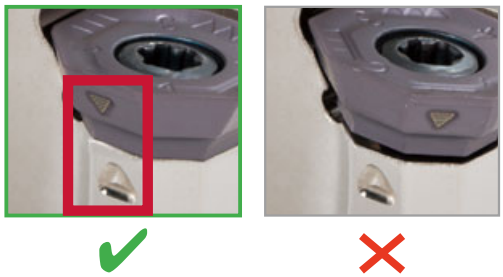
Before tightening the insert screw, make sure that the insert is correctly positioned in the pocket. If the screw is tightened with the insert not in place, the pocket may be damaged.

Do not use an excessive tightening torque as it may damage the pocket preventing proper positioning of the insert.



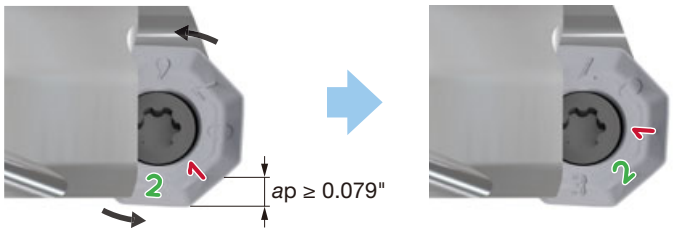
Installing MW (wiper) inserts

Wiper edge is identified with a ▼ inscribed on the insert flank. Make sure to match the ▼ mark to the ▲ mark on the cutter body when installing the wiper insert.



When indexing MM insert

When MM insert is used at a cutting depth of 0.079" or greater, the adjacent wiper is also engaged in the cut. Therefore, it is recommended that the insert is then rotated in the counter clockwise direction for indexing a new cutting edge.

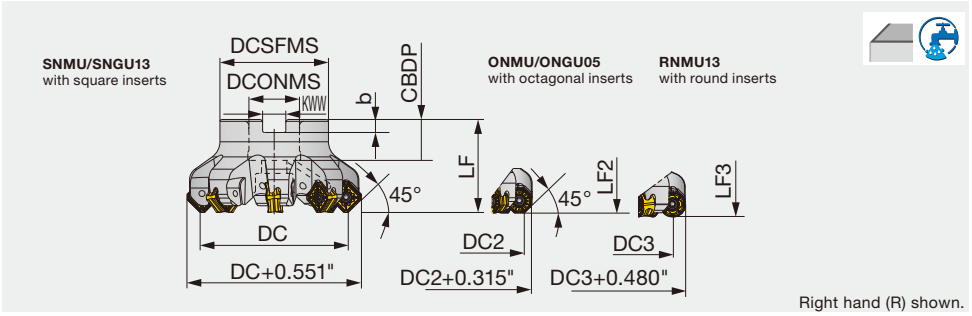


TASN13

Face mill, with screw clamp system

GAMP=+6.0°,GAMF=-6.8°~-6.3°





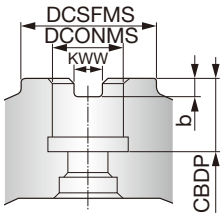
Right hand (R) shown.

Inch	DC	DC2	DC3	CICT	DCSFMS	LF	LF2	LF3	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Arbor type
TASN13U2.00B0.75R05	2.000	2.118	1.949	5	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	0.900	With	A
TASN13U2.50B0.75R06	2.500	2.618	2.449	6	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	1.320	With	A
TASN13U2.50B0.75R08	2.500	2.618	2.449	8	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	1.540	With	A
TASN13U3.00B1.00R08	3.000	3.118	2.949	8	1.969	1.969	1.909	1.911	1.000	1.024	0.374	0.236	1.980	With	A
TASN13U3.00B1.00R10	3.000	3.118	2.949	10	1.969	1.969	1.909	1.911	1.000	1.024	0.374	0.236	2.200	With	A
TASN13U4.00B1.50R08 *	4.000	4.118	3.949	8	3.150	1.969	1.909	1.911	1.500	1.276	0.626	0.394	3.750	Without	B
TASN13U4.00B1.50R12 *	4.000	4.118	3.949	12	3.150	1.969	1.909	1.911	1.500	1.276	0.626	0.394	3.750	Without	B
TASN13U4.00B1.50R08LF2.5	4.000	4.118	3.949	8	3.150	2.480	2.421	2.422	1.500	1.496	0.626	0.394	4.410	Without	B
TASN13U4.00B1.50R12LF2.5	4.000	4.118	3.949	12	3.150	2.480	2.421	2.422	1.500	1.496	0.626	0.394	4.630	Without	B
TASN13U5.00B1.50R10	5.000	5.118	4.949	10	3.150	2.480	2.421	2.422	1.500	1.378	0.626	0.394	5.950	Without	B
TASN13U5.00B1.50R14	5.000	5.118	4.949	14	3.150	2.480	2.421	2.422	1.500	1.378	0.626	0.394	6.720	Without	B
TASN13U6.00B2.00R12	6.000	6.118	5.949	12	3.937	2.480	2.421	2.422	2.000	1.496	0.748	0.433	8.600	Without	B

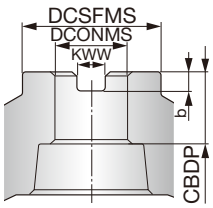
* Discontinued items

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1 (Optional parts)	Shell locking bolt 2 (Optional parts)	Torx bit
TASN13... (DC ≤ 3.000")	CSPB-4	H-TB2W	M-1000	-	(C0.375X1.125H)	BLDIP15/S7
TASN13... (DC = 3.000")	CSPB-4	H-TB2W	M-1000	-	(C0.500X1.375H)	BLDIP15/S7
TASN13... (DC = 4.000")	CSPB-4	H-TB2W	M-1000	(TMBA-0.750S.375H)	-	BLDIP15/S7
TASN13... (DC = 5.000")	CSPB-4	H-TB2W	M-1000	(TMBA-0.750S.375H)	-	BLDIP15/M7
TASN13... (DC = 6.000")	CSPB-4	H-TB2W	M-1000	-	-	BLDIP15/M7

Recommended clamping torque: 2.58 lbs·ft

Reference pages: Inserts → H097, Standard cutting conditions → H098

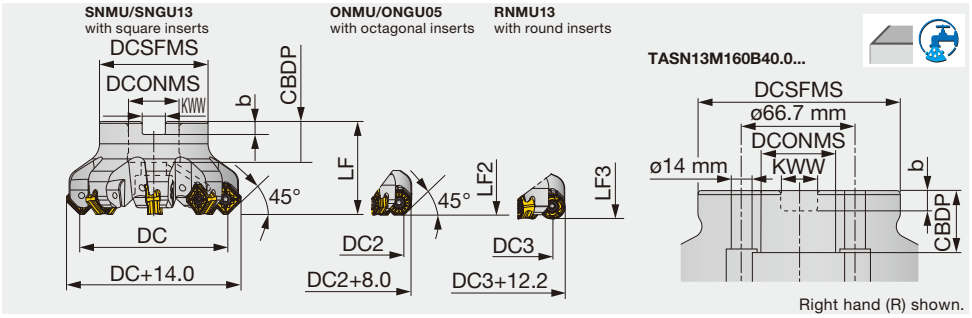
TRIPLE DOTMILL

TASN13

Face mill, with screw clamp system

GAMP=+6.0°,GAMF=-6.8°~-6.3°





Right hand (R) shown.

Metric	DC	DC2	DC3	CICT	DCSFMS	LF	LF2	LF3	DCONMS	CBDP	KWW	b	WT(kg)	Air hole
TASN13M050B22.0R04	50	53	48.7	4	41	40	38.5	38.5	22	20	10.4	6.3	0.4	With
TASN13M050B22.0R05	50	53	48.7	5	41	40	38.5	38.5	22	20	10.4	6.3	0.4	With
TASN13M063B22.0R05	63	66	61.7	5	47	40	38.5	38.5	22	20	10.4	6.3	0.7	With
TASN13M063B22.0R06	63	66	61.7	6	47	40	38.5	38.5	22	20	10.4	6.3	0.6	With
TASN13M063B22.0R08	63	66	61.7	8	47	40	38.5	38.5	22	20	10.4	6.3	0.6	With
TASN13M080B27.0R05	80	83	78.7	5	58	50	48.5	48.5	27	22	12.4	7	1.1	With
TASN13M080B27.0R08	80	83	78.7	8	58	50	48.5	48.5	27	22	12.4	7	1.1	With
TASN13M080B27.0R10	80	83	78.7	10	58	50	48.5	48.5	27	22	12.4	7	1.2	With
TASN13J080B25.4R05	80	83	78.7	5	58	50	48.5	48.5	25.4	26	9.5	6	1.2	With
TASN13J080B25.4R08	80	83	78.7	8	58	50	48.5	48.5	25.4	26	9.5	6	1.1	With
TASN13J080B25.4R10	80	83	78.7	10	58	50	48.5	48.5	25.4	26	9.5	6	1.2	With
TASN13M100B32.0R06	100	103	98.7	6	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13M100B32.0R08	100	103	98.7	8	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13M100B32.0R12	100	103	98.7	12	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13J100B31.7R06	100	103	98.7	6	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13J100B31.7R08	100	103	98.7	8	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13J100B31.7R12	100	103	98.7	12	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13M125B40.0R07	125	128	123.7	7	71	63	61.5	61.5	40	32	16.4	9	2.2	With
TASN13M125B40.0R10	125	128	123.7	10	71	63	61.5	61.5	40	32	16.4	9	2.3	With
TASN13M125B40.0R14	125	128	123.7	14	71	63	61.5	61.5	40	32	16.4	9	2.5	With
TASN13J125B38.1R07	125	128	123.7	7	80	63	61.5	61.5	38.1	38	15.9	10	2.6	With
TASN13J125B38.1R10	125	128	123.7	10	80	63	61.5	61.5	38.1	38	15.9	10	2.7	With
TASN13J125B38.1R14	125	128	123.7	14	80	63	61.5	61.5	38.1	38	15.9	10	2.9	With
TASN13M160B40.0R08	160	163	158.7	8	100	63	61.5	61.5	40	29	16.4	9	4.1	Without
TASN13M160B40.0R12	160	163	158.7	12	100	63	61.5	61.5	40	29	16.4	9	4.2	Without
TASN13J160B50.8R08	160	163	158.7	8	100	63	61.5	61.5	50.8	38	19	11	4.1	Without
TASN13J160B50.8R12	160	163	158.7	12	100	63	61.5	61.5	50.8	38	19	11	4.2	Without

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

SPARE PARTS

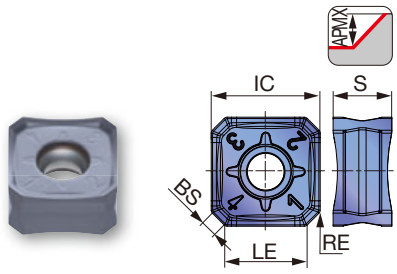
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TASN13M0**B22.0R0*	CSPB-4	H-TB2W	M-1000	-	CM10X30H	BLDIP15/S7
TASN13*080B2*.*R0*	CSPB-4	H-TB2W	M-1000	-	CM12X30H	BLDIP15/S7
TASN13*100B3*.*R0*	CSPB-4	H-TB2W	M-1000	TMBA-M16H	-	BLDIP15/S7
TASN13*125B**.*R**	CSPB-4	H-TB2W	M-1000	TMBA-M20H	-	BLDIP15/S7
TASN13*160B*0.*R**	CSPB-4	H-TB2W	M-1000	-	-	BLDIP15/M7

Recommended clamping torque：3.5 N·m

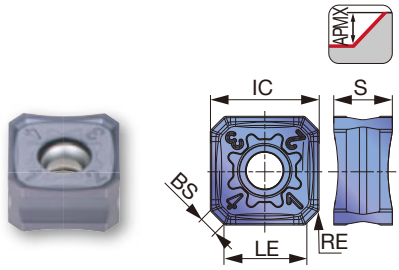
Reference pages: Standard cutting conditions → H098

INSERTS

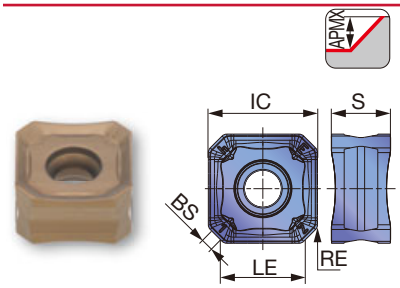
SNMU-MJ



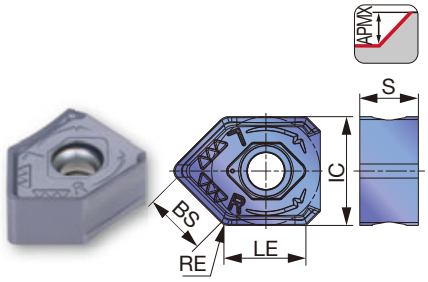
SNGU-MJ



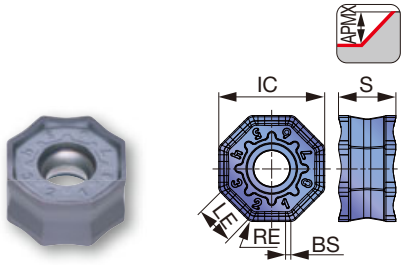
SNGU-MH



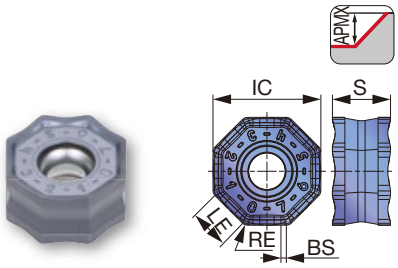
SNGU-W



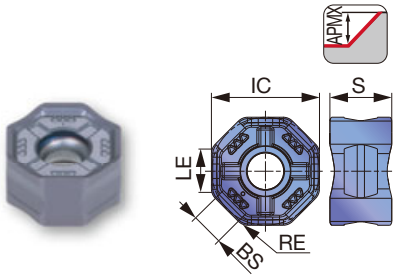
ONMU-MJ



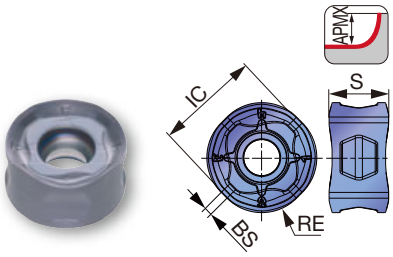
ONGU-MJ



ONGU-W



RNMU-MJ



P	Steel	☆	★	☆	★		
M	Stainless		☆	★	★		
K	Cast iron	★	☆			★	
N	Non-ferrous						
S	Superalloys	★		☆			
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated					LE	IC	S	BS
			AH120	AH3225	AH3135	T3225	T1215				
SNMU1307ANEN-MJ	0.020	0.236	●	●	●	●	●	0.370	0.512	0.276	0.079
SNGU1307ANEN-MJ	0.020	0.236	●	●	●	●	●	0.370	0.512	0.276	0.079
SNGU1307ANEN-MH	0.031	0.236				●		0.354	0.512	0.276	0.079
SNGU1307ANEN-W	0.047	0.236	●	●	●			0.378	0.512	0.276	0.295
ONMU0507ANEN-MJ	0.031	0.134	●	●	●	●	●	0.193	0.512	0.276	0.028
ONGU0507ANEN-MJ	0.031	0.134	●	●	●	●	●	0.193	0.512	0.276	0.028
ONGU0507ANEN-W	0.063	0.134	●	●	●			0.197	0.512	0.293	0.154
RNMU1307ZNER-MJ	0.236	0.236	●	●	●	●	●	-	0.512	0.286	0.039

●: Line up

Reference pages: Standard cutting conditions → H098

STANDARD CUTTING CONDITIONS

SNMU / SNGU / ONMU / ONGU

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		200 - 300HB	First choice	AH3225	MJ	330 - 820	0.004 - 0.020
				For wear resistance	T3225	MJ	660 - 1150	0.004 - 0.016
	High carbon and alloy steel 1055, 4140, etc.		150 - 300HB	First choice	AH3225	MJ	330 - 820	0.004 - 0.016
				For wear resistance	T3225	MJ	590 - 980	0.004 - 0.016
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	MJ	330 - 660	0.004 - 0.016
				For wear resistance	T3225	MJ	490 - 820	0.004 - 0.016
M	Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	MJ	330 - 660	0.004 - 0.014
				For wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
	Cast stainless steel 1.4849, etc.		-	First choice	T3225	MH	200 - 390	0.004 - 0.012
				For low cutting force	AH3135	MJ	200 - 390	0.004 - 0.012
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	T1215	MJ	330 - 980	0.004 - 0.016
					AH120	MJ	330 - 820	0.004 - 0.020
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	T1215	MJ	330 - 980	0.004 - 0.016
					AH120	MJ	260 - 660	0.004 - 0.020
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	AH3135	MJ	100 - 200	0.004 - 0.012
	Heat-resistant alloys Inconel718, etc.		- 40HRC	First choice	AH120	MJ	30 - 130	0.002 - 0.006
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3225	MJ	260 - 430	0.004 - 0.008
		D2, etc.	50 - 60HRC	First choice	AH120	MJ	160 - 230	0.001 - 0.004

RNMU

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		200 - 300HB	First choice	AH3225	MJ	330 - 820	
				For wear resistance	T3225	MJ	660 - 1150	
	High carbon and alloy steel 1055, 4140, etc.		150 - 300HB	First choice	AH3225	MJ	330 - 820	*ap = 0.236": 0.004 - 0.012 *ap = 0.078": 0.016 - 0.031 *ap = 0.039": 0.031 - 0.059
				For wear resistance	T3225	MJ	590 - 980	
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	MJ	330 - 660	
				For wear resistance	T3225	MJ	490 - 820	
M	Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	MJ	330 - 660	*ap = 0.236": 0.004 - 0.010 *ap = 0.078": 0.012 - 0.027 *ap = 0.039": 0.024 - 0.051
				For wear resistance	T3225	MJ	330 - 820	
	Cast stainless steel 1.4849, etc.		-	First choice	T3225	MJ	200 - 390	*ap = 0.078": 0.008 - 0.016 *ap = 0.039": 0.012 - 0.031
				For fracture resistance	AH3135	MJ	200 - 390	
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH120	MJ	330 - 980	
					T1215	MJ	330 - 820	*ap = 0.236": 0.004 - 0.012 *ap = 0.078": 0.016 - 0.031 *ap = 0.039": 0.031 - 0.059
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	MJ	330 - 980	
					T1215	MJ	260 - 660	
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	AH3135	MJ	100 - 200	*ap = 0.039": 0.006 - 0.031
	Heat-resistant alloys Inconel718, etc.		- 40HRC	First choice	AH120	MJ	30 - 130	*ap = 0.039": 0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3225	MJ	260 - 430	*ap = 0.039": 0.004 - 0.010
		D2, etc.	50 - 60HRC	First choice	AH120	MJ	160 - 230	*ap = 0.020": 0.001 - 0.004

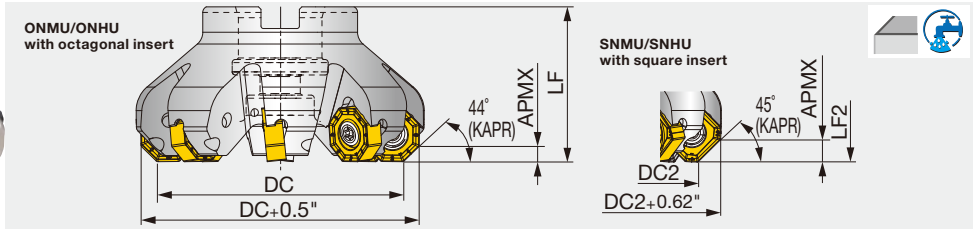
* When using T3225 or T1215, decrease the feed per tooth (*fz*) to 80% of the above mentioned value.

TAN07

Face mill, with screw clamp system

GAMP=-6°,GAMF=+15.5°

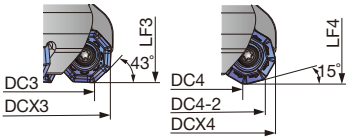




Inch	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAN07R250U0075A05	2.500	2.394	5	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.000	With	SN*U/ON*U/OWMT...	A
TAN07R250U0075A06	2.500	2.394	6	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.000	With	SN*U/ON*U/OWMT...	A
TAN07R300U0100A06	3.000	2.894	6	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.000	With	SN*U/ON*U/OWMT...	A
TAN07R300U0100A08	3.000	2.894	8	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.000	With	SN*U/ON*U/OWMT...	A
TAN07R400U0150A07	4.000	3.894	7	2.400	2.000	2.055	1.500	1.000	0.625	0.375	3.000	With	SN*U/ON*U/OWMT...	B
TAN07R400U0150A10	4.000	3.894	10	2.400	2.000	2.055	1.500	1.000	0.625	0.375	3.000	With	SN*U/ON*U/OWMT...	B
TAN07R500U0150A08	5.000	4.894	8	2.400	2.500	2.555	1.500	1.000	0.625	0.375	5.000	With	SN*U/ON*U/OWMT...	B
TAN07R500U0150A12	5.000	4.894	12	2.400	2.500	2.555	1.500	1.000	0.625	0.375	5.000	With	SN*U/ON*U/OWMT...	B
TAN07R600U0200A10	6.000	5.894	10	4.000	2.500	2.555	2.000	1.000	0.750	0.438	7.000	Without	SN*U/ON*U/OWMT...	B
TAN07R600U0200A15	6.000	5.894	15	4.000	2.500	2.555	2.000	1.000	0.750	0.438	7.000	Without	SN*U/ON*U/OWMT...	B
TAN07R800U0250A12	8.000	7.894	12	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.000	Without	SN*U/ON*U/OWMT...	C
TAN07R800U0250A18	8.000	7.894	18	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.000	Without	SN*U/ON*U/OWMT...	C

Dimension when using positive type inserts (OWMT)

OWMT-ML **OWMT-HJ**

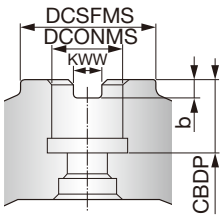


Inch	OWMT-ML			OWMT-HJ			
	DC3	DCX3	LF3	DC4	DC4-2	DCX4	LF4
TAN07R250U0075A...	2.520	2.213	1.789	3.000	2.665	3.028	1.805
TAN07R300U0100A...	3.020	2.713	2.039	3.500	3.165	3.528	2.055
TAN07R400U0150A...	4.020	3.713	2.039	4.500	4.165	4.528	2.055
TAN07R500U0150A...	5.020	4.713	2.539	5.500	5.165	5.528	2.555
TAN07R600U0200A...	6.020	5.713	2.539	6.500	6.165	6.528	2.555
TAN07R800U0250A...	8.020	7.713	2.539	8.500	8.165	8.528	2.555

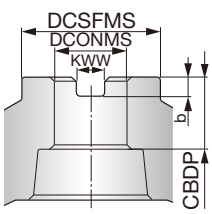
OWMT08 inserts can be only used with screw on type cutters.

Arbor type

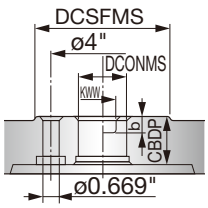
Arbor type A



Arbor type B



Arbor type C



SPARE PARTS



Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)
TAN07R250...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(C0.375X1.125H)
TAN07R300...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(C0.500X1.375H)
TAN07R400, 500...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(TMBA-0.750H)
TAN07R600, 800...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	-

Recommended clamping torque: 5.53 lbs·ft

Reference pages: Inserts → H103, Standard cutting conditions → H104

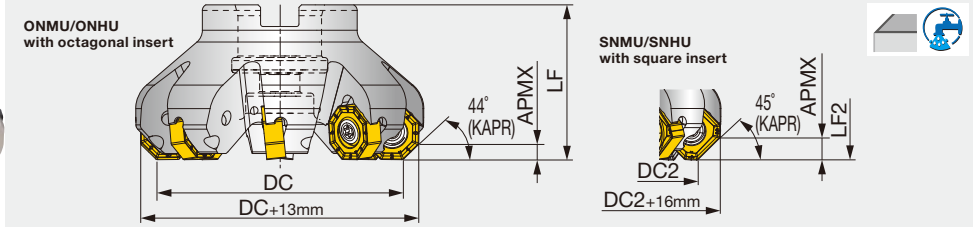
DOOCTO

TAN07

Face mill, with screw clamp system

GAMP=-6°,GAMF=+15.5°





Metric	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TAN07R063M22.0E05	63	60.3	5	41	40	41.4	22	20	10.4	6.3	0.5	With	SN*U/ON*U/OWMT...	A
TAN07R063M22.0E06	63	60.3	6	41	40	41.4	22	20	10.4	6.3	0.5	With	SN*U/ON*U/OWMT...	A
TAN07R080M25.4-06	80	77.3	6	50	50	51.4	25.4	26	9.5	6	1	With	SN*U/ON*U/OWMT...	A
TAN07R080M25.4-08	80	77.3	8	50	50	51.4	25.4	26	9.5	6	1	With	SN*U/ON*U/OWMT...	A
TAN07R080M27.0E06	80	77.3	6	50	50	51.4	27	22	12.4	7	1	With	SN*U/ON*U/OWMT...	A
TAN07R080M27.0E08	80	77.3	8	50	50	51.4	27	22	12.4	7	1	With	SN*U/ON*U/OWMT...	A
TAN07R100M31.7-07	100	97.3	7	60	50	51.4	31.75	32	12.7	8	1.5	With	SN*U/ON*U/OWMT...	B
TAN07R100M31.7-10	100	97.3	10	60	50	51.4	31.75	32	12.7	8	1.5	With	SN*U/ON*U/OWMT...	B
TAN07R100M32.0E07	100	97.3	7	60	50	51.4	32	28.5	14.4	8	1.5	With	SN*U/ON*U/OWMT...	B
TAN07R100M32.0E10	100	97.3	10	60	50	51.4	32	28.5	14.4	8	1.5	With	SN*U/ON*U/OWMT...	B
TAN07R125M38.1-08	125	122.3	8	80	63	64.4	38.1	38	15.9	10	2.5	With	SN*U/ON*U/OWMT...	B
TAN07R125M38.1-12	125	122.3	12	80	63	64.4	38.1	38	15.9	10	2.5	With	SN*U/ON*U/OWMT...	B
TAN07R125M40.0E08	125	122.3	8	71	63	64.4	40	29	16.4	9	2.5	With	SN*U/ON*U/OWMT...	B
TAN07R125M40.0E12	125	122.3	12	71	63	64.4	40	29	16.4	9	2.5	With	SN*U/ON*U/OWMT...	B
TAN07R160M40.0E10	160	157.3	10	100	63	64.4	40	29	16.4	9	4	Without	SN*U/ON*U/OWMT...	D
TAN07R160M40.0E15	160	157.3	15	100	63	64.4	40	29	16.4	9	4	Without	SN*U/ON*U/OWMT...	D
TAN07R160M50.8-10	160	157.3	10	100	63	64.4	50.8	38	19	11	4	Without	SN*U/ON*U/OWMT...	B
TAN07R160M50.8-15	160	157.3	15	100	63	64.4	50.8	38	19	11	4	Without	SN*U/ON*U/OWMT...	B
TAN07R200M47.6-12	200	197.3	12	130	63	64.4	47.625	38	25.4	14	6.6	Without	SN*U/ON*U/OWMT...	C
TAN07R200M47.6-18	200	197.3	18	130	63	64.4	47.625	38	25.4	14	6.7	Without	SN*U/ON*U/OWMT...	C
TAN07R200M60.0E12	200	197.3	12	135	63	64.4	60	38	25.7	14	6.5	Without	SN*U/ON*U/OWMT...	C
TAN07R200M60.0E18	200	197.3	18	135	63	64.4	60	38	25.7	14	6.5	Without	SN*U/ON*U/OWMT...	C
TAN07R250M47.6-15	250	247.3	15	130	63	64.4	47.625	38	25.4	14	9.3	Without	SN*U/ON*U/OWMT...	C
TAN07R250M47.6-21	250	247.3	21	130	63	64.4	47.625	38	25.4	14	9.4	Without	SN*U/ON*U/OWMT...	C
TAN07R250M60.0E15	250	247.3	15	130	63	64.4	60	38	25.7	14	9	Without	SN*U/ON*U/OWMT...	C
TAN07R250M60.0E21	250	247.3	21	130	63	64.4	60	38	25.7	14	9	Without	SN*U/ON*U/OWMT...	C
TAN07R315M47.6-18	315	312.3	18	220	63	64.4	47.625	38	25.4	14	17.9	Without	SN*U/ON*U/OWMT...	C
TAN07R315M47.6-24	315	312.3	24	220	63	64.4	47.625	38	25.4	14	18	Without	SN*U/ON*U/OWMT...	C
TAN07R315M60.0E18	315	312.3	18	220	80	81.4	60	38	25.7	14	18	Without	SN*U/ON*U/OWMT...	E
TAN07R315M60.0E24	315	312.3	24	220	80	81.4	60	38	25.7	14	18	Without	SN*U/ON*U/OWMT...	E

Approach angle

7°-25°

41°-45°

60°-70°

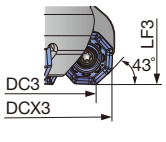
85°-88°

90°

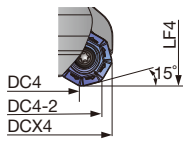
Others

Dimension when using positive type inserts (OWMT)

OWMT-ML



OWMT-HJ

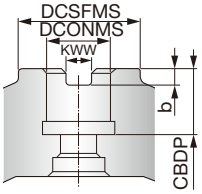


Designation	OWMT-ML			OWMT-HJ			
	DC3	DCX3	LF3	DC4	DC4-2	DCX4	LF4
TAN07R063M...	63.5	76	41	55.7	67.2	76.4	41.4
TAN07R080M...	80.5	93	51	72.7	84.2	93.4	51.4
TAN07R100M...	100.5	113	51	92.7	104.2	113.4	51.4
TAN07R125M...	125.5	138	64	117.7	129.2	138.4	64.4
TAN07R160M...	160.5	173	64	152.7	164.2	173.4	64.4
TAN07R200M...	200.5	213	64	192.7	204.2	213.4	64.4
TAN07R250M...	250.5	263	64	242.7	254.2	263.4	64.4
TAN07R315M...	315.5	328	64	307.7	319.2	328.4	64.4

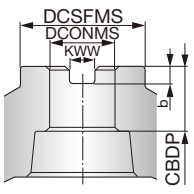
Note: OWMT08 inserts can be only used with screw on type cutters.

Arbor type

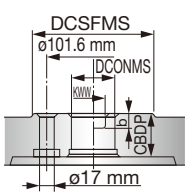
Arbor type A



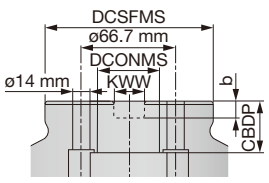
Arbor type B



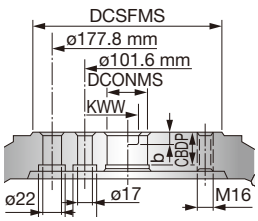
Arbor type C



Arbor type D



Arbor type E



SPARE PARTS



Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TAN07R063M22.0...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	CM10X30H	BLDIP20/S7
TAN07R080M25.4...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	CM12X30H	BLDIP20/S7
TAN07R100M31.7...	SRM5X0.8IP20X+ACROLYTE	H-TB	TMBA-M16H	-	BLDIP20/S7
TAN07R125M38.1...	SRM5X0.8IP20X+ACROLYTE	H-TB	TMBA-M20H	-	BLDIP20/S7
TAN07R160 - 315...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	-	BLDIP20/M7

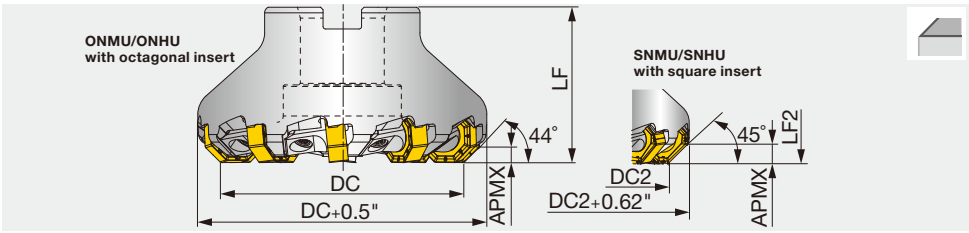
Recommended clamping torque：7.5 N·m

Reference pages: Inserts → H103, Standard cutting conditions → H104

TAN07-W

High density face mill, with wedge clamp system



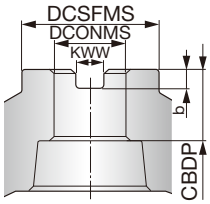


Inch	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAN07R250U0075A08W	2.500	2.394	8	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.60	Without	SN*U/ON*U/OWMT...	B
TAN07R300U0100A10W	3.000	2.894	10	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.00	Without	SN*U/ON*U/OWMT...	B
TAN07R400U0150A14W	4.000	3.894	14	2.400	2.000	2.055	1.500	1.000	0.625	0.375	2.80	Without	SN*U/ON*U/OWMT...	B
TAN07R500U0150A18W	5.000	4.894	18	2.400	2.500	2.555	1.500	1.000	0.625	0.375	4.30	Without	SN*U/ON*U/OWMT...	B
TAN07R600U0200A22W	6.000	5.894	22	4.000	2.500	2.555	2.000	1.000	0.750	0.438	6.80	Without	SN*U/ON*U/OWMT...	B
TAN07R800U0250A28W	8.000	7.894	28	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.50	Without	SN*U/ON*U/OWMT...	C

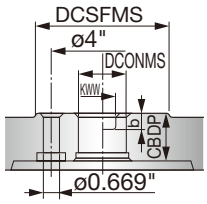
OWMT insert cannot be used with a wedge clamp type cutter.

Arbor type

Arbor type B



Arbor type C



SPARE PARTS

Designation	Grip	Torx bit	Wedge	Clamping screw	Shell locking bolt (Optional parts)
TAN07R250U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(C0.375X1.125H)
TAN07R300U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(C0.500X1.375H)
TAN07R400U**W, TAN07R500U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(TMBA-0.750H)
TAN07R600U**W, TAN07R800U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	-

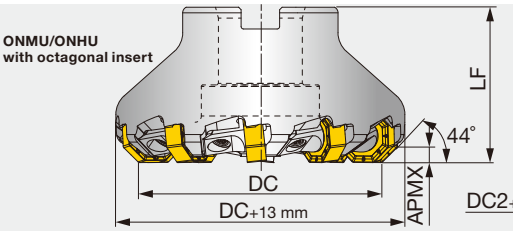
Reference pages: Inserts → H103, Standard cutting conditions → H104

DOOCTO

TAN07-W

High density face mill, with wedge clamp system



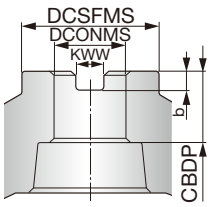


Metric	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TAN07R063M22.0E08W	63	60.3	8	41	40	41.4	22	20	10.4	6.3	0.6	Without	SN*U/ON*U...	B
TAN07R080M25.4-10W	80	77.3	10	50	50	51.4	25.4	26	9.5	6	1	Without	SN*U/ON*U...	B
TAN07R080M27.0E10W	80	77.3	10	50	50	51.4	27	25	12.4	7	1.1	Without	SN*U/ON*U...	B
TAN07R100M31.7-14W	100	97.3	14	60	50	51.4	31.75	32	12.7	8	1.3	Without	SN*U/ON*U...	B
TAN07R100M32.0E14W	100	97.3	14	60	50	51.4	32	28.5	14.4	8	1.6	Without	SN*U/ON*U...	B
TAN07R125M38.1-18W	125	122.3	18	80	63	64.4	38.1	38	15.9	10	2.8	Without	SN*U/ON*U...	B
TAN07R125M40.0E18W	125	122.3	18	71	63	64.4	40	29	16.4	9	2.5	Without	SN*U/ON*U...	B
TAN07R160M50.8-22W	160	157.3	22	100	63	64.4	50.8	38	19	11	4	Without	SN*U/ON*U...	B
TAN07R160M40.0E22W	160	157.3	22	100	63	64.4	40	29	16.4	9	3.6	Without	SN*U/ON*U...	D
TAN07R200M60.0E28W	200	197.3	28	135	63	64.4	60	39	25.7	14	5.8	Without	SN*U/ON*U...	C

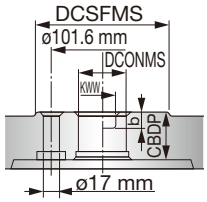
OWMT insert cannot be used with a wedge clamp type cutter.

Arbor type

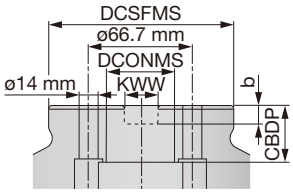
Arbor type B



Arbor type C



Arbor type D



Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

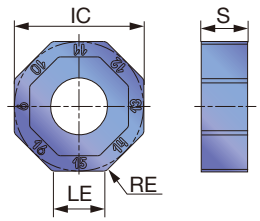
SPARE PARTS

Designation	Grip	Wedge	Wedge fixing screw	Torx bit
TAN07-W	H-TBS	CLARM-10-TUNG1	DS-6P	BLDIP15/S7

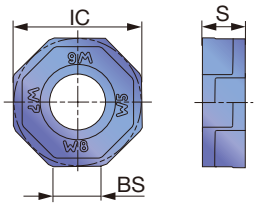
Reference pages: Standard cutting conditions → H104

INSERT

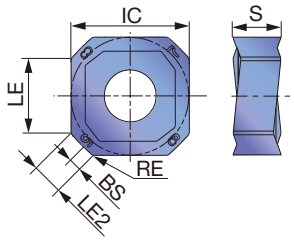
ONMU/ONHU0705-MJ / -ML



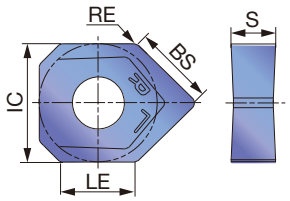
ONHU0705-W



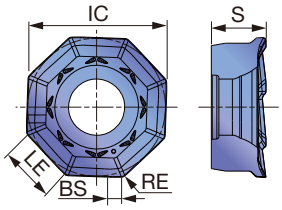
SNMU/SNHU1706 -MJ / -ML



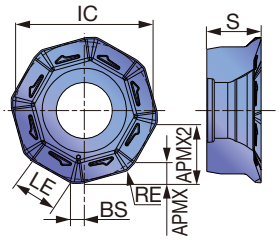
SNHU1706-W



OWMT0807-ML



OWMT0807-HJ



P	Steel			☆	★	★			★
M	Stainless		☆			★			★
K	Cast iron	★			☆			★	
N	Non-ferrous								
S	Superalloys		☆			☆			
H	Hard materials					☆			

★ : First choice
☆ : Second choice

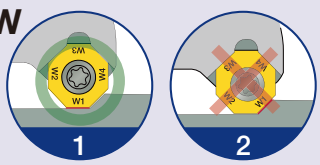
Designation	RE	APMX	Coated								LE	S	LE2	IC	BS	APMX2
			AH120	AH130	AH140	AH725	AH3135	T1115	T1215	T3225						
ONMU0705ANPN-MJ	0.031	0.187			●	●	●	●	●	●	0.283	0.244	-	0.681	-	-
ONHU0705ANPN-MJ	0.031	0.187			●	●					0.283	0.244	-	0.681	-	-
ONMU0705ANPN-ML	0.031	0.187	●				●				0.283	0.244	-	0.681	-	-
ONHU0705ANTN-ML	0.031	0.187	●		●	●					0.283	0.244	-	0.681	-	-
ONHU0705ANPR-W *	-	0.187	●								0.283	0.228	-	0.689	0.252	-
OWMT0807ZNER-HJ	0.031	0.059					●				-	0.291	-	0.748	0.039	0.295
OWMT0807AAER-ML	0.047	0.138		●			●				0.205	0.291	-	-	0.047	-
SNMU1706ANPR-MJ	0.031	0.295			●	●	●		●	●	0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANPR-MJ	0.031	0.295			●	●					0.433	0.275	0.173	0.681	0.709	-
SNMU1706ANTR-ML	0.031	0.295	●				●				0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANTR-ML	0.031	0.295	●								0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANFN-W *	0.016	0.295	●								0.681	0.256	-	0.681	0.433	-

* Pay attention to the wiper insert installation procedure below.

●: Line up

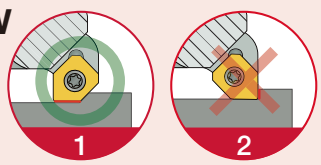
Attention for wiper inserts

ONHU0705ANPR-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 0.217 ipr

SNHU1706ANFN-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 0.374 ipr

Reference pages: Standard cutting conditions → H104

STANDARD CUTTING CONDITIONS

Negative type

ISO	Workpiece material	Hardness	Priority	Recommendation Grade	Recommendation Chipbreaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.	- 200 HB	First choice	AH3135	MJ	330 - 820	0.008 - 0.020
		- 200 HB	Wear resistance	T3225	MJ	660 - 1150	0.008 - 0.016
		- 200 HB	Low cutting force	AH3135	ML	330 - 820	0.008 - 0.016
	High carbon steel 1045, 1055, etc.	200 - 300 HB	First choice	AH3135	MJ	330 - 750	0.008 - 0.016
		200 - 300 HB	Wear resistance	T3225	MJ	590 - 660	0.008 - 0.016
		200 - 300 HB	Low cutting force	AH3135	ML	330 - 750	0.008 - 0.016
	Alloy steel 4140, etc.	150 - 330 HB	First choice	AH3135	MJ	330 - 660	0.008 - 0.016
		150 - 330 HB	Wear resistance	T3225	MJ	490 - 820	0.008 - 0.016
		150 - 330 HB	Low cutting force	AH3135	ML	330 - 660	0.008 - 0.016
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	MJ	330 - 660	0.004 - 0.012
		- 200 HB	Wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
K	Gray cast iron No.35B, No.45B, etc.	150 - 250 HB	First choice	T1215	MJ	490 - 660	0.008 - 0.020
		150 - 250 HB	Fracture resistance	AH725	MJ	330 - 820	0.008 - 0.020
		150 - 250 HB	Low cutting force	AH120	ML	330 - 820	0.008 - 0.020
	Ductile cast iron 60-40-18, etc.	150 - 300 HB	First choice	T1215	MJ	330 - 660	0.008 - 0.020
		150 - 300 HB	Fracture resistance	AH725	MJ	260 - 660	0.008 - 0.020
		150 - 300 HB	Low cutting force	AH120	ML	260 - 660	0.008 - 0.020
H	Hardened steel	40 - 50 HRC	First choice	AH725	MJ	260 - 430	0.004 - 0.008
		50 - 60 HRC	First choice	AH725	MJ	160 - 230	0.002 - 0.004

Positive type

Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90°

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per tooth : *fz* (ipt) ML	Feed per tooth : *fz* (ipt) HJ*
P	Low carbon steel 1015, etc.	- 200 HB	First choice	AH3135	330 - 980	0.004 - 0.016	0.02 - 0.059
		- 200 HB	Fracture resistance	AH130	330 - 980	0.004 - 0.016	-
	High carbon steel 1045, 1055, etc.	200 - 300 HB	First choice	AH3135	330 - 750	0.004 - 0.010	0.02 - 0.059
		200 - 300 HB	Fracture resistance	AH130	330 - 750	0.004 - 0.010	-
	Alloy steel 4140, etc.	150 - 330 HB	First choice	AH3135	330 - 660	0.004 - 0.010	0.02 - 0.059
		150 - 330 HB	Fracture resistance	AH130	330 - 660	0.004 - 0.010	-
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	330 - 500	0.004 - 0.010	0.012 - 0.02
		- 200 HB	Fracture resistance	AH130	330 - 500	0.004 - 0.010	-
K	Gray cast iron No.35B, No.45B, etc.	150 - 250 HB	First choice	AH3135	330 - 830	0.004 - 0.016	0.02 - 0.059
		150 - 250 HB	Fracture resistance	AH130	330 - 830	0.004 - 0.016	-
	Ductile cast iron 60-40-18, etc.	150 - 250 HB	First choice	AH3135	260 - 660	0.004 - 0.010	0.02 - 0.059
		150 - 250 HB	Fracture resistance	AH130	260 - 660	0.004 - 0.010	-
S	Titanium alloy Ti-6Al-4V, etc.	- HRC 40	First choice	AH3135	100 - 200	0.004 - 0.010	0.012 - 0.02
		- HRC 40	Fracture resistance	AH130	100 - 200	0.004 - 0.010	-
	Heat resistant alloy Inconel718, etc.	- HRC 40	First choice	AH3135	30 - 130	0.002 - 0.006	0.004 - 0.012
		- HRC 40	Fracture resistance	AH130	30 - 130	0.002 - 0.006	-
H	Hardened steel	40 - 50 HRC	First choice	AH3135	260 - 420	-	0.004 - 0.012
		50 - 60 HRC	First choice	AH3135	160 - 230	-	0.001 - 0.003

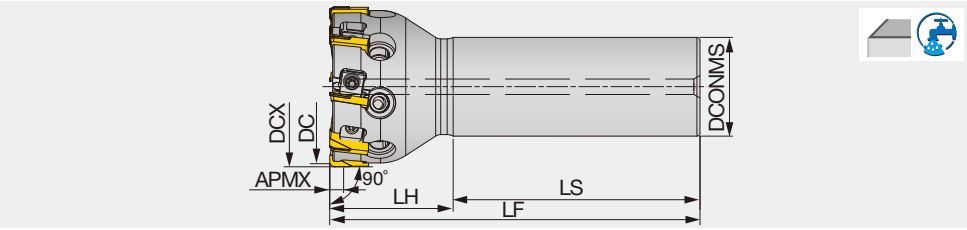
* Apply 20% of recommended feed when using HJ insert with ap over 0.059".

EPYD06

Face milling cutter for non-ferrous applications, shank type, with PCD inserts

GAMP = +9°, GAMF = +4°





Inch	APMX	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(lb)	Air hole	RPMX(min^{-1})	Insert
EPYD06U2.00C1.25R08	0.177	2.000	2.079	8	1.250	4.500	1.575	2.925	1.920	With	22,000	YDEN0603...

Metric	APMX	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	RPMX(min^{-1})	Insert
EPYD06M050C32.0R06	4.5	50	52	6	32	120	40	80	0.91	With	20,000	YDEN0603...
EPYD06M050C32.0R08	4.5	50	52	8	32	120	40	80	0.9	With	20,000	YDEN0603...

SPARE PARTS

Designation	Insert locking wedge	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip
EPYD06...	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W

Reference pages: Inserts → H107, Standard cutting conditions → H107

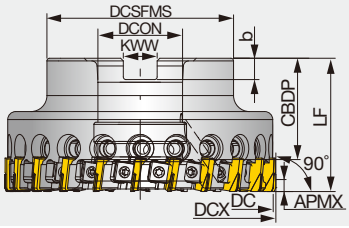
TUNGSFEED MILL

TPYD06

Face milling cutter for non-ferrous applications, bore type, with PCD inserts

GAMP = +9°, GAMF = +4°





Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCON	CBDP	KWW	b	WT(lb)	Air hole	RPMX(min-1)	Insert
TPYD06U2.50B0.75R10	0.177	2.500	2.579	10	1.772	1.575	0.750	0.750	0.315	0.197	1.340	With	19,000	YDEN0603...
TPYD06U3.00B1.00R16	0.177	3.000	3.079	16	2.362	1.969	1.000	1.024	0.374	0.236	2.560	With	17,000	YDEN0603...
TPYD06U4.00B1.25R22	0.177	4.000	4.079	22	2.756	1.969	1.250	0.827	0.500	0.315	4.300	With	15,000	YDEN0603...
TPYD06U5.00B1.50R26	0.177	5.000	5.079	26	3.543	2.362	1.500	1.299	0.626	0.394	8.030	With	14,000	YDEN0603...
TPYD06U6.00B1.50R34	0.177	6.000	6.079	34	3.543	2.362	1.500	1.299	0.626	0.394	10.760	With	12,000	YDEN0603...

Metric	APMX	DC	DCX	CICT	DCSFMS	LF	DCON	CBDP	KWW	b	WT(kg)	Air hole	RPMX(min-1)	Insert
TPYD06M063B22.0R08	4.5	63	65	8	45	40	22	20	10.4	6.3	0.59	With	19,000	YDEN0603...
TPYD06M063B22.0R10	4.5	63	65	10	45	40	22	20	10.4	6.3	0.57	With	19,000	YDEN0603...
TPYD06M080B27.0R10	4.5	80	82	10	60	50	27	22	12.4	7	1.3	With	17,000	YDEN0603...
TPYD06M080B27.0R16	4.5	80	82	16	60	50	27	22	12.4	7	1.24	With	17,000	YDEN0603...
TPYD06J080B25.4R10	4.5	80	82	10	60	50	25.4	26	9.5	6	1.31	With	17,000	YDEN0603...
TPYD06J080B25.4R16	4.5	80	82	16	60	50	25.4	26	9.5	6	1.26	With	17,000	YDEN0603...
TPYD06M100B32.0R12	4.5	100	102	12	70	50	32	25	14.4	8	1.85	With	15,000	YDEN0603...
TPYD06M100B32.0R22	4.5	100	102	22	70	50	32	25	14.4	8	1.78	With	15,000	YDEN0603...
TPYD06J100B31.7R12	4.5	100	102	12	70	50	31.75	32	12.7	8	1.84	With	15,000	YDEN0603...
TPYD06J100B31.7R22	4.5	100	102	22	70	50	31.75	32	12.7	8	1.76	With	15,000	YDEN0603...
TPYD06M125B40.0R14	4.5	125	127	14	90	60	40	32	16.4	9	3.59	With	14,000	YDEN0603...
TPYD06M125B40.0R26	4.5	125	127	26	90	60	40	32	16.4	9	3.48	With	14,000	YDEN0603...
TPYD06J125B38.1R14	4.5	125	127	14	90	60	38.1	38	15.9	10	3.61	With	14,000	YDEN0603...
TPYD06J125B38.1R26	4.5	125	127	26	90	60	38.1	38	15.9	10	3.56	With	14,000	YDEN0603...
TPYD06M160B40.0R20	4.5	160	162	20	90	60	40	32	16.4	9	5.34	With	12,000	YDEN0603...
TPYD06M160B40.0R34	4.5	160	162	34	90	60	40	32	16.4	9	5.2	With	12,000	YDEN0603...
TPYD06J160B38.1R20	4.5	160	162	20	90	60	38.1	38	15.9	10	5.43	With	12,000	YDEN0603...
TPYD06J160B38.1R34	4.5	160	162	34	90	60	38.1	38	15.9	10	5.29	With	12,000	YDEN0603...

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

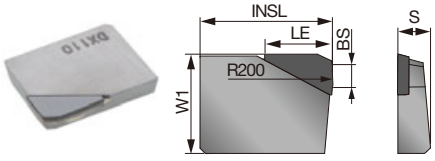
SPARE PARTS



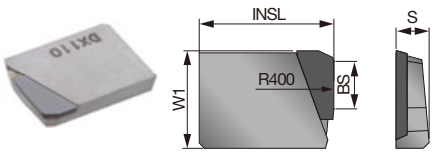
Designation	Insert locking wedge	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip	Shell locking bolt	Shell locking bolt (Optional parts)
TPYD06U2.50B0.75R10	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(C0.375X1.125H)
TPYD06U3.00B1.00R16	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(C0.500X1.375H)
TPYD06U4.00B1.25R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	-
TPYD06U5.00..., 6.00...	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(TMBA-0.750H)
TPYD06M063B22.0R**	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM10x30H	-
TPYD06*080B2*.*R**	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM12x30H	-
TPYD06M100B32.0R**	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM16x40H	-
TPYD06J100B31.7R**	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M16H	-
TPYD06*125B**.*R**, TPYD06*160B**.*R**	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M20H	-

INSERT

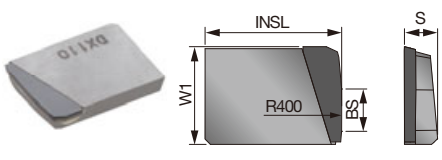
YDEN0603PD(F/S)R-D



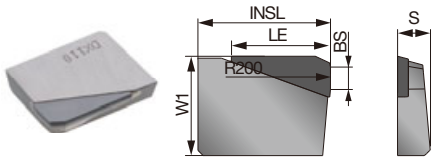
YDEN0603PDFR-WD



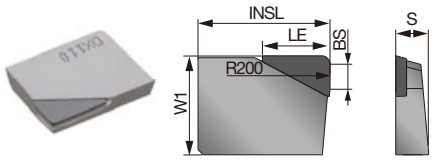
YDEN0603PDFR-BD



YDEN0603PDCR-LD



YDEN0603(04/08)PDFR-D



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice

Designation	APMX	Edge prep.	PCD DX110	W1	INSL	S	BS	LE
YDEN0603PDFR-D	0.177	Without	●	0.375	0.500	0.122	0.087	0.256
YDEN0603PDSR-D	0.177	With	●	0.375	0.500	0.122	0.087	0.256
YDEN060304PDFR-D	0.177	Without	●	0.375	0.500	0.122	0.110	0.256
YDEN060308PDFR-D	0.177	Without	●	0.375	0.500	0.122	0.094	0.256
YDEN0603PDCR-LD	0.295	With*	●	0.375	0.500	0.122	0.087	0.375
YDEN0603PDFR-WD	-	Without	●	0.364	0.504	0.122	0.177	-
YDEN0603PDFR-BD	-	Without	●	0.364	0.508	0.122	0.157	-

* Edge preparation is applied only on the peripheral and chamfered sections. The remaining section of the cutting edge is left sharp.

● : Line up
Package quantity = 1 pc. per box

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Cast aluminum alloy / Die-cast (Si < 13%)	DX110	1640 - 13123	0.002 - 0.008
	Cast aluminum alloy / Die-cast (Si ≥ 13%)	DX110	656 - 2625	0.002 - 0.008
	Aluminum alloy (1000 - 7000 series)	DX110	1640 - 13123	0.002 - 0.008
	Copper alloy	DX110	656 - 1640	0.002 - 0.008

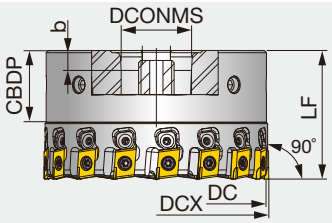
- The values in the above list are of standard recommendations and may require adjustments in consideration with cutting depths and/or workpiece/machine rigidity.
- Use wiper inserts (-WD) for better surface requirements and deburring inserts (-BD) to remove burrs.
- Always use wet cutting (emulsion coolant) for machining aluminum or copper alloys.
- To make the best of the cutter's deburring ability, make sure to place a deburring insert immediately behind every standard insert on the cutter.

TUNGSFEED MILL

TPYP12

High speed PCD mill for non ferrous metal





Metric	DC	DCX	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPYP12M050B22.0R08	50	51.4	8	55	22	20	10.4	6.3	0.9	With	YPEB12X3-*P...
TPYP12M063B22.0R10	63	64.4	10	55	22	20	10.4	6.3	1.3	With	YPEB12X3-*A...
TPYP12M080B27.0R12	80	81.4	12	58	27	22	12.4	7	2.2	With	YPEB12X3-*A...
TPYP12J080B25.4R12	80	81.4	12	58	25.4	26	9.5	6	2.2	With	YPEB12X3-*A...
TPYP12M100B32.0R16	100	101.4	16	58	32	25	14.4	8	1.9	With	YPEB12X3-*A...
TPYP12J100B31.7R16	100	101.4	16	58	31.75	32	12.7	8	1.9	With	YPEB12X3-*A...
TPYP12M125B40.0R20	125	126.4	20	58	40	28	16.4	9	2.9	With	YPEB12X3-*A...
TPYP12J125B38.1R20	125	126.4	20	58	38.1	38	15.9	10	2.9	With	YPEB12X3-*A...

DCX: Outside diameter
DC: Diameter with 01 type insert

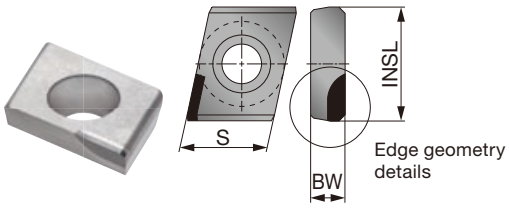
SPARE PARTS

Designation	Clamping screw	Wrench	Wedge fixing screw	Wedge	Wrench	Cover	Shell locking bolt
TPYP12M050B22.0R08	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	-	RSFTS-050M
TPYP12M063B22.0R10	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6063M	VC004762I10035F
TPYP12M080B27.0R12, TPYP12J080B25.4R12	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6080	VC00TEDI12040F
TPYP12M100B32.0R16, TPYP12J100B31.7R16	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6100	VC00TANG16040F
TPYP12M125B40.0R20, TPYP12J125B38.1R20	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6125	VC00TEDI20040F

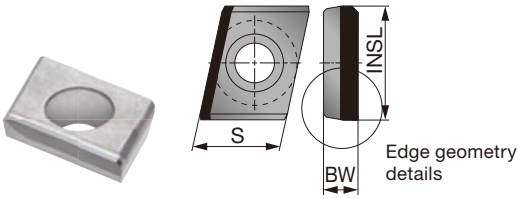
Recommended clamping torque: 4.5 N·m

INSERT

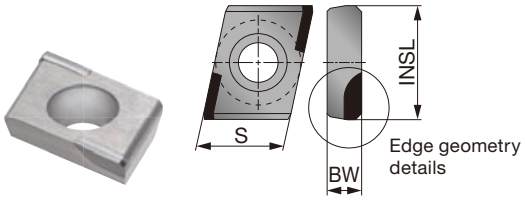
YPEB12X3-1A



YPEB12X-FP

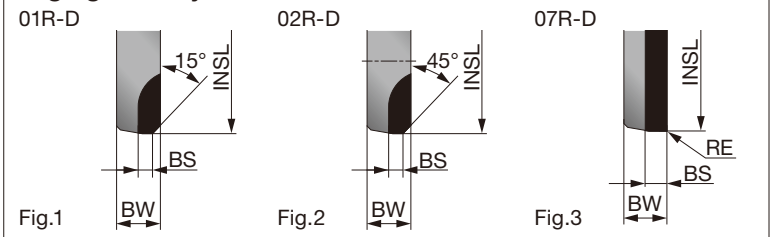


YPEB12X3-2A/P



Note: Insert with -1/2A are suitable for diameter over D50mm only.

Edge geometry details



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	No. of corner	RE	APMX	PCD DX160	INSL	S	BW	BS	Applicable cutter diameter	Fig.
YPEB12X3-1A01R-D	1	-	0.157	●	0.503	0.375	0.152	0.063	DC > ø50 mm	1
YPEB12X3-1A02R-D	1	-	0.157	●	0.502	0.375	0.152	0.051	DC > ø50 mm	2
YPEB12X3-1A07R-D	1	0.016	0.157	●	0.502	0.375	0.152	0.053	DC > ø50 mm	3
YPEB12X3-1P02R-D	1	-	0.157	●	0.505	0.375	0.152	0.054	DC ≤ ø50 mm	2
YPEB12X3-1P07R-D	1	0.016	0.157	●	0.505	0.375	0.152	0.054	DC ≤ ø50 mm	3
YPEB12X3-FP02R-D	1	-	0.433	●	0.505	0.375	0.152	0.054	DC ≤ ø50 mm	2
YPEB12X3-FP07R-D	1	0.016	0.433	●	0.505	0.375	0.152	0.054	DC ≤ ø50 mm	3
YPEB12X3-2A01R-D	2	-	0.157	●	0.504	0.375	0.152	0.063	DC > ø50 mm	1
YPEB12X3-2A02R-D	2	-	0.157	●	0.504	0.375	0.152	0.081	DC > ø50 mm	2
YPEB12X3-2A07R-D	2	0.016	0.157	●	0.504	0.375	0.152	0.081	DC > ø50 mm	3
YPEB12X3-2P07R-D	2	0.016	0.157	●	0.507	0.375	0.152	0.081	DC ≤ ø50 mm	3

● : Line up
2 pieces per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Aluminum cast Si < 13%	DX160	≤19685	0.002 - 0.010
	Aluminum cast Si ≥ 13%	DX160	≤ 4921	0.002 - 0.010
	Copper, brass, etc.	DX160	≤ 6562	0.002 - 0.010
	Non metalic material	DX160	≤ 9843	0.002 - 0.010

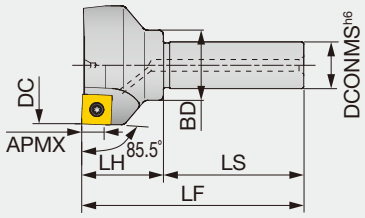
EFE / TFE

EFE12R

Face endmill for aluminum machining, shank type, with screw clamp system

GAMP = +13°, GAMF = +7°





Inch	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT (lb)	Air hole	Insert
EFE12200RU	0.315	2.000	3	0.750	1.180	2.362	1.375	3.406	0.77	With	SEG*12X4...

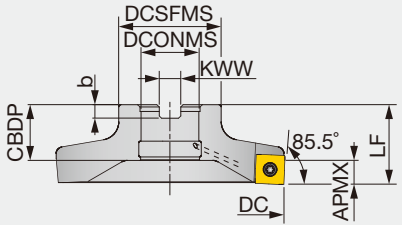
Metric	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT(kg)	Air hole	Insert
EFE12050R	8	50	3	20	30	60	35	95	0.37	With	SEG*12X4...

TFE12R

Face mill for aluminum machining, with screw clamp system, light weight

GAMP = +13°, GAMF = +7°





Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert
TFE12300RU	0.315	3.000	4	1.970	1.380	1.000	0.964	0.375	0.236	0.880	With	SEG*12X4...
TFE12400RU	0.315	4.000	6	1.970	1.380	1.000	0.964	0.375	0.236	1.340	With	SEG*12X4...

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12063R	8	63	3	45	35	22	19	10	6	0.34	With	SEG*12X4...
TFE12080R	8	80	4	50	35	25.4	24.5	9.5	6	0.45	With	SEG*12X4...
TFE12100R	8	100	6	50	35	25.4	24.5	9.5	6	0.59	With	SEG*12X4...
TFE12125R	8	125	6	50	35	25.4	24.5	9.5	6	0.9	With	SEG*12X4...

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

SPARE PARTS



Designation	Clamping screw	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Wrench
EFE12...	CSPB-4S	M-1000	-	-	IP-15D
TFE12300RU, TFE12400RU	CSPB-4S	M-1000	-	TMBA-0.500H	IP-15D
TFE12063R	CSPB-4S	M-1000	-	CM10X30H	IP-15D
TFE12080R - TFE12125R	CSPB-4S	M-1000	TMBA-M12H	-	IP-15D

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H112, Standard cutting conditions → H113

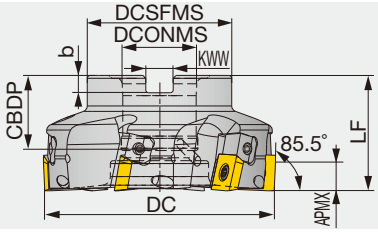
EFE / TFE

TFE12R...-...A

Face mill for aluminum machining, with screw clamp system

GAMP = +13°, GAMF = +7°





Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12R080M25.4-06A	8	80	6	50	40	25.4	26	9.5	6	0.70	With	SEG*12X4...
TFE12R080M27.0E06A	8	80	6	55	40	27	22	12.4	7	0.69	With	SEG*12X4...
TFE12R100M25.4-08A	8	100	8	50	40	25.4	26	9.5	6	1.15	With	SEG*12X4...
TFE12R100M27.0E08A	8	100	8	55	40	27	22	12.4	7	1.11	With	SEG*12X4...
TFE12R125M31.7-10A	8	125	10	70	50	31.7	32	12.7	8	2.24	With	SEG*12X4...
TFE12R125M32.0E10A	8	125	10	70	50	32	28.5	14.4	8	2.14	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Adjustable Wedge	Lubricant	Shell locking bolt	Right-left screw	Wrench 1	Wrench 2
TFE12R**A	CSTB-4	FW-701R	M-1000	TMBA-M12H	MCS520-2.5	P-2.5T	T-15LB

Recommended clamping torque: 3.5 N·m

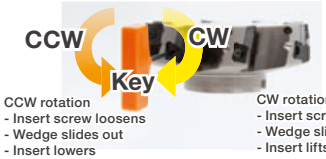
INSERT SETTING PROCEDURE – ADJUSTABLE-TYPE TFE FACE MILLING CUTTER

① Cleaning insert pockets



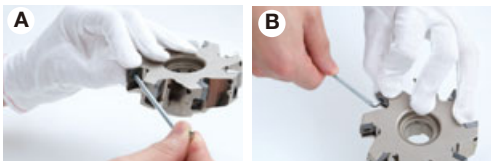
Remove all the inserts. Use air pressure to thoroughly clean the pockets of dust and chips.

② Loosening wedges



Use the included key for wedge adjustment to loosen all the wedges so that they do not exceed the cutter's outer diameter.

③ Clamping inserts for adjustments



Place the insert in the pocket and lightly tighten the clamping screw with the included key. Suggested method: Tighten the screw first with the straight end of the key (Fig A) until finger tight, then use the angled end to further tighten the screw for insert steadiness (Fig B). Do NOT fully tighten the screw at this moment as this procedure is prior to insert adjustment. Repeat the procedure for all inserts.

④ Axial height adjustment of inserts



Mount the cutter in Step ③ on the setting fixture of the pre-setter. Determine the highest insert, and, while carefully monitoring each insert's axial position, rotate the wedge screw in the CW direction to raise the insert in the axial direction, as close as possible to that of the highest insert. Repeat this procedure for all inserts.

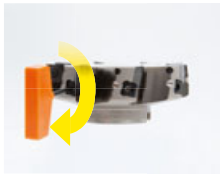
Note:
Since the insert is clamped, loosening the wedge screw will not bring down the insert. To lower insert height, both the insert and wedge screws need to be loosened. Start the adjusting procedure for this insert again from Step 1.

⑤ Tighten insert screws



Tighten the insert clamping screw at 3.5 Nm, using the key as shown to the left. Repeat the procedure for all inserts.

⑥ Final adjustments



After final tightening of all insert screws, measure to ensure all inserts are at the desired axial heights. If necessary, further tighten any wedge screws in the CW direction for the final few microns. For inserts exceeding the required runout, re-start the adjustment procedure from Step ① .

Note:
Do not re-tighten the insert screw after insert adjustment is completed. Additional tightening may weaken wedge clamping torque.

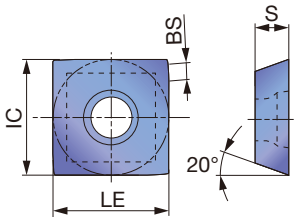
Cautions:

① Always clean all the insert pockets thoroughly of dust and chips. Any objects present in the pocket may shift the insert's position during machining and cause poor surface finishing quality.
② Always loosen the wedge screw before installing the insert as described in Step ② . If the wedge is left tightened in the cutter, the adjustment range of the wedge will be limited, and insert height may not be as freely adjustable as possible.
③ With a finger, firmly press and hold the insert into the wedge while tightening the insert screw. If the insert is not in contact, the wedge has to be driven until the gap in between is closed, with no actual insert movement.
④ Loosening the wedge will not lower the insert. When the insert height exceeds the desired setting during adjustment, loosen both the insert and wedge screws and re-start the adjustment procedure from Step ① . If the insert slides downward when the wedge screw is loosened, the clamping torque of the insert screw is too low. Tighten the insert screw with a slightly higher torque. Suggested clamping method: First use the straight end of the key to tighten the screw until finger tight, then switch the key to the angled side and turn an additional 45°.
⑤ Do not exceed the recommended clamping torque when fixing the insert. This may damage or fracture the insert screw.

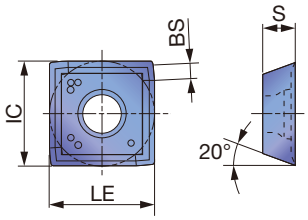
Reference pages: Inserts → H112, Standard cutting conditions → H113

INSERT

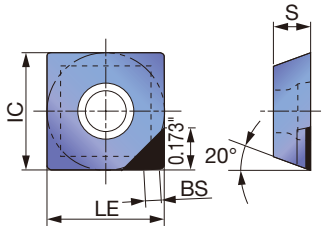
SEGW12X4ZEPR / ZEFR



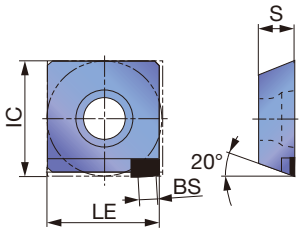
SEGT12X4-AJ



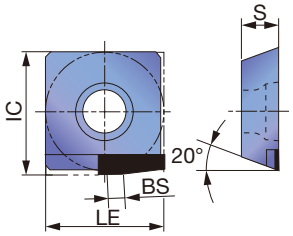
SEGW12X4ZEFR-D



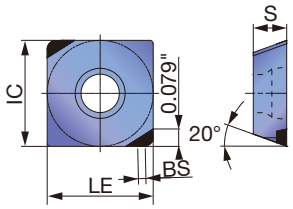
SEGW12X4ZEFR-WD



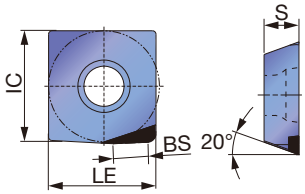
SEGW12X4ZEFR-BD



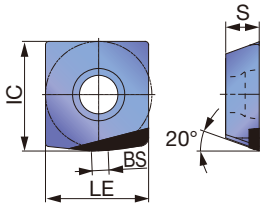
2QP-SECW12X412ZETR



1QP-SECW12X4ZETR-W



1QP-SECW12X4ZETR-B



Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

		Coated			Cermet	Uncoated	PCD	CBN
P	Steel	★			★			
M	Stainless		★					
K	Cast iron	★						★
N	Non-ferrous			★		★	★	
S	Superalloys							
H	Hard materials							

★ : First choice

Designation	APMX	AH120	AH140	DS1100	NS740	KS05F	DX140	BX480	IC	LE	S	BS
SEGW12X4ZEFR	0.315					●			0.500	0.500	0.157	0.071
SEGW12X4ZEPR	0.315	●	●		●				0.500	0.500	0.157	0.055
SEGT12X4ZEFR-AJ	0.315			●		●			0.500	0.500	0.157	0.071
SEGW12X4ZEFR-D	0.138						●		0.500	0.500	0.157	0.071
SEGW12X4ZEFR-WD	-						●		0.504	0.488	0.157	0.079
SEGW12X4ZEFR-BD	-						●		0.516	0.488	0.157	0.071
2QP-SECW12X412ZETR	0.059							●	0.500	0.500	0.157	0.035
1QP-SECW12X4ZETR-W	-							●	0.508	0.484	0.157	0.157
1QP-SECW12X4ZETR-B	-							●	0.516	0.484	0.157	0.079

● : Line up

DX140: 2 pieces per package

BX480: 1 piece per package

How to put each insert together

			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	SEGW12X4ZEFR-D DX140 2QP-SECW12X412ZETR BX480	◎	◎	◎
	Wiper insert	SEGW12X4ZEFR-WD DX140 1QP-SECW12X4ZETR-W BX480	–	◎	–
	Wiper insert for burr reduction	SEGW12X4ZEFR-BD DX140 1QP-SECW12X4ZETR-B BX480	–	–	◎
	Number of Inserts by type		All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
Accuracy of machining surface (roughness and undulation)			△	◎	○
Burr of machining surface			△	○	◎

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Designation	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels and alloy steels	< 300HB	AH120	SEGW12X4ZEPR	330 - 590	0.001 - 0.006
		< 300HB	NS740	SEGW12X4ZEPR	330 - 590	0.001 - 0.006
M	Stainless steels	< 250HB	AH140	SEGW12X4ZEPR	260 - 590	0.001 - 0.006
K	Gray and ductile cast irons	150 - 250 HB	AH120	SEGW12X4ZEPR	330 - 650	0.001 - 0.006
	Gray cast iron	150 - 250 HB	BX480	2QP-SECW12X412ZETR	2625 - 4921	0.002 - 0.012
	Ductile cast irons	150 - 250 HB	BX480	2QP-SECW12X412ZETR	1640 - 2625	0.002 - 0.008
N	Cast aluminum alloy / Die-cast Si < 13%	-	KS05F	SEGT12X4ZEFR-AJ	650 - 4900	0.001 - 0.008
		-	DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Cast aluminum alloy / Die-cast Si ≥ 13%	-	KS05F	SEGT12X4ZEFR-AJ	260 - 650	0.001 - 0.008
		-	DX140	SEGW12X4ZEFR-D	650 - 1650	0.001 - 0.008
	Aluminum alloy Tensile strength < 350 N/mm²	-	KS05F	SEGT12X4ZEFR-AJ	650 - 4900	0.001 - 0.008
		-	DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Aluminum alloy Tensile strength > 350 N/mm²	-	KS05F	SEGW12X4ZEFR	650 - 4900	0.001 - 0.008
		-	DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Copper alloy	-	KS05F	SEGT12X4ZEFR-AJ	650 - 1640	0.001 - 0.008
		-	DX140	SEGW12X4ZEFR-D	650 - 1640	0.001 - 0.008

Notes:
- In milling aluminum and copper alloys:
  (1) For improved surface finish, use together with wiper insert SEGW12X4ZEFR-WD
  (2) For reducing burr occurrence, use together with deburring inserts SEGW12X4ZEFR-BD
- When milling aluminum and copper alloys, use of a water soluble cutting fluid is recommended. When milling steels, cast irons, and stainless steels, dry cutting is recommended.
- When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

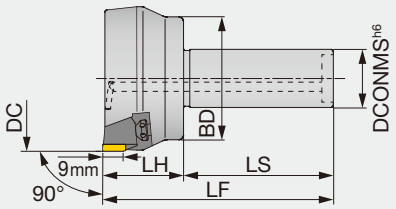
EDPD / DPD

EDPD09

Endmill for aluminum machining, shank type, for PCD inserts

GAMP = +8.5°, GAMP = +3°





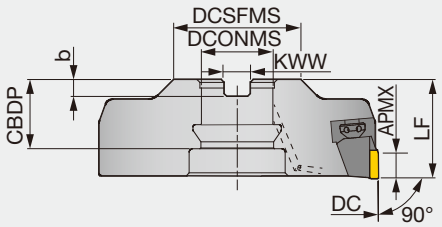
Metric	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT(kg)	Air hole	Insert
EDPD09063R	7	63	3	25	37	60	40	100	0.75	With	YDEN0905...

DPD09

Face mill for aluminum machining, for PCD inserts

GAMP = +8.5°, GAMP = +3° ~ +5°





Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
DPD09080R	7	80	4	50	41	25.4	23	9.5	6	0.8	With	YDEN0905...
DPD09080RB	7	80	6	50	41	25.4	28.5	9.5	6	0.82	With	YDEN0905...
DPD09100R	7	100	6	50	35	25.4	24.5	9.5	6	1.13	With	YDEN0905...
DPD09100RB	7	100	8	50	35	25.4	24.5	9.5	6	1.17	With	YDEN0905...
DPD09125R	7	125	6	50	35	25.4	24.5	9.5	6	1.7	With	YDEN0905...
DPD09125RB	7	125	10	50	35	25.4	24.5	9.5	6	1.77	With	YDEN0905...
DPD09160R	7	160	8	60	52	31.75	40	12.7	8	3.28	With	YDEN0905...
DPD09160RB	7	160	12	60	52	31.75	40	12.7	8	3.25	With	YDEN0905...

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

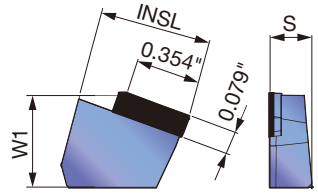
SPARE PARTS

Designation	Wedge	Wedge fixing screw	Adjusting screw	Helisert	Shell locking bolt 1	Shell locking bolt 2	Wrench1	Wrench 2
EDPD09063R	FW-304R-T	FDS-8SST	AJM5	LM5-0.8X1DNS	-	-	T-27T	T-7F
DPD09080R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	-	CM12X30H	T-27T	T-7F
DPD09100R*, DPD09125R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M12H	-	T-27T	T-7F
DPD09160R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M16H	-	T-27T	T-7F

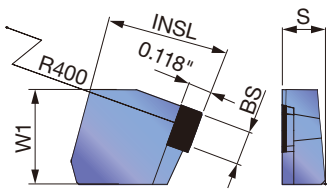
Recommended clamping torque: 10 N·m

INSERT

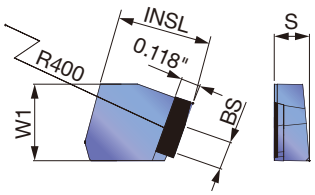
YDEN0905PDFR-D



YDEN0905PDFR-WD



YDEN0905PDFR-BD



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	APMX	PCD DX140	W1	INSL	S	BS
YDEN0905PDFR-D	0.276	●	0.488	0.594	0.224	-
YDEN0905PDFR-WD	-	●	0.488	0.598	0.224	0.177
YDEN0905PDFR-BD	-	●	0.488	0.598	0.224	0.177

Tungaloy provides refurbishing service for these inserts upon request.

●: Line up

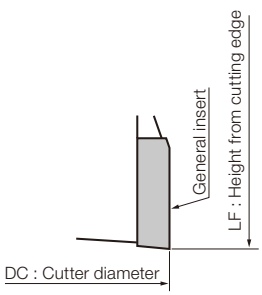
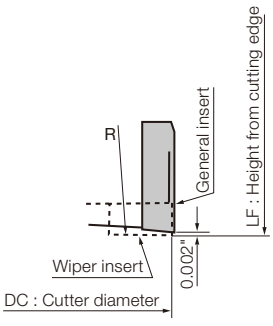
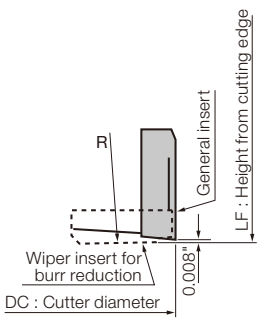
1 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Aluminum alloy castings & die castings Si < 13%	DX140	YDEN0905PDFR-D	500 ~ 4000	0.001 ~ 0.008
	Aluminum alloy castings & die castings Si ≥ 13%	DX140	YDEN0905PDFR-D	650 ~ 1650	0.001 ~ 0.008
	Rolled aluminum alloys	DX140	YDEN0905PDFR-D	1650 ~ 13000	0.001 ~ 0.008
	Copper alloys	DX140	YDEN0905PDFR-D	300 ~ 1650	0.001 ~ 0.008

Notes:
(1) When requiring improved surface finish, use the wiper insert together with regular inserts YDEN0905PDFR-WD.
(2) When requiring reduced burr occurrence, use the deburring inserts together with regular inserts YDEN0905PDFR-BD.
(3) When using the cutter at speeds over 1500m/min, use an arbor or tool-holder balanced to within G16.
(4) Wet cutting, using a water soluble cutting fluid, is recommended.
(5) When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

How to put each insert together

			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	YDEN0905PDFR-D	◎	◎	◎
	Wiper insert	YDEN0905PDFR-WD	–	◎	–
	Wiper insert for burr reduction	YDEN0905PDFR-BD	–	–	◎
	Number of Inserts by type		All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
	Specification of insert setting				
	Accuracy of machining surface (roughness and undulation)		△	◎	○
	Burr of machining surface		△	○	◎

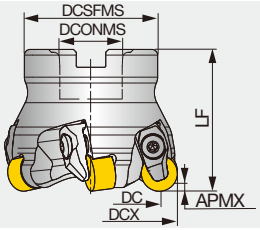
CERAMIC SPEED MILL

TFMRN

Face milling cutter for high temperature alloy applications

GAMP = -7°, GAMF = +15°





Inch	APMX	DC	DCX	CICT	DCONMS	LF	DCSFMS	WT(lb)	Insert
TFMRND2.00-12-4Z-FL	0.080	1.528	2.000	4	0.750	2.000	1.770	0.88	RNGN120700...
TFMRND2.50-12-5Z-FL	0.080	2.000	2.500	5	1.570	1.969	0.750	0.99	RNGN120700...
TFMRND3.00-12-5Z-FL	0.080	2.500	3.000	5	1.750	1.969	1.000	2.07	RNGN120700...

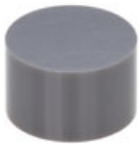
Metric	APMX	DC	DCX	CICT	DCONMS	LF	DCSFMS	WT(kg)	Insert
TFMRN563-22R-12FL	2	50.35	63	5	22	50	47	0.6	RNGN120700...
TFMRN580-27R-12FL	2	67.37	80	5	27	50	58	0.9	RNGN120700...

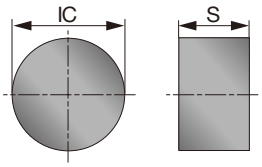
SPARE PARTS

Designation	Clamp	Screw	Snap ring
TFMRND..., TFMRN...	CCL-5S-F	CLS3C	CSR2

INSERT

RNGN-E/T1





Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

		Ceramic	
		TS200	TS300
P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	★
H	Hard materials		

★ : First choice

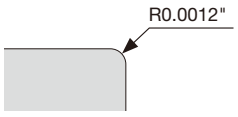
Designation	APMX	Edge prep.*	Ceramic TS200	Ceramic TS300	IC	S
RNGN120700-E	0.080	E	●		0.500	0.3125
RNGN120700-T1	0.080	T1	●		0.500	0.3125
RNGN120700-E	0.080	E		●	0.500	0.3125
RNGN120700-T1	0.080	T1		●	0.500	0.3125

* Types of cutting edge preparations

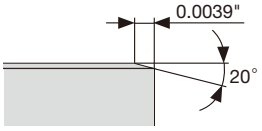
●: Line up

Edge prep

E: Low cutting force



T1: Strong cutting edge



STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)
S	Ni-based super alloys	Wear resistance	TS200	1804 - 4265	0.002 - 0.008	0.004 - 0.079
		First choice	TS300	886 - 1804	0.002 - 0.008	0.004 - 0.079
	Co-based super alloys	Wear resistance	TS200	1804 - 4921	0.002 - 0.008	0.004 - 0.079
		First choice	TS300	886 - 1804	0.002 - 0.008	0.004 - 0.079

EME4400

Face endmill, shank type, with wedge clamp system

GAMP = +24°, GAMF = -13° ~ -8°



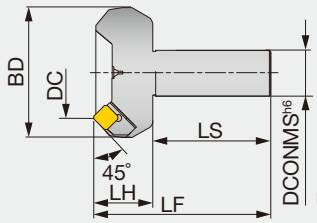


Fig.1

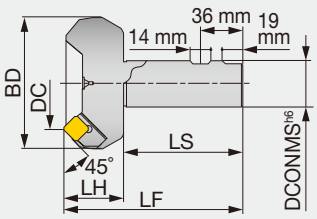


Fig.2

Right hand (R) shown.

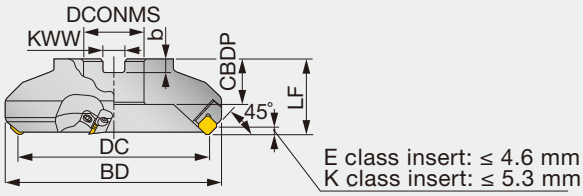
Metric	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	Fig.	Insert
EME4450R	4	50	3	73.4	32	80	40	120	1	SE*N1203...
EME4463R	4	63	4	87.2	32	80	40	120	1	SE*N1203...
EME4403RI	4	80	5	101.5	32	80	40	120	2	SE*N1203...
EME4404RI	4	100	5	120.2	32	80	40	120	2	SE*N1203...

TME4400R/LI/B

Face mill, with wedge clamp system

GAMP = +24°, GAMF = -8° ~ -6°





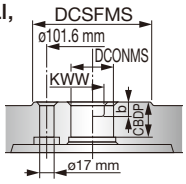
Right hand (R) shown.

Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TME4463RB-E	4	63	5	87.2	40	22	20	10.4	6.3	1.0	SE*N1203
TME4403R/LI	4	80	4	101.5	50	25.4	26	9.5	6	1.43	SE*N1203
TME4403RI-E	4	80	4	101.5	50	27	26	12.4	7	1.43	SE*N1203
TME4403RB	4	80	6	101.5	50	25.4	26	9.5	6	1.43	SE*N1203
TME4403RB-E	4	80	6	101.5	50	27	26	12.4	7	1.43	SE*N1203
TME4404R/LI	4	100	5	120.2	63	31.75	32	12.7	8	2.74	SE*N1203
TME4404RI-E	4	100	5	120.2	63	32	32	14.4	8	2.74	SE*N1203
TME4404RB	4	100	7	120.2	63	31.75	32	12.7	8	2.77	SE*N1203
TME4404RB-E	4	100	7	120.2	50	32	28.5	14.4	8	2.77	SE*N1203
TME4405R/LI	4	125	6	145.2	63	38.1	38	15.9	10	4.04	SE*N1203
TME4405RI-E	4	125	6	145.2	63	40	32	16.4	9	4.04	SE*N1203
TME4405RB	4	125	9	145.2	63	38.1	38	15.9	10	4.06	SE*N1203
TME4405RB-E	4	125	9	145.2	63	40	32	16.4	9	4.06	SE*N1203
TME4406R/LI	4	160	8	181.2	63	50.8	38	19	11	5.82	SE*N1203
TME4406RI-E	4	160	8	181.2	63	40	29	16.4	9	5.82	SE*N1203
TME4406RB	4	160	12	181.2	63	50.8	38	19	11	5.86	SE*N1203
TME4406RB-E	4	160	12	181.2	63	40	29	16.4	9	5.86	SE*N1203
TME4408R/LI	4	200	10	220.5	63	47.625	38	25.4	14	9.18	SE*N1203
TME4408RB	4	200	15	220.5	63	47.625	38	25.4	14	9.24	SE*N1203
TME4410R/LI	4	250	12	269.8	63	47.625	38	25.4	14	16.64	SE*N1203
TME4412RI	4	315	14	334.4	63	47.625	38	25.4	14	25.72	SE*N1203

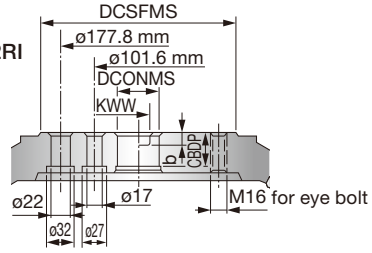
Cutting edge height (LF) is for when SEEN1203AG*N type inserts are used.

Arbor type

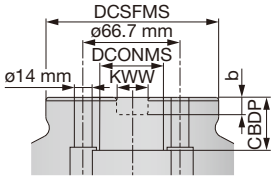
TME4408/10R/LI, TME4408RB



TME4412RI



TME4406RI-E, TME4406RB-E



SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TME4463RB-E	LE444R	DS-8	CM4X0.7X14	WT402R	TP-4
EME4400..., TME4403R... - TME4405R... TME4403RB - TME4405RB	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4403L... - TME4405L...	LE444L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4406R... - TME4412R... TME4406RB, TME4408RB, TME4403 - 06RB-E	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4406L... - TME4412L...	LE446L	FDS-8S	CM4X0.7X14	WF444L	TP-4

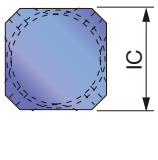
Recommended clamping torque: 8 N·m

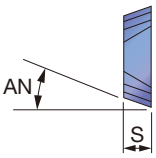
Reference pages: Inserts → H118

INSERT

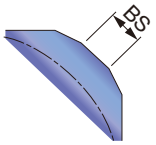
SECN/SEEN/SEKN /SEKR 1203

SE*N1203AG*N (-T)

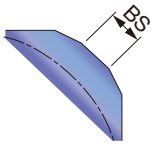




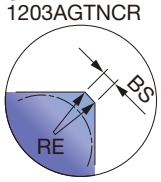
SEE/CN 1203AG*N



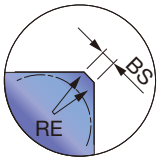
SEE/CN 1203AG*N



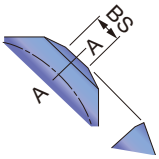
SEEN 1203AGTNCR



SEEN 1203AGTNCR-14

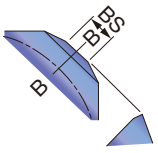


SEKN 1203AG*N-T



A-A cross section

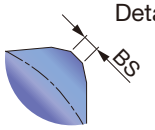
SEEN 1203AG*N-T



B-B cross section

SEKR1203AGSR-MJ
SEKR1203AGPN-MS

Details of edge



P	Steel	☆	☆	☆	★	☆		★		★		☆	
M	Stainless		★	☆		☆							
K	Cast iron	★					★						
N	Non-ferrous										★		
S	Superalloys	☆	☆										
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	APMX	Coated							Cermet	Uncoated		IC	S	AN	BS
		AH120	AH130	AH140	AH330	GH330	T1115	T3130	NS740	UX30	TH10				
SECN1203AGFN	0.157										●	0.500	0.125	20°	0.094
SEEN1203AGFN	0.157										●	0.500	0.125	20°	0.094
SEEN1203AGTN	0.157	●	●	●		●	●		●	●		0.500	0.125	20°	0.094
SEEN1203AGTN-T	0.157							●	●	●		0.500	0.125	20°	0.094
SEEN1203AGTNCR	0.157	●	●	●	●			●				0.500	0.125	20°	0.063
SEEN1203AGTNCR-14	0.157								●			0.500	0.125	20°	0.055
SEKN1203AGFN-T	0.157										●	0.500	0.125	20°	0.063
SEKN1203AGTN	0.157	●	●	●	●	●		●	●	●		0.500	0.125	20°	0.063
SEKN1203AGTN-T	0.157					●	●	●	●	●		0.500	0.125	20°	0.063
SEKN1203AGTNCR	0.157								●			0.500	0.125	20°	0.063
SEKR1203AGSR-MJ	0.157	●			●	●		●				0.500	0.125	20°	0.063
SEKR1203AGPN-MS	0.157		●	●								0.500	0.125	20°	0.063

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog **EME4400**

e-catalog **TME4400R/LI**

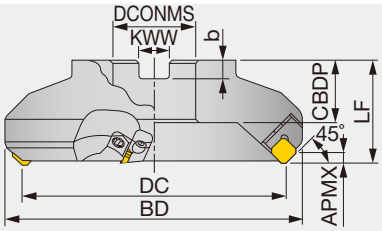
e-catalog **TME4400R/LB**

TME5400RI

45° face mill, with wedge clamp system

GAMP = +24°, GAMF = -8° ~ -6°





Right hand (R) shown.

Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TME5404RI	6	100	5	123.6	63	31.75	32	12.7	8	2.82	SE**1504...
TME5405RI	6	125	6	148.6	63	38.1	38	15.9	10	4.08	SE**1504...
TME5406RI	6	160	8	183	63	50.8	38	19	11	5.99	SE**1504...
TME5408RI	6	200	10	223	63	47.625	38	25.4	14	9.23	SE**1504...
TME5410RI	6	250	12	273	63	47.625	38	25.4	14	16.94	SE**1504...
TME5412RI	6	315	14	338	63	47.625	38	25.4	14	25.94	SE**1504...

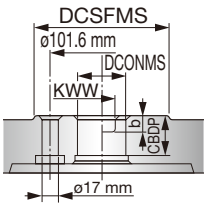
SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TME5400RI	LE540R	FDS-8S	CM4X0.7X14	WF540R	TP-4

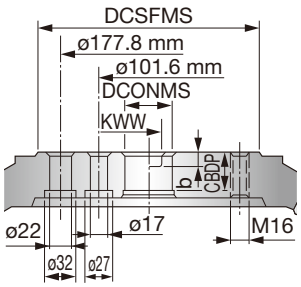
Recommended clamping torque: 8 N·m

Arbor type

TME5408/10RI



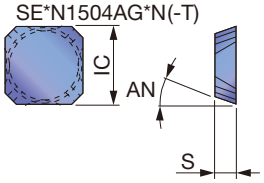
TME5412RI



INSERT

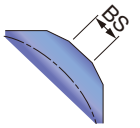
SECN/SEEN/SEKN 1504

SE*N1504AG*N(-T)

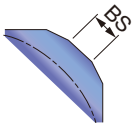


Details of edge

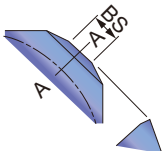
SEKN1504AG*N



SEEN1504AGTN



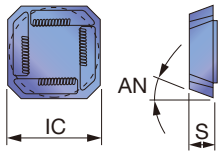
SEKN1504AGTN-T



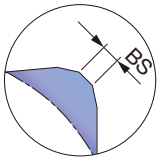
A-A cross section

SEKR1504-MJ

SEKR1504AGSR-MJ
with 3-dimensional chipbreaker



Details of edge



		Coated				Cermet	Uncoated		
P	Steel	☆		★	★	★		☆	
M	Stainless		★						
K	Cast iron	★							
N	Non-ferrous						★		
S	Superalloys	★							
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	APMX	AH120	AH140	GH330	T3130	NS740	TH10	UX30	IC	S	AN	BS
SEEN1504AGTN	0.236					●		●	0.625	0.187	20°	0.094
SEKN1504AGFN	0.236						●		0.625	0.187	20°	0.063
SEKN1504AGTN	0.236	●	●	●	●	●		●	0.625	0.187	20°	0.063
SEKN1504AGTN-T	0.236				●	●			0.625	0.187	20°	0.063
SEKR1504AGSR-MJ	0.236			●	●				0.625	0.187	20°	0.063

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

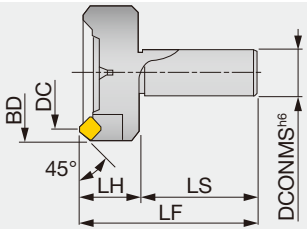
e-catalog

EMD4400RI

Endmill, shank type, with wedge clamp system

GAMP = +15˚, GAMF = -3˚





Right hand (R) shown.

Metric	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	WT(kg)	Insert
EMD4403RI-S32	4	80	4	95	32	80	40	120	2	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
EMD4403RI-S32	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4

Recommended clamping torque: 8 N·m

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

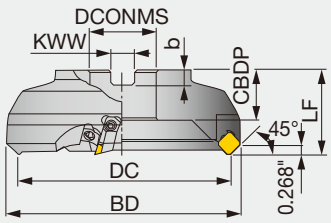
Reference pages: Inserts → H122

TMD4400R/LI

Face mill, with wedge clamp system

GAMP = +15°, GAMF = -3°





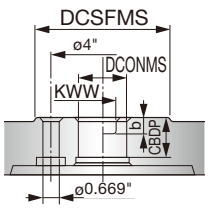
Right hand (R) shown.

Inch	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT (lb)	Insert
TMD4403RI-U	0.157	3.150	4	3.780	1.970	1.000	1.020	0.375	0.236	3.100	SD*N42.../SD*R1203...
TMD4404RI-U	0.157	3.940	5	4.530	2.480	1.500	1.260	0.500	0.315	5.500	SD*N42.../SD*R1203...
TMD4405RI-U	0.157	4.920	6	5.470	2.480	1.500	1.500	0.625	0.394	7.900	SD*N42.../SD*R1203...
TMD4406RI-U	0.157	6.300	8	6.510	2.480	2.000	1.500	0.750	0.433	12.300	SD*N42.../SD*R1203...
TMD4408RI-U	0.157	7.870	10	8.390	2.480	2.500	1.500	1.000	0.551	19.100	SD*N42.../SD*R1203...
TMD4410RI-U	0.157	9.840	12	10.350	2.480	2.500	1.500	1.000	0.551	35.900	SD*N42.../SD*R1203...
TMD4412RI-U	0.157	12.400	14	12.870	2.480	2.500	1.500	1.000	0.551	55.400	SD*N42.../SD*R1203...

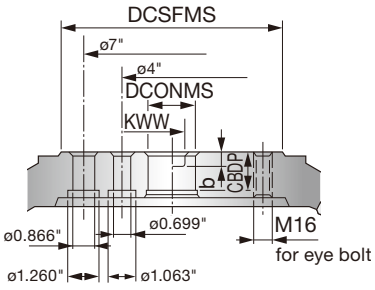
Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TMD4403R/LI	4	80	4	96	50	25.4	26	9.5	6	1.4	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4404R/LI	4	100	5	115	63	31.75	32	12.7	8	2.5	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4405R/LI	4	125	6	139	63	38.1	38	15.9	10	3.60	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4406R/LI	4	160	8	173	63	50.8	38	19	11	5.6	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4408R/LI	4	200	10	213	63	47.625	38	25.4	14	8.7	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4410R/LI	4	250	12	263	63	47.625	38	25.4	14	16.3	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4412RI	4	315	14	327	63	47.625	38	25.4	14	25.2	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

Arbor type

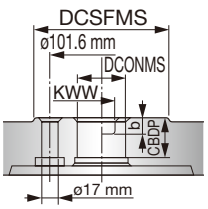
TMD4408/10RI-U



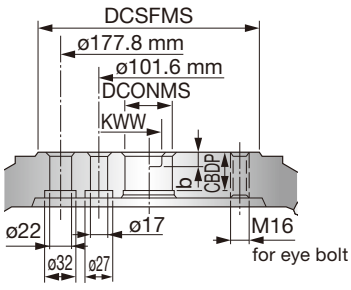
TMD4412RI-U



TMD4408/10R/LI



TMD4412RI



SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench	Shell locking bolt (Optional parts)
TMD4403RI-U	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	(TMBA-0.500H)
TMD4404RI-U, TMD4405RI-U	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	(TMBA-0.750H)
TMD4406RI-U - TMD4412RI-U TMD4403RI - TMD4412RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	-
TMD4403LI - TMD4410LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4	-

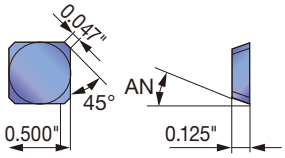
Recommended clamping torque: 5.9 lbs·ft, 8 N·m

Reference pages: Inserts → H122

INSERT

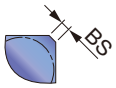
SDCN/SDEN/SDKN 42Z

Regular edge
SD*N42Z*N

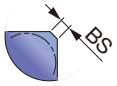


Details of edge

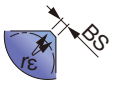
SDKN42ZTN16



SD*N42ZTN20

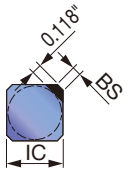


SDKN42ZTNCR
SDEN42ZTNCR



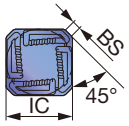
SDCN42ZFN-DIA

SDCN42ZFN-DIA

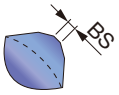


SDKR42Z-MJ

SDKR42ZSR-MJ
with 3-dimensional chipbreaker

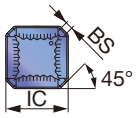


Details of edge



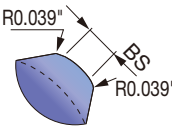
SDMR/SDKR 1203-MJ

SD*R1203AETN-MJ
with 3-dimensional chipbreaker

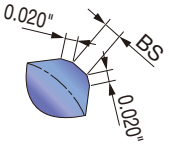


Details of edge

SDMR1203AETN-MJ

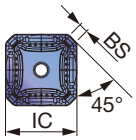


SDKR1203AETN-MJ

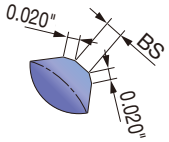


SDKR42Z-MS

SDKR42ZPN-MS

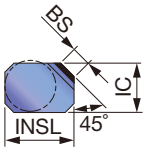


Details of edge



WDCN42ZFR-DIA

Wiper edge
WDCN42ZFR-DIA



P	Steel	★	★			☆	☆			☆	☆	★	☆		☆			
M	Stainless	★		★	☆						☆							
K	Cast iron		★					☆	★									
N	Non-ferrous															★		★
S	Superalloys		★	☆														
H	Hard materials																	

★ : First choice
☆ : Second choice

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Designation	APMX	Coated										Cermet		Uncoated		PCD	IC	INSL	S	AN	BS
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140					
SDCN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDCN42ZTN	0.157											●	●	●			0.500	-	0.125	15°	0.047
SDCN42ZTN20	0.157											●					0.500	-	0.125	15°	0.079
SDEN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDEN42ZTN	0.157	●	●		●		●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDEN42ZTNCR	0.157	●	●		●	●						●					0.500	-	0.125	15°	0.063
SDEN42ZTN20	0.157									●	●						0.500	-	0.125	15°	0.079
SDKN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDKN42ZTN	0.157	●	●	●	●	●	●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDKN42ZTNCR	0.157											●					0.500	-	0.125	15°	0.063
SDKN42ZTN16	0.157									●	●						0.500	-	0.125	15°	0.063
SDCN42ZFN-DIA	0.079															●	0.500	-	0.125	15°	0.047
SDKR42ZSR-MJ	0.157	●	●			●	●			●	●						0.500	-	0.125	15°	0.063
SDMR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR42ZPN-MS	0.157	●		●	●												0.500	-	0.125	15°	0.063
WDCN42ZFR-DIA	0.020															●	0.480	0.616	0.125	15°	0.193

●: Line up

DX140: 1 piece per package

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
EMD4400RI

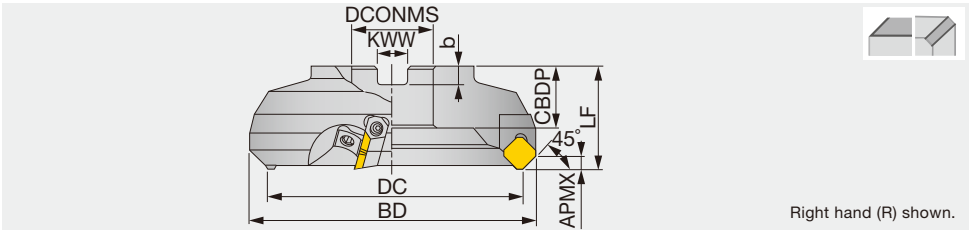
e-catalog
TMD4400R/LI

TMD5400RI

Face mill, with wedge clamp system

GAMP = +15˚, GAMF = -3˚





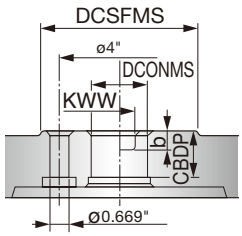
Right hand (R) shown.

Inch	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(lb)	Insert
TMD5404RI-U	0.236	3.940	4	4.650	2.480	1.500	1.260	0.625	0.394	5.510	SD*N53Z...
TMD5405RI-U	0.236	4.920	5	5.590	2.480	1.500	1.500	0.625	0.394	8.160	SD*N53Z...
TMD5406RI-U	0.236	6.300	5	6.930	2.480	2.000	1.500	0.750	0.433	12.790	SD*N53Z...
TMD5408RI-U	0.236	7.870	8	8.500	2.480	2.500	1.500	1.000	0.551	19.840	SD*N53Z...
TMD5410RI-U	0.236	9.840	10	10.430	2.480	2.500	1.500	1.000	0.551	35.930	SD*N53Z...
TMD5412RI-U	0.236	12.400	12	12.990	2.480	2.500	1.500	1.000	0.551	55.560	SD*N53Z...

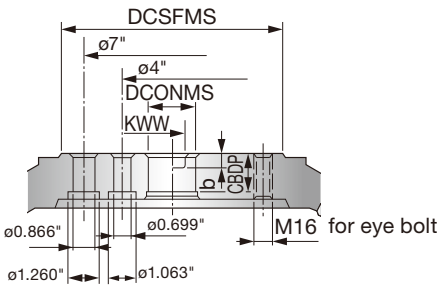
Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TMD5404RI	6	100	4	118	63	31.75	32	12.7	8	2.5	SD*N53Z...
TMD5404RI-E	6	100	4	118	50	32	28.5	14.4	8	2.5	SD*N53Z...
TMD5405RI	6	125	6	142	63	38.1	38	15.9	10	2.5	SD*N53Z...
TMD5405RI-E	6	125	6	142	63	40	32	16.4	9	3.7	SD*N53Z...
TMD5406RI	6	160	6	176	63	50.8	38	19	11	5.8	SD*N53Z...
TMD5406RI-E	6	160	6	176	63	40	29	16.4	9	5.8	SD*N53Z...
TMD5408RI	6	200	8	216	63	47.625	38	25.4	14	9	SD*N53Z...
TMD5408RI-E	6	200	8	216	63	60	38	25.7	14	9	SD*N53Z...
TMD5410RI	6	250	10	265	63	47.625	38	25.4	14	16.3	SD*N53Z...
TMD5410RI-E	6	250	10	265	63	60	38	25.7	14	16.3	SD*N53Z...
TMD5412RI	6	315	12	330	63	47.625	38	25.4	14	25.2	SD*N53Z...
TMD5412RI-E	6	315	12	330	63	60	38	25.7	14	25.2	SD*N53Z...

Arbor type

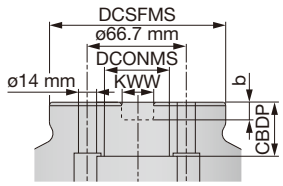
TMD5408RI-U..., TMD5410RI-U...



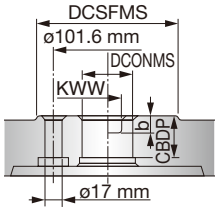
TMD5412RI-U



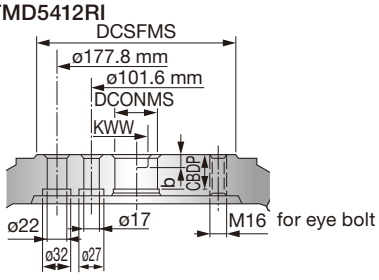
TMD5406RI-E



TMD5408/10...



TMD5412RI



SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench	Shell locking bolt (Optional parts)
TMD5404RI-U, TMD5405RI-U	LD540R	FDS-8S	CM4X0.7X20	WF500R	TP-4	(TMBA-0.750H)
TMD5406RI-U - TMD5412RI-U TMD54**RI (-E)	LD540R	FDS-8S	CM4X0.7X20	WF500R	TP-4	-

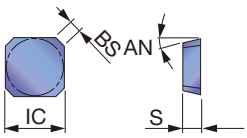
Recommended clamping torque: 5.9 lbs·ft, 8 N·m

Reference pages: Inserts → H124

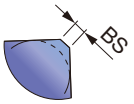
INSERT

SDCN/SDEN 53Z

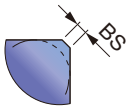
SD*N53Z*N



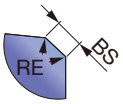
SDEN53ZTN20
Details of edge



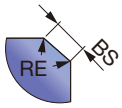
SDKN53ZTN16
Details of edge



SDEN53ZTNCR
Details of edge

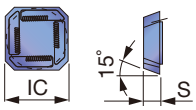


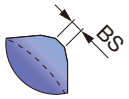
SDKN53ZTNCR
Details of edge



SDKR53-MJ

SDKR53ZSR-MJ
with 3-dimensional chipbreaker





P	Steel	☆				★		★	☆		☆		
M	Stainless		★	☆	☆								
K	Cast iron	★											
N	Non-ferrous											★	
S	Superalloys												
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	APMX	Coated					Cermet			Uncoated		IC	S	AN	BS
		AH120	AH130	AH140	GH330	T3130	NS740	N308		UX30	TH10				
SDCN53ZTN	0.236						●	●				0.625	0.187	15°	0.047
SDEN53ZFN	0.236										●	0.625	0.187	15°	0.047
SDEN53ZTN	0.236				●		●			●		0.625	0.187	15°	0.047
SDEN53ZTNCR	0.236						●					0.625	0.187	15°	0.055
SDEN53ZTN20	0.236					●						0.625	0.187	15°	0.079
SDKN53ZFN	0.236										●	0.625	0.187	15°	0.047
SDKN53ZTN	0.236	●	●	●	●		●	●		●		0.625	0.187	15°	0.047
SDKN53ZTNCR	0.236						●					0.625	0.187	15°	0.063
SDKN53ZTN16	0.236					●						0.625	0.187	15°	0.063
SDKR53ZSR-MJ	0.236				●	●						0.625	0.187	15°	0.079

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

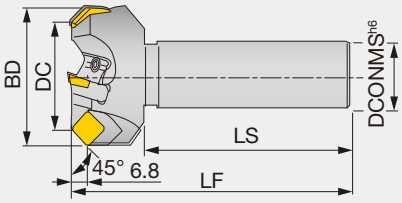
e-catalog

EGD4400

45° face endmill, shank type, with wedge clamp system

GAMP = +15°, GAMF = -3°





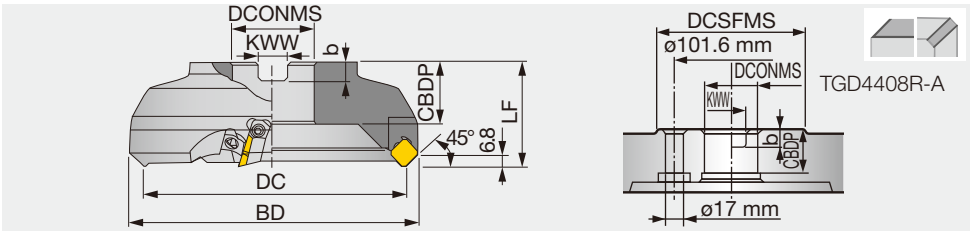
Metric	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	WT(kg)	Insert
EGD4450R	4	50	4	67	32	80	35	115	1.1	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
EGD4463R	4	63	4	79	32	80	35	115	1.4	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

TGD4400-A

45° face mill, with wedge clamp system

GAMP = +15°, GAMF = -3°





Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGD4403R-A	4	80	6	96	50	25.4	26	9.5	6	1.4	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TGD4404R-A	4	100	6	115	63	31.75	32	12.7	8	2.5	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TGD4405R-A	4	125	8	139	63	38.1	38	15.9	10	3.6	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TGD4406R-A	4	160	8	173	63	50.8	38	19	11	5.6	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TGD4408R-A	4	200	10	213	63	47.625	38	25.4	14	8.7	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
EGD4400	LD442R	DS-8	BM3X0.5X6	WP193TR	TP-4
TGD4400-A	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4

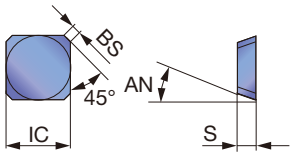
Recommended clamping torque: 8 N·m

Reference pages: Inserts → H126

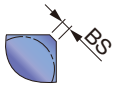
INSERT

SDCN/SDEN/SDKN 42Z

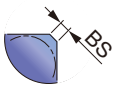
Regular edge
SD*N42Z*N



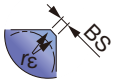
Details of edge
SDKN42ZTN16



SD*N42ZTN20

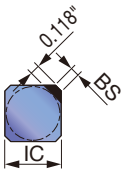


SDKN42ZTNCR
SDEN42ZTNCR



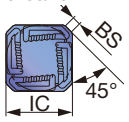
SDCN42ZFN-DIA

SDCN42ZFN-DIA

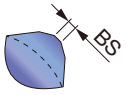


SDKR42Z-MJ

SDKR42ZSR-MJ
with 3-dimensional chipbreaker

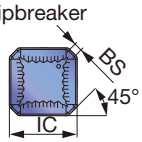


Details of edge

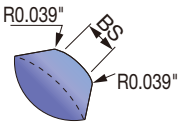


SDMR/SDKR 1203-MJ

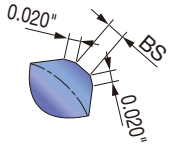
SD*R1203AETN-MJ
with 3-dimensional chipbreaker



Details of edge
SDMR1203AETN-MJ

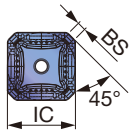


SDKR1203AETN-MJ

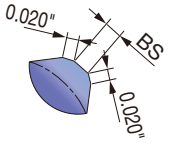


SDKR42Z-MS

SDKR42ZPN-MS

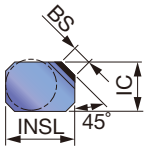


Details of edge



WDCN42ZFR-DIA

Wiper edge
WDCN42ZFR-DIA



		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140
P	Steel	★	★			☆	☆			☆	☆	★	☆		☆	
M	Stainless	★		★	☆						☆					
K	Cast iron		★					☆	★							
N	Non-ferrous														★	★
S	Superalloys		★	☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Designation	APMX	Coated										Cermet		Uncoated		PCD	IC	INSL	S	AN	BS
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140					
SDCN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDCN42ZTN	0.157											●	●	●			0.500	-	0.125	15°	0.047
SDCN42ZTN20	0.157											●					0.500	-	0.125	15°	0.079
SDEN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDEN42ZTN	0.157	●	●		●		●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDEN42ZTNCR	0.157	●	●		●	●						●					0.500	-	0.125	15°	0.063
SDEN42ZTN20	0.157									●	●						0.500	-	0.125	15°	0.079
SDKN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDKN42ZTN	0.157	●	●	●	●	●	●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDKN42ZTNCR	0.157											●					0.500	-	0.125	15°	0.063
SDKN42ZTN16	0.157									●	●						0.500	-	0.125	15°	0.063
SDCN42ZFN-DIA	0.079															●	0.500	-	0.125	15°	0.047
SDKR42ZSR-MJ	0.157	●	●			●	●			●	●						0.500	-	0.125	15°	0.063
SDMR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR42ZPN-MS	0.157	●		●	●												0.500	-	0.125	15°	0.063
WDCN42ZFR-DIA	0.020															●	0.480	0.616	0.125	15°	0.193

●: Line up

DX140: Packing Quantity = 1 pc.

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
EGD4400

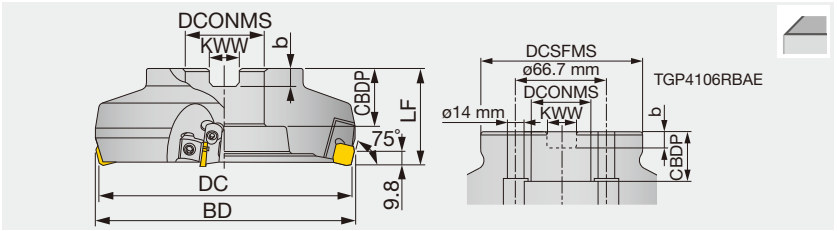
e-catalog
TGD4400-A

TGP4100RIA/BAA/RBAE

75° face mill, with wedge clamp system

GAMP = +7°, GAMF = +1°





Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP4103RIA	7	80	5	89	50	25.4	26	9.5	6	1.3	SP*N42..., WPAN42...
TGP4104RIA	7	100	6	108	63	31.75	32	12.7	8	2.4	SP*N42..., WPAN42...
TGP4104RBA	7	100	8	108	63	31.75	32	12.7	8	2.4	SP*N42..., WPAN42...
TGP4104RBAE	7	100	8	108	63	32	25	14.4	8	2.4	SP*N42..., WPAN42...
TGP4105RIA	7	125	8	132	63	38.1	38	15.9	10	3.6	SP*N42..., WPAN42...
TGP4105RBA	7	125	10	132	63	38.1	38	15.9	10	3.6	SP*N42..., WPAN42...
TGP4105RBAE	7	125	10	132	63	40	32	16.4	9	3.6	SP*N42..., WPAN42...
TGP4106RIA	7	160	8	167	63	50.8	38	19	11	5.9	SP*N42..., WPAN42...
TGP4106RBA	7	160	12	167	63	50.8	38	19	11	5.8	SP*N42..., WPAN42...
TGP4106RBAE	7	160	12	167	63	40	29	16.4	9	5.8	SP*N42..., WPAN42...

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TGP4103RIA	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4
TGP4104, 05, 06RIA	LP413R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TGP4104, 05, 06RBA	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4
TGP4104, 05, 06RBAE	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4

Recommended clamping torque: 8 N·m

INSERT

SPCN/SPEN/SPKN 42S

SP*N42S*R/L

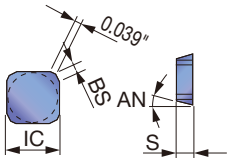


Fig.1

SPEN423*N
Details of edge

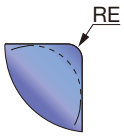


Fig.2

SPKR42SSR-MJ
with 3-dimensional chipbreaker

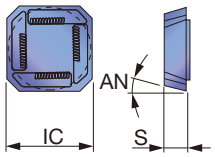
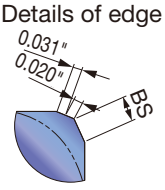


Fig.3

Details of edge



WPAN42SFRS
Wiper edge 1 corner

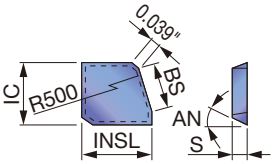


Fig.4

WPAN42SFR
2 corner

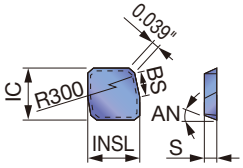


Fig.5

Right hand (R) shown.

		Coated					Cermet		Ceramic	Uncoated	
P	Steel	☆		☆		★	★	☆		☆	
M	Stainless	☆	★							☆	
K	Cast iron				★				★	☆	☆
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	RE	APMX	AH120	AH140	GH330	T1115	T3130	NS740	N308	FX105	UX30	TH10	IC	INSL	S	AN	BS	Fig.
SPCN42STR	0	0.276						●	●		●		0.500	-	0.125	11°	0.055	1
SPCN42SFR	0	0.276										●	0.500	-	0.125	11°	0.055	1
SPEN42STR	0	0.276						●					0.500	-	0.125	11°	0.055	1
SPKN42STR	0	0.276	●	●	●	●	●	●	●	●	●		0.500	-	0.125	11°	0.055	1
SPKN42STL	0	0.276						●			●		0.500	-	0.125	11°	0.055	1
SPKN42SFR	0	0.276										●	0.500	-	0.125	11°	0.055	1
SPKN42SFL	0	0.276										●	0.500	-	0.125	11°	0.055	1
SPKR42SSR-MJ	0	0.276			●	●	●						0.500	-	0.125	11°	0.000	3
WPAN42SFRS	0	-										●	0.488	0.587	0.125	11°	0.382	4
WPAN42SFR	0	-							●			●	0.488	0.543	0.125	11°	0.205	5
SPGN120312TN	0.047	0.276								●			0.500	-	0.125	11°	-	2
SPEN423TN*	0.047	0.276					●	●			●		0.500	-	0.125	11°	-	2
SPEN423FN*	0.047	0.276										●	0.500	-	0.125	11°	-	2

Note: Insert marked with * and a wiper insert should not be used together.

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

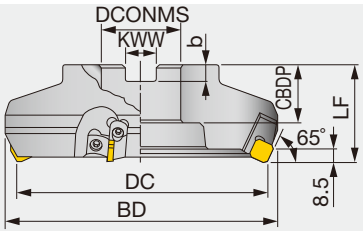
e-catalog

TGP4200R-A

Face mill, with wedge clamp system

GAMP = +5°,GAMF = +1°





Right hand (R) shown.

Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP4203R-A	6	80	5	95	50	25.4	26	9.5	6	1.4	SP*N42.../ WPAN42ZFR
TGP4204R-A	6	100	6	114	63	31.75	32	12.7	8	2.4	SP*N42.../ WPAN42ZFR
TGP4205R-A	6	125	8	139	63	38.1	38	15.9	10	3.9	SP*N42.../ WPAN42ZFR
TGP4206R-A	6	160	10	174	63	50.8	38	19	11	6.1	SP*N42.../ WPAN42ZFR

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TGP42**R-A	LP413R	FDS-8S	CM4X0.7X14	WP440R	TP-4

Recommended clamping torque: 8 N·m

INSERT

SPAN/SPCN/SPEN/SPKN 42Z

Regular edge
SP*N42Z*R/L

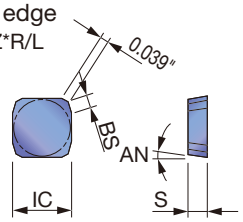


Fig.1

SPEN423*N

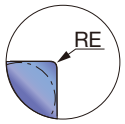


Fig.2

Wiper edge 2 corners
WPAN42Z*R/L

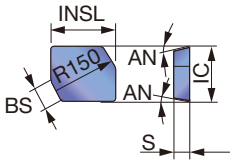


Fig.3

Right hand (R) shown.

Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

P	Steel		★		★	☆	☆	☆		
M	Stainless									
K	Cast iron	★						★		
N	Non-ferrous									
S	Superalloys									
H	Hard materials									

★ : First choice
☆ : Second choice

Designation	APMX	Coated		Cermet			Uncoated		IC	INSL	S	AN	BS	RE	Fig.
		T1115	T3130	NS740	X407	N308	UX30	TH10							
SPAN42ZFR	0.236							●	0.500	-	0.125	11°	0.079	-	1
SPCN42ZFL	0.236							●	0.500	-	0.125	11°	0.079	-	1
SPCN42ZFR	0.236							●	0.500	-	0.125	11°	0.079	-	1
SPCN42ZTR	0.236			●	●	●			0.500	-	0.125	11°	0.079	-	1
SPEN423TN	0.236		●	●			●		0.500	-	0.125	11°	-	0.047	2
SPEN423FN	0.236							●	0.500	-	0.125	11°	-	0.047	2
SPEN42ZTR	0.236			●					0.500	-	0.125	11°	0.079	-	1
SPKN42ZFL	0.236							●	0.500	-	0.125	11°	0.079	-	1
SPKN42ZFR	0.236							●	0.500	-	0.125	11°	0.079	-	1
SPKN42ZTR	0.236	●	●	●	●	●	●		0.500	-	0.125	11°	0.079	-	1
WPAN42ZFR	0.236							●	0.480	0.562	0.125	11°	0.177	-	3

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

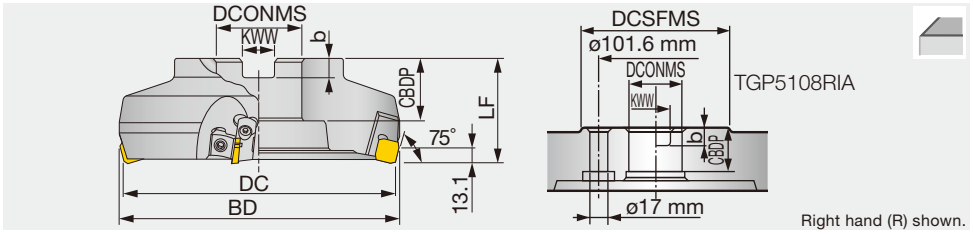
e-catalog

TGP5100RIA

Face mill, with wedge clamp system

GAMP = +7°,GAMF = +1°





Right hand (R) shown.

Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP5104RIA	10	100	5	109	63	31.75	32	12.7	8	2.3	SP*N53...
TGP5105RIA	10	125	6	133	63	38.1	38	15.9	10	3.5	SP*N53...
TGP5106RIA	10	160	8	167	63	50.8	38	19	11	5.7	SP*N53...
TGP5108RIA	10	200	10	207	63	47.625	38	25.4	14	8.4	SP*N53...

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TGP51**RIA	LP514R	FDS-8S	CM4X0.7X14	WF500R	TP-4

Recommended clamping torque: 8 N·m

INSERT

SPCN/SPKN 53S

SP*N53S*R/L

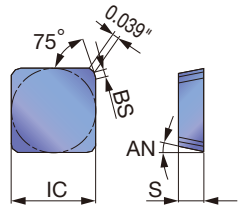


Fig.1

SPKN53STR20

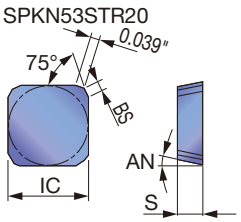


Fig.2

SPKR53SSR-MJ
with 3-dimensional chipbreaker

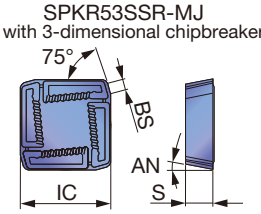


Fig.3

Right hand (R) shown.

		Coated			Cermet		Uncoated							
		GH330	T1115	T3130	NS740	N308	UX30	TH10						
P	Steel	★		★	★	☆		☆						
M	Stainless	★		☆				☆						
K	Cast iron		★					☆						
N	Non-ferrous													
S	Superalloys													
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	APMX	Coated			Cermet		Uncoated		IC	S	AN	BS	Fig.
		GH330	T1115	T3130	NS740	N308	UX30	TH10					
SPCN53SFR	0.394							●	0.625	0.187	11°	0.047	1
SPCN53STR	0.394					●	●		0.625	0.187	11°	0.047	1
SPKN53SFR	0.394							●	0.625	0.187	11°	0.047	1
SPKN53STL	0.394						●		0.625	0.187	11°	0.047	1
SPKN53STR	0.394	●	●		●		●		0.625	0.187	11°	0.047	1
SPKN53STR20	0.394			●					0.625	0.187	11°	0.079	2
SPKR53SSR-MJ	0.394	●		●					0.625	0.187	11°	0.079	3

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

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S-TAQ System

The world's highest level repeatability

S-TAQ System



Improved surface quality and increased tool life

- Two-face restricted (1/10 short taper and flange face) coupling.
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- Excellent dynamic balance reduces vibration, chatter, and cutting noise at high speeds.

Improved productivity

- High speed machining can reduce machining time.
- High repeatability can eliminate trial cut.

Labor-saving tool change

- Can eliminate detaching the toolholder from the main spindle.
- Can eliminate the brakes for the main spindle.
- Labor-saving clamping by only one T-wrench.

Performance

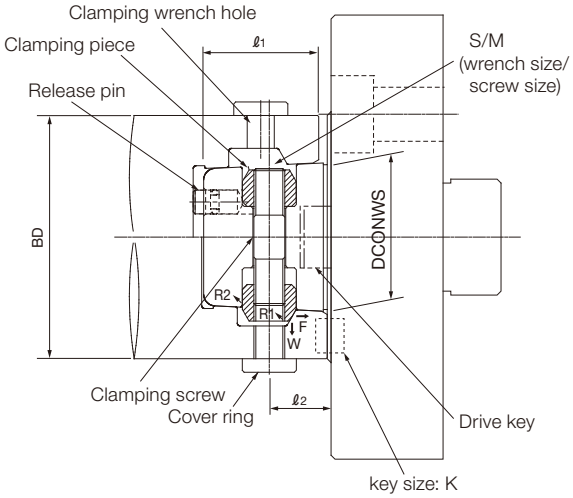
Original clamp system provides high rigidity, accuracy and operating speed.

Clamping force (Strong clamp system)

· Lubricant coating on clamping piece.
· 4-points balancing clamp.
· Sufficient clamping for the smaller diameter part of taper.

Designation	Dimensions (mm)				S/M	K	Recommend clamping torque (N·m)	Clamping force (N)
	DCONWS	BD	ℓ1	ℓ2				
TAQ32	19	32	18	8.5	3/M6	8	3	4×10^3
TAQ40	24	40	21	10	3/M6	10	5	5.5×10^3
TAQ50	30	50	25	12	4/M8	12	8	9×10^3
TAQ63	38	63	32	15	4/M8	16	10	12×10^3
TAQ80	48	80	40	18	5/M10	18	20	18×10^3
TAQ100	60	100	50	22	6/M12	20	30	23×10^3

Part assembly



W: Driving force by clamping screw
F: Clamping force
R1 = R2: Receiving force of clamping piece

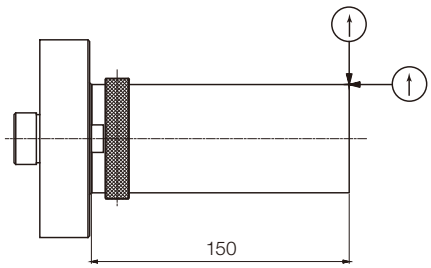
Comparison of clamping force

	Taper	Taper dia.(mm) / holder dia.(mm)	Recommend clamping torque (N/m)	Draw-in force (N)	Draw-in force / Torque (m-1)
TAQ63	1 / 10	38 / 63	10	12×10^3	1200
QC adapter	10°	35 / 70	20	9.8×10^3	490
Other makes A	4°	35 / 62	22.5	9.8×10^3	436

Repeatability for accuracy

Radial run out	Within 0.003 mm
Axial run out	Within 0.002 mm

Note: Measured at 150 mm far from end face.

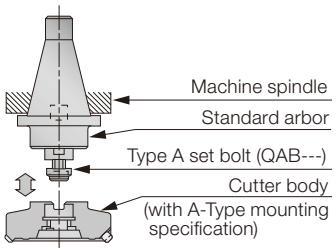


QC system for TAC Mills

TAC mills QC system facilitate easy and quick mounting of the cutter body (face milling cutter, etc.) to the machine tools.

Small dia. TAC mills QC system Dia. ø80 ~ 160 mm

Type A QC system



Features

- Cutter body replacement is possible without removing the bolt.
- A QC system is made up only by installing the Type A set bolt to our standard arbor. (The cutter body is made to A-Type mounting specification.)
- Standard arbor used ensures superior economy and rigidity.

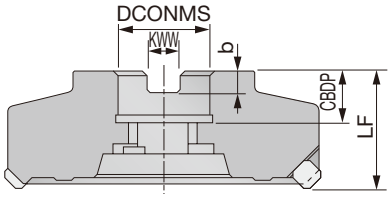
Replacement method

Mounting - Direct the set bolt direction to align with the cutter spot facing hole, then mount the cutter. Turn the set bolt one to two turns for tightening.

Removal - Loosen the bolt one turn, press the cutter to the spindle, and turn the set bolt one to two turns. The cutter can now be removed.

A-type QC Mounting System for Small Diameter TAC Mills

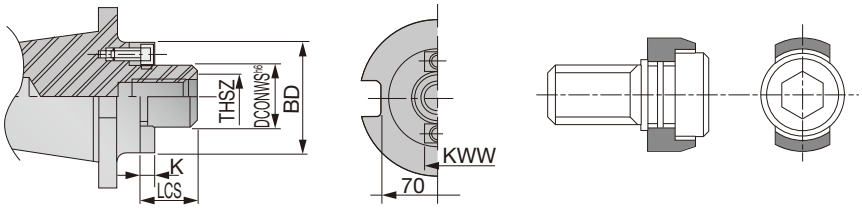
Dimensional details of mount (For ø80 to ø160 mm dia. TAC mills)



Cutter dia. (mm)	Dimensions (mm) DCONMS	b	KWW	CBDP	LF
ø80	25.4	6	9.5	20	50
ø100	31.75	8	12.7	22	50
ø125	38.1	10	15.9	27	63
ø160	50.8	11	19	27	63

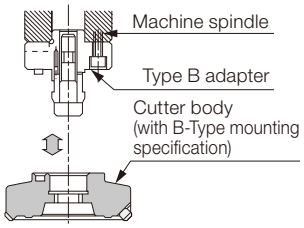
Arbors

Standard arbors (FMA, FMC type) can't be used. Special arbors applicable for bellow dimensions can be made to order on request.



Dimensions (mm) DCONWS	BD	THSZ	LCS	KWW	K	Cutter fixing screw for A-type		Hex wrench size(mm)
25.4	50	M12	18	9.5	5	QAB-3 (R/L)	Hex. Socket-head screw M12 × 30	10
31.75	60	M16	20	12.7	7	QAB-4 (R/L)	Hex. Socket-head screw M12 × 30	14
38.1	80	M20	25	15.9	9	QAB-5 (R/L)		17
50.8	100	M24	25	19.05	10	QAB-6 (R/L)		19

Type B QC system



Features

- Cutter body replacement is possible without removing the bolt.
- Loosening of the adapter is not enough to remove the cutter. This is to prevent the cutter from falling.
- Type B QC adapter and Type B cutter installation are necessary.
- It is not necessary to set the set bolt direction with that of the cutter hole. The cutter is fit into the adapter only by aligning the match marks.

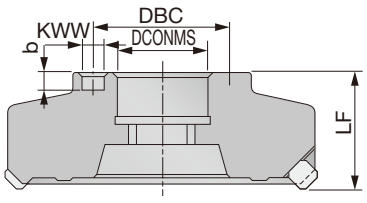
Replacement method

Mounting - Set the cutter into the adapter. Direct the cutter match mark to align with that of adapter, then the cutter enters the adapter. Turn the cutter by 90° and turn adapter bolt one to two turns for tightening.

Removal - Loosen adapter bolt by one or two turns and turn the cutter by 90°. The cutter can now be removed.

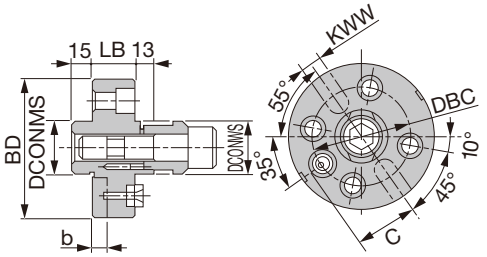
B-type QC Mounting System for Small Diameter TAC Mills

Dimensional details of mount (For ø80 to ø160 mm dia. TAC mills)



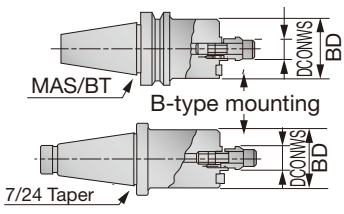
Cutter dia.	Dimensions (mm) DCONMS	b	KWW	LF	DBC
ø80	25.4	7	10	50	45
ø100	31.75	7	12	63	55
ø125	38.1	7	15	63	70
ø160	50.8	7	18	63	85

Dimensional details of B-type adapters



Cutter dia.	Dimensions (mm) DCONWS	c	BD	DCONMS	KWW	b	DBC	S	LB
ø80	25.4	22.5	80	25.4	9.5	7	45	M10	25
ø100	31.75	27.5	100	31.75	12.7	8	55	M10	25
ø125	38.1	35	100	38.1	15.9	10	70	M12	30
ø160	50.8	42.5	125	50.8	19	11	85	M16	30

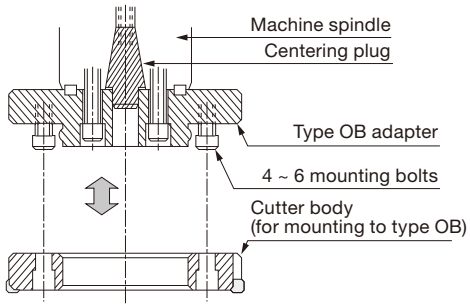
Instead of the above B-type adapters, BT- and T-type arbors can be also used for B-type QC mount cutters. These arbors are made to order on request.



QC system for TAC Mills

Large dia. TAC mills QC system Dia. ø200 mm -

Type OB QC system (Elongated mounting hole type)



Features

- The cutter body can be replaced without removing bolt.
- Cutter does not fall when only the bolt is removed.
- The cutter body weight is about one half of usual cutter.
- The cutter bolt is fixed to the adapter with four to six large bolts, ensuring high rigidity.

Replacement method

Mounting - Align the adapter tightening bolts (4 ~ 6) to the cutter mounting holes, turn the cutter whilst pressing it against the adapter, and turn the bolt to tighten.

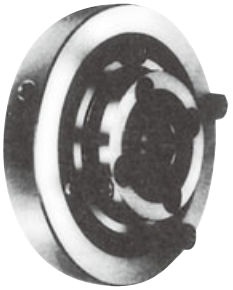
Removal - Loosen the bolt slightly, and by one turn, turn the cutter to remove it from the adapter.

OB-type QC Mounting System for Large Diameter TAC Mills (Elongated mounting hole type)

Cutter body (ø200 - ø400 mm)

This system is applied to “flush edge-top” Standard type TAC mills with OB mount.
For the details of the OB-type cutter bodies.

OB type adapter

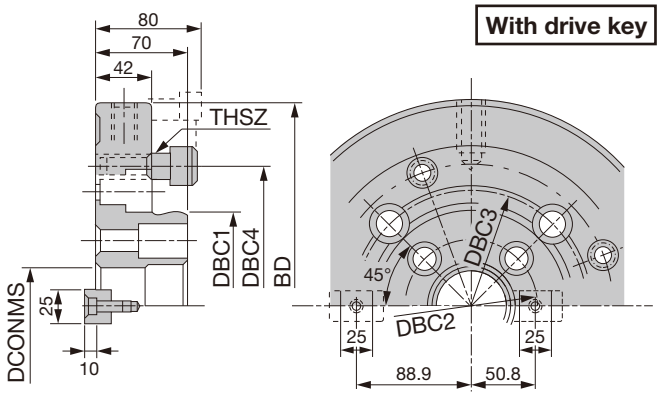


OB type cutter body



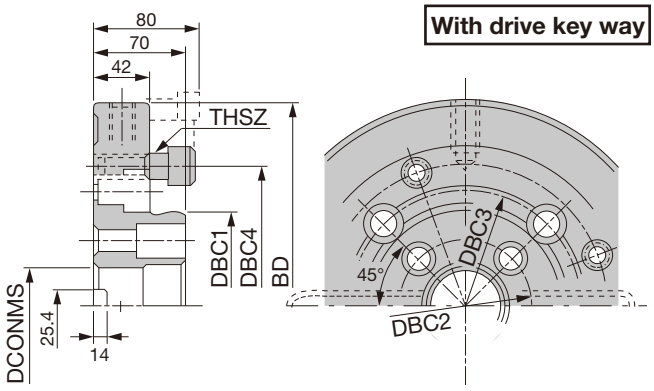
● Dimensional details of mount of OB-type adapters

With drive key



QA12K to QA16K type shown.

With drive key way



QA12M to QA16M type shown.

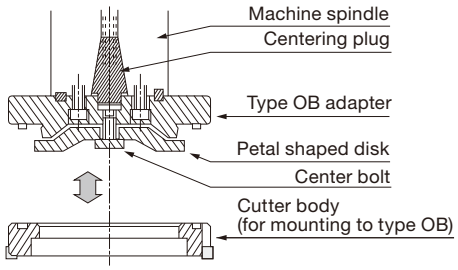
Adapter Designation	Dimensions (mm)							
	BD	DCONMS	DBC1	DBC2	DBC3	DBC4	THSZ	Bolts
QA08K/M	198	47.625	63.5	101.6	-	114.3	M16×40	4
QA10K/M	248	60	133.35	101.6	-	177.8	M16×50	4
QA12K/M	313	60	146.05	101.6	177.8	215.9	M20×50	4
QA14K/M	353	60	215.9	101.6	177.8	260.4	M20×50	6
QA16K/M	398	60	254	101.6	177.8	304.8	M20×50	6

Notes: In Designation, K indicates “with drive key” type, and M indicates “with drive key way” type.
(“N” shows number of tapped holes.)

Notes: • Dimension ød can be made to customer’s specifications.
• Special centering plugs for ø60 mm hole are made to order.

Large dia. TAC mills QC system Dia. ø200 mm -

Type CB QC system (Center bolt type)



Features

- Move the petal-shaped disk up and down with one center bolt in the adapter, removing the cutter. Since only one bolt is used, replacement takes only one half of the time required by Type CB.
- The cutter body is lighter by 20% than that of OB type and easy to handle.
- Compatible with auto clamp unit.
- The cutter does not fall when the center bolt only is loosened.

Replacement method

Mounting - Align the cutter notch with the adapter clamper and turn the cutter whilst pressing it against the adapter. Tighten with the center bolt.

Removal - Loosen the center bolt once and lift the cutter upward in the spindle direction. Turn the cutter further slightly, and the cutter can be removed from the adapter.

CB-type QC Mounting System for Large Diameter TAC Mills (Center bolt type)

Cutter body (ø200 - ø400 mm)

This system is applied to “flush edge-top” type TAC mills with CB mount.

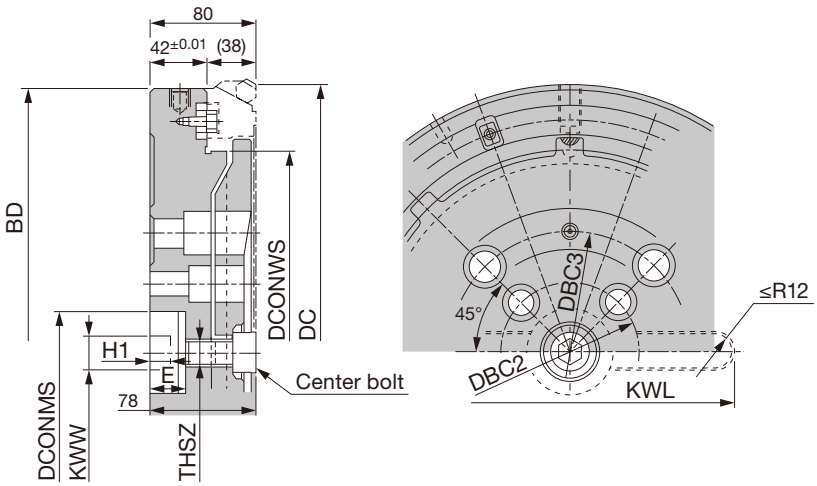
CB type adapter



CB type cutter body



● Dimensional details of mount of CB-type adapters



Adapter Designation	Dimensions (mm)											
	DC	DCONMS	BD	DCONWS	DBC2	DBC3	KWW	H1	KWL	THSZ	E	Center bolt
QACB-08MR/L	200	47.625	195	119.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-10MR/L	250	60	245	159.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-12MR/L	315	60	310	214.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-14MR/L	355	60	350	254.97	-	177.8	25.4	14	245	M20	25	TMBA-M20
QACB-16MR/L	400	60	395	299.95	-	177.8	25.4	14	245	M20	25	TMBA-M20

Note: • Dimension ød can be made to customer’s specifications.
• Because of the dimensional restriction of “E”, standard CO- type centering plugs can not be used for the adapters shown in the above table. Special centering plugs applicable for the above adapters can be made to order on request.

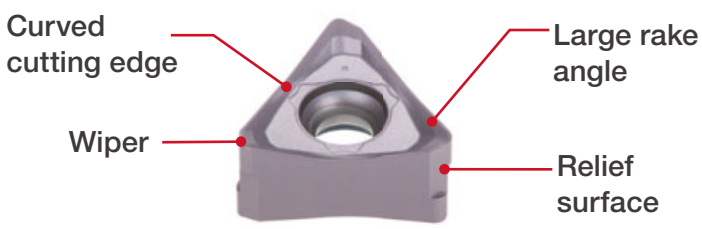
DOFORCE TRI



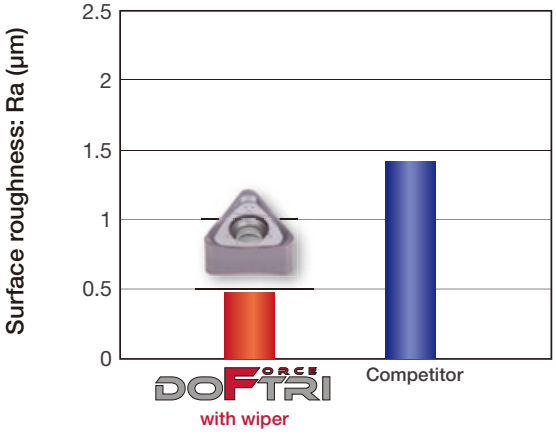
High precision shoulder mill series with economical double-sided triangular inserts

Innovative insert

- Highly economical 6-corner double sided inserts.
- Long effective cutting edge allows shoulder milling with large depth of cut.
- Low cutting force at low depth of cut, and high machining stability at large depth of cut.
  ・Concave cutting edge and large rake angle produce barrel-shape chips, resulting in excellent chip evacuation.
  ・ The design with wiper edge (front cutting edge) is also suitable for face milling.



Comparison of surface roughness



Reference pages: H171 - H174

TUNG-TRI

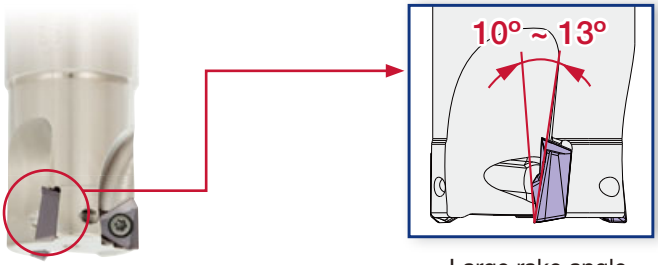


Excellent cutting performance with improved profitability

Economical 3 cutting-edge inserts



Drastically reduced cutting force



Large rake angle

Low cutting force for all depths of cut due to helical cutting edge with large rake angle.



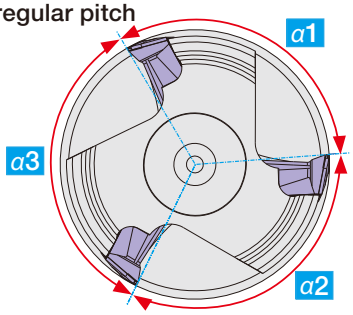
Good surface finish due to positive inclination on wiper edge

Uniquely designed flank face with built-in "margin" that prevents chattering and chipping.

Applicable for a wide range of cutting conditions

Insert positioning in irregular pitch, combined with uniquely designed flank face of inserts, prevents chattering during machining.

Irregular pitch



α1 ≒ α2 ≒ α3

■Cutting performance

○ OK △ Chatter × Strong chatter

ap (in)	0.002	0.004	0.006	0.008	0.010
0.400					
0.360					
0.320					
0.280					
0.240					
0.200					
0.160					
0.120					
0.080					
0.040					

OK

Applicable area — fz (ipt)

TUNG-TRI

ap (in)	0.002	0.004	0.006	0.008	0.010
0.400					
0.360					
0.320					
0.280					
0.240					
0.200					
0.160					
0.120					
0.080					
0.040					

OK

Applicable area — fz (ipt)

Competitor

Cutter	: EPA10R125U0125W03N (DC = 1.250", CICT = 3)
Insert	: TOMT100404PDER-MJ
Grade	: AH3135
Workpiece	: 1055 (200 HB)
Cutting speed	: *Vc* = 500 sfm
Width of cut	: *ae* = 1.250"
Machine	: Vertical M/C, CAT50

Reference pages: H146 - H156

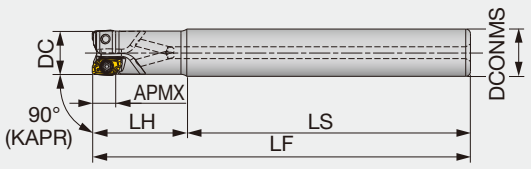
TUNGFREC FORCE

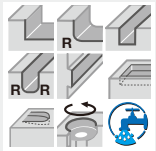
EPAV04/06/12

Square shoulder endmill, shank type, with screw clamp system

EPAV04/12: GAMP = +6°~ +7.6°, GAMF = -37.1°~ -32.4°
EPAV06: GAMP = +6°~ +7.7°, GAMF = -37.1°~ -30°







Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPAV06U0.31C0.37R01	0.236	0.313	1	0.375	2.463	0.787	3.250	0.09	With	AVGT06...
EPAV06U0.37C0.37R01	0.236	0.375	1	0.375	2.463	0.787	3.250	0.09	With	AVGT06...
EPAV06U0.37C0.37R01L	0.236	0.375	1	0.375	2.622	1.378	4.000	0.11	With	AVGT06...
EPAV06U0.50C0.50R02	0.236	0.500	2	0.500	2.463	0.787	3.250	0.15	With	AVGT06...
EPAV06U0.50C0.50R03	0.236	0.500	3	0.500	2.463	0.787	3.250	0.15	With	AVGT06...
EPAV06U0.50C0.50R02L	0.236	0.500	2	0.500	3.388	1.362	4.750	0.22	With	AVGT06...
EPAV06U0.62C0.62R03	0.236	0.625	3	0.625	2.713	0.787	3.500	0.26	With	AVGT06...
EPAV06U0.62C0.62R04	0.236	0.625	4	0.625	2.713	0.787	3.500	0.26	With	AVGT06...
EPAV06U0.62C0.62R03L	0.236	0.625	3	0.625	4.122	1.378	5.500	0.42	With	AVGT06...
EPAV12U0.62W0.62R02	0.453	0.625	2	0.625	1.906	1.000	2.906	0.22	With	AVM/GT12...
EPAV12U0.62W0.62R03	0.453	0.625	3	0.625	1.906	1.000	2.906	0.22	With	AVM/GT12...
EPAV12U0.62C0.62R02L	0.453	0.625	2	0.625	4.250	1.500	5.750	0.44	With	AVM/GT12...
EPAV06U0.75C0.62R04	0.236	0.750	4	0.625	2.815	1.185	4.000	0.33	With	AVGT06...
EPAV06U0.75C0.75R04	0.236	0.750	4	0.750	2.815	1.185	4.000	0.44	With	AVGT06...
EPAV06U0.75C0.75R05	0.236	0.750	5	0.750	2.815	1.185	4.000	0.44	With	AVGT06...
EPAV06U0.75C0.75R04L	0.236	0.750	4	0.750	6.500	1.375	7.875	0.90	With	AVGT06...
EPAV12U0.75W0.75R03	0.453	0.750	3	0.750	2.031	1.250	3.281	0.33	With	AVM/GT12...
EPAV12U0.75W0.75R04	0.453	0.750	4	0.750	2.031	1.250	3.281	0.33	With	AVM/GT12...
EPAV12U0.75C0.75R03L	0.453	0.750	3	0.750	5.250	2.000	7.250	0.79	With	AVM/GT12...
EPAV06U1.00C0.75R06	0.236	1.000	6	0.750	3.125	1.375	4.500	0.55	With	AVGT06...
EPAV06U1.00C1.00R05	0.236	1.000	5	1.000	3.125	1.375	4.500	0.93	With	AVGT06...
EPAV06U1.00C1.00R06	0.236	1.000	6	1.000	3.125	1.375	4.500	0.93	With	AVGT06...
EPAV06U1.00C1.00R04L	0.236	1.000	4	1.000	6.425	1.575	8.000	1.68	With	AVGT06...
EPAV12U1.00W1.00R03	0.453	1.000	3	1.000	2.281	1.500	3.781	0.71	With	AVM/GT12...
EPAV12U1.00W1.00R04	0.453	1.000	4	1.000	2.281	1.500	3.781	0.71	With	AVM/GT12...
EPAV12U1.00W1.00R06	0.453	1.000	6	1.000	2.281	1.500	3.781	0.71	With	AVM/GT12...
EPAV12U1.00C1.00R03L	0.453	1.000	3	1.000	5.750	2.750	8.500	1.65	With	AVM/GT12...
EPAV12U1.25W1.25R04	0.453	1.250	4	1.250	2.281	1.500	3.781	1.10	With	AVM/GT12...
EPAV12U1.25W1.25R06	0.453	1.250	6	1.250	2.281	1.500	3.781	1.12	With	AVM/GT12...
EPAV12U1.25W1.25R08	0.453	1.250	8	1.250	2.281	1.500	3.781	1.15	With	AVM/GT12...
EPAV12U1.25C1.25R03L	0.453	1.250	3	1.250	7.000	3.000	10.000	3.15	With	AVM/GT12...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPAV04M006C06.0R01	4	6	1	6	48	12	60	0.01	With	AVMT04...
EPAV04M008C08.0R02	4	8	2	8	48	12	60	0.02	With	AVMT04...
EPAV04M008C08.0R02L	4	8	2	8	60	20	80	0.03	With	AVMT04...
EPAV06M008C10.0R01	6	8	1	10	60	20	80	0.04	With	AVGT06...
EPAV04M010C10.0R02	4	10	2	10	60	20	80	0.04	With	AVMT04...
EPAV04M010C10.0R03	4	10	3	10	60	20	80	0.04	With	AVMT04...
EPAV04M010C10.0R02L	4	10	2	10	65	35	100	0.05	With	AVMT04...
EPAV06M010C10.0R02	6	10	2	10	60	20	80	0.04	With	AVGT06...
EPAV06M010C10.0R02L	6	10	2	10	65	35	100	0.06	With	AVGT06...
EPAV06M010C08.0R02L	6	10	2	8	80	20	100	0.04	With	AVGT06...
EPAV04M012C12.0R03	4	12	3	12	60	20	80	0.06	With	AVMT04...
EPAV04M012C12.0R04	4	12	4	12	60	20	80	0.06	With	AVMT04...
EPAV04M012C12.0R03L	4	12	3	12	85	35	120	0.09	With	AVMT04...
EPAV06M012C12.0R02	6	12	2	12	60	20	80	0.06	With	AVGT06..
EPAV06M012C12.0R03	6	12	3	12	60	20	80	0.06	With	AVGT06...
EPAV06M012C12.0R02L	6	12	2	12	85	35	120	0.09	With	AVGT06...
EPAV06M012C10.0R02L	6	12	2	10	100	20	120	0.07	With	AVGT06...
EPAV06M012C10.0R03	6	12	3	10	60	20	80	0.04	With	AVGT06...
EPAV12M012C12.0R01	11.5	12	1	12	60	25	85	0.06	With	AVM/GT12...
EPAV06M014C12.0R03	6	14	3	12	60	20	80	0.07	With	AVGT06...
EPAV06M014C12.0R03L	6	14	3	12	120	20	140	0.11	With	AVGT06...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPAV04M016C16.0R04	4	16	4	16	70	20	90	0.12	With	AVMT04...
EPAV04M016C16.0R05	4	16	5	16	70	20	90	0.12	With	AVMT04...
EPAV04M016C16.0R04L	4	16	4	16	105	35	140	0.19	With	AVMT04...
EPAV12M016C16.0R02	11.5	16	2	16	60	25	85	0.12	With	AVM/GT12...
EPAV12M016C16.0R03	11.5	16	3	16	60	25	85	0.12	With	AVM/GT12...
EPAV12M016C16.0R02L	11.5	16	2	16	105	40	145	0.20	With	AVM/GT12...
EPAV06M016C16.0R03	6	16	3	16	70	20	90	0.12	With	AVGT06...
EPAV06M016C16.0R04	6	16	4	16	70	20	90	0.12	With	AVGT06...
EPAV06M016C16.0R03L	6	16	3	16	105	35	140	0.20	With	AVGT06...
EPAV06M018C16.0R03	6	18	3	16	70	20	90	0.13	With	AVGT06...
EPAV06M018C16.0R04	6	18	4	16	70	20	90	0.13	With	AVGT06...
EPAV06M018C16.0R03L	6	18	3	16	160	20	180	0.26	With	AVGT06...
EPAV06M020C20.0R04	6	20	4	20	70	30	100	0.23	With	AVGT06...
EPAV06M020C20.0R05	6	20	5	20	70	30	100	0.21	With	AVGT06...
EPAV06M020C20.0R04L	6	20	4	20	165	35	200	0.45	With	AVGT06...
EPAV06M020C16.0R04	6	20	4	16	80	30	110	0.17	With	AVGT06...
EPAV12M020C20.0R03	11.5	20	3	20	70	30	100	0.22	With	AVM/GT12...
EPAV12M020C20.0R04	11.5	20	4	20	70	30	100	0.21	With	AVM/GT12...
EPAV12M020C20.0R02L	11.5	20	2	20	135	50	185	0.41	With	AVM/GT12...
EPAV06M025C25.0R05	6	25	5	25	80	35	115	0.4	With	AVGT06...
EPAV06M025C25.0R06	6	25	6	25	80	35	115	0.4	With	AVGT06...
EPAV06M025C25.0R04L	6	25	4	25	160	40	200	0.72	With	AVGT06...
EPAV06M025C20.0R06	6	25	6	20	80	35	115	0.27	With	AVGT06...
EPAV12M025C25.0R04	11.5	25	4	25	80	35	115	0.38	With	AVM/GT12...
EPAV12M025C25.0R06	11.5	25	6	25	80	35	115	0.39	With	AVM/GT12...
EPAV12M025C25.0R03L	11.5	25	3	25	150	70	220	0.74	With	AVM/GT12...
EPAV06M032C32.0R08	6	32	8	32	80	40	120	0.7	With	AVGT06...
EPAV06M032C32.0R06L	6	32	6	32	155	45	200	1.2	With	AVGT06...
EPAV12M032C32.0R06	11.5	32	6	32	80	40	120	0.68	With	AVM/GT12...
EPAV12M032C32.0R08	11.5	32	8	32	80	40	120	0.68	With	AVM/GT12...
EPAV12M032C32.0R03L	11.5	32	3	32	175	80	255	1.47	With	AVM/GT12...

INCH SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EPAV06U...	CSPB-2H	M-1000	IP-6DB
EPAV12U0.62W0.62R02	CSPB-2.5	-	IP-8D
EPAV12U0.62W0.62R03	CSPB-2.5S	-	IP-8D
EPAV12U0.62C0.62R02L	CSPB-2.5	-	IP-8D
EPAV12U0.75W0.75R03	CSPB-2.5	-	IP-8D
EPAV12U0.75W0.75R04	CSPB-2.5S	-	IP-8D
EPAV12U0.75C0.75R03L	CSPB-2.5	-	IP-8D
EPAV12U1.00W1.00R03	CSPB-2.5	-	IP-8D
EPAV12U1.00W1.00R04	CSPB-2.5	-	IP-8D
EPAV12U1.00W1.00R06	CSPB-2.5S	-	IP-8D
EPAV12U1.00C1.00R03L	CSPB-2.5	-	IP-8D
EPAV12U1.25W1.25R04	CSPB-2.5	-	IP-8D
EPAV12U1.25W1.25R06	CSPB-2.5	-	IP-8D
EPAV12U1.25W1.25R08	CSPB-2.5S	-	IP-8D
EPAV12U1.25C1.25R03L	CSPB-2.5	-	IP-8D

Recommended clamping torque:
CSPB-2H = 0.52 lbs·ft, CSPB-2.5, CSPB-2.5S = 0.96 lbs·ft

METRIC SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EPAV04M006C06.0R01	CSPB-1.8L3.3	M-1000	IP-6DB
EPAV04M008... - EPAV04M016...	CSPB-1.8L3.6	M-1000	IP-6DB
EPAV06M...	CSPB-2H	M-1000	IP-6DB
EPAV12M012C12.0R01	CSPB-2.5	M-1000	IP-8D
EPAV12M016C16.0R02	CSPB-2.5	M-1000	IP-8D
EPAV12M016C16.0R03	CSPB-2.5S	M-1000	IP-8D
EPAV12M016C16.0R02L	CSPB-2.5	M-1000	IP-8D
EPAV12M020C20.0R03	CSPB-2.5	M-1000	IP-8D
EPAV12M020C20.0R04	CSPB-2.5S	M-1000	IP-8D
EPAV12M020C20.0R02L	CSPB-2.5	M-1000	IP-8D
EPAV12M025C25.0R04	CSPB-2.5	M-1000	IP-8D
EPAV12M025C25.0R06	CSPB-2.5S	M-1000	IP-8D
EPAV12M025C25.0R03L	CSPB-2.5	M-1000	IP-8D
EPAV12M032C32.0R06	CSPB-2.5	M-1000	IP-8D
EPAV12M032C32.0R08	CSPB-2.5S	M-1000	IP-8D
EPAV12M032C32.0R03L	CSPB-2.5	M-1000	IP-8D

Recommended clamping torque:
CSPB-1.8L3.3, CSPB-1.8L3.6 = 0.5 N·m, CSPB-2H = 0.7 N·m,
CSPB-2.5, CSPB-2.5S = 1.3 N·m

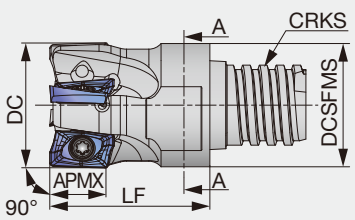
Reference pages: Inserts → H141, Standard cutting conditions → H142 - H143

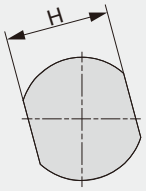
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HPAV06-S

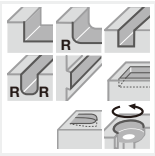
Square shoulder endmill, modular type (TungMeister), with screw clamp system

GAMP = +6.9°~ +7.6°, GAMF = -35.2°~ -32.4°





A-A cross section



Metric	APMX	DC	CICT	LF	H	DCSFMS	CRKS	WT(kg)	Insert
HPAV06M010S05R02	6	10	2	10	8	8	S05	0.01	AVGT06...
HPAV06M010S06R02	6	10	2	16	8	9.8	S06	0.01	AVGT06...
HPAV06M012S08R02	6	12	2	18	10	11.7	S08	0.02	AVGT06...
HPAV06M012S08R03	6	12	3	18	10	11.7	S08	0.02	AVGT06...
HPAV06M016S10R03	6	16	3	20	13	15.4	S10	0.03	AVGT06...
HPAV06M016S10R04	6	16	4	20	13	15.4	S10	0.03	AVGT06...

For connections between metric shank and TungMeister thread, please use VAD-M type connector

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

Recommended clamping torque: 0.7 N·m

Designation	Wrench*
HPAV06M010S...	KEYV-S06
HPAV06M012S...	KEYV-S08
HPAV06M016S...	KEYV-S10

*sold separately

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

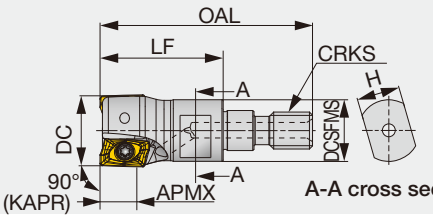
Reference pages: Inserts → H141, Standard cutting conditions → H142 - H143, TungMeister shank → I050

HPAV06/12-M

Square shoulder endmill, modular type (TungFlex), with screw clamp system

HPAV06-M: GAMP = +6.9°~ +7.6°, GAMF = -35.2°~ -32.4°
HPAV12-M: GAMP = +6°~ +7.6°, GAMF = -37.1°~ -32.4°





A-A cross section



Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPAV06M010M06R02	6	10	2	34.5	20	7	9.5	M6	0.01	Without	AVGT06...
HPAV06M012M06R02	6	12	2	34.5	20	7	10	M6	0.01	Without	AVGT06...
HPAV06M012M06R03	6	12	3	34.5	20	7	10	M6	0.01	Without	AVGT06...
HPAV06M016M08R03	6	16	3	42	25	10	13	M8	0.03	Without	AVGT06...
HPAV06M016M08R04	6	16	4	42	25	10	13	M8	0.03	Without	AVGT06...
HPAV12M016M08R02	11.5	16	2	42	25	10	14.5	M8	0.03	With	AVM/GT12...
HPAV12M016M08R03	11.5	16	3	42	25	10	14.5	M8	0.03	With	AVM/GT12...
HPAV12M020M10R03	11.5	20	3	49	30	15	17.8	M10	0.06	With	AVM/GT12...
HPAV12M020M10R04	11.5	20	4	49	30	15	17.8	M10	0.05	With	AVM/GT12...
HPAV12M025M12R04	11.5	25	4	57	35	17	23	M12	0.1	With	AVM/GT12...
HPAV12M025M12R06	11.5	25	6	57	35	17	23	M12	0.1	With	AVM/GT12...
HPAV12M032M16R06	11.5	32	6	63	40	22	28.8	M16	0.21	With	AVM/GT12...
HPAV12M032M16R08	11.5	32	8	63	40	22	28.8	M16	0.21	With	AVM/GT12...
HPAV12M040M16R06	11.5	40	6	63	40	22	28.8	M16	0.25	With	AVM/GT12...
HPAV12M040M16R08	11.5	40	8	63	40	22	28.8	M16	0.24	With	AVM/GT12...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB
HPAV12M016M08R02	CSPB-2.5	-	IP-8D
HPAV12M016M08R03	CSPB-2.5S	-	IP-8D
HPAV12M020M10R03	CSPB-2.5	-	IP-8D
HPAV12M020M10R04	CSPB-2.5S	-	IP-8D
HPAV12M025M12R04	CSPB-2.5	-	IP-8D
HPAV12M025M12R06	CSPB-2.5S	-	IP-8D
HPAV12M032M16R06	CSPB-2.5	-	IP-8D
HPAV12M032M16R08	CSPB-2.5S	-	IP-8D
HPAV12M040M16R06	CSPB-2.5	-	IP-8D
HPAV12M040M16R08	CSPB-2.5	-	IP-8D

Recommended clamping torque: 1.3 N·m

Reference pages: Inserts → H141, Standard cutting conditions → H142 - H143, TungFlex → H038 - H039

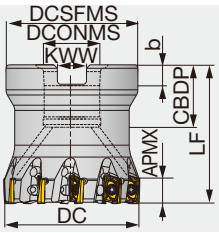
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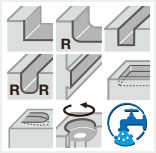
TPAV06/12

Square shoulder mill, bore type, with screw clamp system

TPAV06: GAMP = +7.7°, GAMF = -29.8°
TPAV12: GAMP = +6° ~ +7.6°, GAMF = -37.1° ~ -32.4°







Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(lb)	Air hole	Insert
TPAV12U1.50B0.50R05	0.453	1.500	5	1.417	0.500	0.630	1.575	0.258	0.157	0.460	With	AVM/GT12...
TPAV12U2.00B0.75R05	0.453	2.000	5	1.772	0.750	0.750	1.575	0.315	0.197	0.770	With	AVM/GT12...
TPAV12U2.00B0.75R12	0.453	2.000	12	1.772	0.750	0.750	1.575	0.315	0.197	0.840	With	AVM/GT12...

Metric	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(kg)	Air hole	Insert
TPAV06M040B16.0R10	6	40	10	38	16	18	40	8.4	5.6	0.24	With	AVGT06...
TPAV12M050B22.0R08	11.5	50	8	47	22	20	40	10.4	6.3	0.37	With	AVM/GT12...
TPAV12M050B22.0R12	11.5	50	12	47	22	20	40	10.4	6.3	0.37	With	AVM/GT12...
TPAV12M063B22.0R08	11.5	63	8	47	22	20	40	10.4	6.3	0.52	With	AVM/GT12...
TPAV12M063B22.0R14	11.5	63	14	47	22	20	40	10.4	6.3	0.54	With	AVM/GT12...

SPARE PARTS



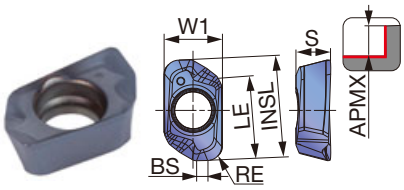



Designation	Clamping screw	Lubricant	Wrench	Shell locking bolt
TPAV06M040B16.0R10	CSPB-2H	M-1000	IP-6DB	CM8X30H
TPAV12U1.50B...	CSPB-2.5	-	IP-8D	SR UNF 1/4X3/4 B18.3
TPAV12U2.00B...	CSPB-2.5	-	IP-8D	C0.375X1.125H

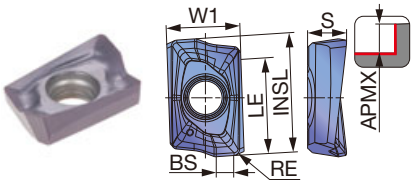
Recommended clamping torque: CSPB-2H = 0.52 lbs·ft, 0.7 N·m, CSPB-2.5 = 0.96 lbs·ft, 1.3 N·m

Reference pages: Standard cutting conditions → H142 - H143

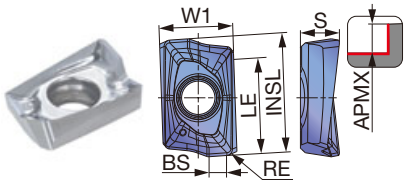
AVMT04-MM



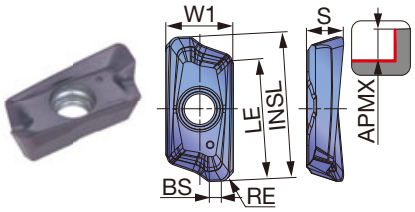
AVGT06-MJ



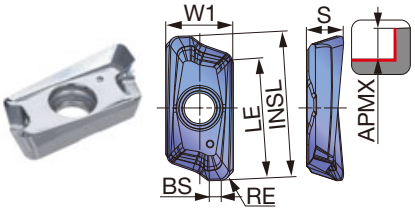
AVG06T-AJ



AVMT-12MM



AVGT12-AM



		AH120	AH130	AH3135	AH3225	T1215	T3225	KS05F
P	Steel	☆		☆	★		★	
M	Stainless		☆	☆	★		☆	
K	Cast iron	★				☆		
N	Non-ferrous							★
S	Superalloys	★	★		★			
H	Hard materials	★						

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						Carbide	W1	INSL	S	BS	LE
			AH120	AH130	AH3135	AH3225	T1215	T3225	KS05F					
AVMT040204PPER-MM	0.016	0.157	●		●					0.138	0.238	0.083	0.039	0.173
AVMT040208PPER-MM	0.031	0.157	●		●					0.138	0.238	0.083	0.024	0.173
AVGT060300PBER-MJ	0.000	0.236			●	●				0.197	0.315	0.106	0.063	0.256
AVGT060302PBER-MJ	0.008	0.236	●	●	●	●				0.197	0.315	0.106	0.059	0.256
AVGT060304PBER-MJ	0.016	0.236	●	●	●	●				0.197	0.315	0.106	0.051	0.256
AVGT060308PBER-MJ	0.031	0.236	●	●	●	●				0.197	0.315	0.102	0.035	0.256
AVGT060300PBFR-AJ	0.000	0.236							●	0.197	0.315	0.106	0.063	0.256
AVGT060302PBFR-AJ	0.008	0.236							●	0.197	0.315	0.106	0.059	0.256
AVGT060304PBFR-AJ	0.016	0.236							●	0.197	0.315	0.106	0.051	0.256
AVGT060308PBFR-AJ	0.031	0.236							●	0.197	0.315	0.102	0.035	0.256
AVMT120404PDER-MM	0.016	0.453	●			●	●	●		0.260	0.559	0.142	0.059	0.465
AVMT120408PDER-MM	0.031	0.453	●			●	●	●		0.260	0.559	0.142	0.043	0.465
AVMT120412PDER-MM	0.047	0.453	●			●	●	●		0.260	0.559	0.142	0.028	0.465
AVMT120416PDER-MM	0.063	0.453	●			●	●	●		0.260	0.559	0.142	0.012	0.465
AVMT120420PDER-MM	0.079	0.413	●			●	●	●		0.260	0.500	0.134	0.047	0.437
AVMT120430PDER-MM	0.118	0.413	●			●	●	●		0.260	0.500	0.134	0.008	0.437
AVGT120404PDFR-AM	0.016	0.453							●	0.260	0.559	0.142	0.059	0.465
AVGT120408PDFR-AM	0.031	0.453							●	0.260	0.559	0.142	0.043	0.465

● : Line up

Reference pages: Standard cutting conditions → H142 - H143

STANDARD CUTTING CONDITIONS

EPAV04

ISO	Workpiece meterials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3225	328 - 984	0.002 - 0.005
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	First choice	AH3225	328 - 820	0.002 - 0.005
P	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3225	328 - 656	0.002 - 0.004
M	Stainless steel 304SS, etc.		- 200 HB	First choice	AH3225	262 - 591	0.002 - 0.004
K	Gray cast iron Class 25, etc.		150 - 250 HB	First choice	AH120	328 - 984	0.002 - 0.005
K	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.002 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH3225	66 - 197	0.002 - 0.003
S	Superalloys Inconel718, etc.		- 40 HRC	First choice	AH120	66 - 131	0.002 - 0.003
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH120	164 - 492	0.002 - 0.003
H	Hardened steel	D2, etc.	50 - 60 HRC	First choice	AH120	131 - 230	0.002 - 0.003

EPAV06, HPAV06-M, HPAV06-S, TPAV06

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3225	755 - 1410	0.003 - 0.005
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	First choice	AH3225	490 - 1150	0.003 - 0.005
P	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3225	325 - 750	0.003 - 0.005
M	Stainless steel 304SS, etc.		- 200 HB	First choice	AH3135	490 - 720	0.003 - 0.004
K	Gray cast iron Class 25, etc.		150 - 250 HB	First choice	AH120	655 - 1080	0.003 - 0.005
K	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	490 - 785	0.003 - 0.005
N	Aluminum alloys Si < 13%		-	First choice	KS05F	2130 - 3280	0.003 - 0.005
N	Aluminum alloys Si ≥ 13%		-	First choice	KS05F	325 - 750	0.003 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH130	130 - 295	0.0016 - 0.004
S	Superalloys Inconel718, etc.		- 40 HRC	First choice	AH130	145 - 210	0.0016 - 0.004
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH120	145 - 225	0.002 - 0.004
H	Hardened steel	D2, etc.	50 - 60 HRC	First choice	AH120	130 - 210	0.0016 - 0.003

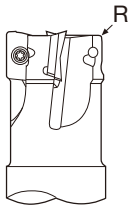
Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

EPAV12, HPAV12-M, TPAV12

ISO	Workpiece meterials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1028, etc.		- 200 HB	First choice	AH3225	328 - 984	0.002 - 0.009
			- 200 HB	Wear resistance	T3225	656 - 1312	0.002 - 0.007
	Carbon steel and alloy steel 1045, etc.		- 300 HB	First choice	AH3225	328 - 820	0.002 - 0.009
			- 300 HB	Wear resistance	T3225	656 - 1312	0.002 - 0.007
	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3225	328 - 656	0.002 - 0.009
			30 - 40 HRC	Wear resistance	T3225	656 - 1312	0.002 - 0.006
M	Stainless steel 304SS, etc.		- 200 HB	First choice	AH3225	262 - 591	0.003 - 0.008
K	Gray cast iron No. 250B, etc.		150 - 250 HB	First choice	AH120	328 - 984	0.002 - 0.005
			150 - 250 HB	Wear resistance	T1215	656 - 1312	0.002 - 0.007
	Ductile cast iron 60-40-18, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.002 - 0.005
			150 - 250 HB	Wear resistance	T1215	492 - 984	0.002 - 0.007
N	Aluminum alloys Si < 13%		-	First choice	KS05F	984 - 4921	0.002 - 0.013
	Aluminum alloys Si ≥ 13%		-	First choice	KS05F	328 - 656	0.002 - 0.013
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH3225	66 - 197	0.002 - 0.006
	Superalloys Inconel718, etc.		- 40 HRC	First choice	AH120	66 - 131	0.002 - 0.006
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH120	164 - 492	0.002 - 0.003
		D2, etc.	50 - 60 HRC	First choice	AH120	131 - 230	0.002 - 0.003

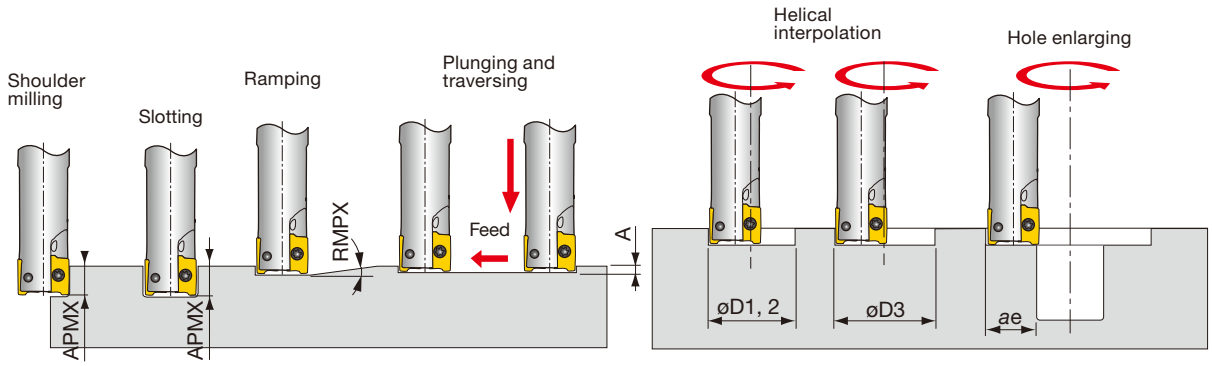
Cautionary point in modifying cutter bodies

When using inserts with corner radius RE ≥ 0.0787", standard cutter bodies have to be modified “R”. (EPAV12, TPAV12, HPAV12)



Corner radius RE (in)	The dimension of modifying (in)
0.0157 - 0.0623	Unnecessary
0.0787 - 0.1181	0.0787

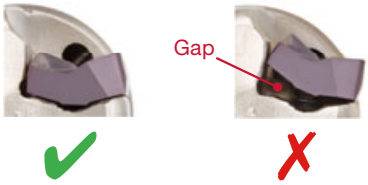
MACHINING APPLICATIONS



		Max. depth of cut	Max. ramping angle	Max. plunging	Min. machining	Max. machining		Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2	øD3*	*ae*
EPAV06U0.31...	0.313	0.236	-	-	-	-	-	-
EPAV06U0.37...	0.375	0.236	3°	0.012	0.591	0.748	0.709	0.374
EPAV06U0.50...	0.500	0.236	3°	0.012	0.709	0.906	0.866	0.453
EPAV06U0.62...	0.625	0.236	2.3°	0.012	1.026	1.220	1.181	0.610
EPAV06U0.75...	0.750	0.236	2°	0.012	1.276	1.460	1.421	0.730
EPAV06U1.00...	1.000	0.236	1.6°	0.012	1.775	1.960	1.921	0.980
EPAV12U0.62...	0.625	0.453	3.5°	0.020	0.986	1.211	1.171	0.586
EPAV12U0.75...	0.750	0.453	3°	0.020	1.224	1.461	1.421	0.711
EPAV12U1.00...	1.000	0.453	2.5°	0.020	1.709	1.961	1.921	0.961
EPAV12U1.25...	1.250	0.453	2°	0.020	2.201	2.461	2.421	1.211
TPAV12U1.50...	1.500	0.453	1.7°	0.020	2.700	2.961	2.921	1.461
TPAV12U2.00...	2.000	0.453	1.2°	0.020	3.750	3.961	3.921	1.961

*Flat bottom hole

When clamping the insert, please confirm that there is no gap between the cutter body and the insert as shown in the picture.



Approach angle

MEMO

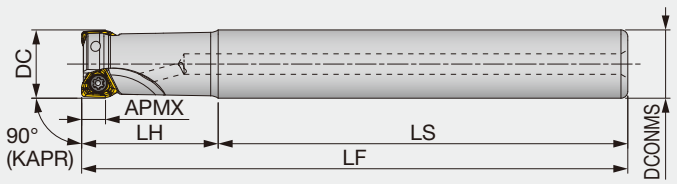
TUNG-TRI

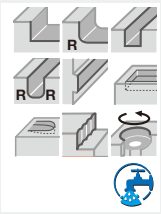
EPA04/06/10/15

High precision square shoulder endmill, shank type, with screw clamp system

EPA04: GAMP = +12.1°~ +12.2°, GAMF = -14.2°~ -18.3°, EPA06: GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°,
EPA10: GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°, EPA15: GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPA06R050U0050-01N	0.236	0.500	1	0.500	2.250	0.750	3.000	0.15	Without	TOMT06...
EPA06R063U0063-02N	0.236	0.625	2	0.625	2.563	0.937	3.500	0.29	Without	TOMT06...
EPA06R075U0075-03N	0.236	0.750	3	0.750	2.858	1.142	4.000	0.46	With	TOMT06...
EPA06R100U0100W04N	0.236	1.000	4	1.000	2.280	1.500	3.780	0.76	Without	TOMT06...
EPA10R100U0075W02N	0.394	1.000	2	0.750	2.362	1.378	3.740	0.44	Without	TO*T10...
EPA10R100U0100W02N	0.394	1.000	2	1.000	2.362	1.378	3.740	0.71	Without	TO*T10...
EPA10R100U0100W02L	0.394	1.000	2	1.000	5.748	2.752	8.500	1.68	With	TO*T10...
EPA10R125U0125W02L	0.394	1.250	2	1.250	7.000	3.000	10.000	3.15	With	TO*T10...
EPA10R125U0125W03N	0.394	1.250	3	1.250	2.362	1.378	3.740	1.12	Without	TO*T10...
EPA10R125U0125W03ML	0.394	1.250	3	1.250	4.250	2.250	6.500	2.07	With	TO*T10...
EPA10R150U0125W02L	0.394	1.500	2	1.250	8.000	2.000	10.000	3.33	With	TO*T10...
EPA10R150U0125W03ML	0.394	1.500	3	1.250	4.250	2.250	6.500	2.43	With	TO*T10...
EPA10R150U0125W04N	0.394	1.500	4	1.250	3.157	1.969	5.126	1.68	Without	TO*T10...
EPA15R150U0125W03N	0.590	1.500	3	1.250	2.250	2.250	4.500	1.48	With	TO*T15...
EPA15R150U0125W02L	0.590	1.500	2	1.250	2.250	4.250	6.500	2.07	With	TO*T15...
EPA15R200U0125W04N	0.590	2.000	4	1.250	2.250	2.250	4.500	1.74	Without	TO*T15...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA04R008M08.0-01	3.5	8	1	8	48	12	60	0.02	With	TOMT04...
EPA04R010M10.0-02	3.5	10	2	10	60	20	80	0.04	With	TOMT04...
EPA04R010M10.0-02L	3.5	10	2	10	65	35	100	0.05	With	TOMT04...
EPA04R012M12.0-02	3.5	12	2	12	60	20	80	0.06	With	TOMT04...
EPA04R012M12.0-03	3.5	12	3	12	60	20	80	0.06	With	TOMT04...
EPA04R012M12.0-02L	3.5	12	2	12	85	35	120	0.09	With	TOMT04...
EPA06R012M16.0-01N	6	12	1	16	50	18	68	0.09	Without	TO*T06...
EPA04R016M16.0-03	3.5	16	3	16	70	20	90	0.12	With	TOMT04...
EPA04R016M16.0-04	3.5	16	4	16	70	20	90	0.12	With	TOMT04...
EPA04R016M16.0-03L	3.5	16	3	16	105	35	140	0.19	With	TOMT04...
EPA06R016M16.0-02N	6	16	2	16	60	24	84	0.12	Without	TO*T06...
EPA06R016M16.0-02L	6	16	2	16	105	40	145	0.2	With	TO*T06...
EPA06R018M16.0-02N	6	18	2	16	60	24	84	0.13	Without	TO*T06...
EPA06R018M16.0-02L	6	18	2	16	115	30	145	0.21	With	TO*T06...
EPA04R020M20.0-04	3.5	20	4	20	70	30	100	0.21	With	TOMT04...
EPA04R020M20.0-05	3.5	20	5	20	70	30	100	0.21	With	TOMT04...
EPA04R020M20.0-04L	3.5	20	4	20	165	35	200	0.44	With	TOMT04...
EPA06R020M16.0-02N	6	20	2	16	60	30	90	0.14	Without	TO*T06...
EPA06R020M20.0-02N	6	20	2	20	70	30	100	0.23	Without	TO*T06...
EPA06R020M20.0-03N	6	20	3	20	70	30	100	0.22	Without	TO*T06...
EPA06R020M20.0-02L	6	20	2	20	135	50	185	0.41	With	TO*T06...
EPA06R022M20.0-02N	6	22	2	20	70	30	100	0.23	Without	TO*T06...
EPA06R022M20.0-03N	6	22	3	20	70	30	100	0.23	Without	TO*T06...
EPA06R022M20.0-02L	6	22	2	20	145	40	185	0.42	With	TO*T06...
EPA04R025M25.0-05	3.5	25	5	25	80	35	115	0.39	With	TOMT04...
EPA04R025M25.0-06	3.5	25	6	25	80	35	115	0.39	With	TOMT04...
EPA04R025M25.0-04L	3.5	25	4	25	160	40	200	0.7	With	TOMT04...
EPA06R025M25.0-03N	6	25	3	25	80	35	115	0.41	Without	TO*T06...
EPA06R025M25.0-04N	6	25	4	25	80	35	115	0.41	Without	TO*T06...
EPA06R025M25.0-02L	6	25	2	25	150	70	220	0.78	With	TO*T06...
EPA10R025M25.0-02N	10	25	2	25	80	35	115	0.38	Without	TO*T10...
EPA10R025M25.0-02L	10	25	2	25	150	70	220	0.75	With	TO*T10...
EPA06R028M25.0-03N	6	28	3	25	80	35	115	0.42	Without	TO*T06...
EPA06R028M25.0-04N	6	28	4	25	80	35	115	0.42	Without	TO*T06...
EPA06R028M25.0-02L	6	28	2	25	180	40	220	0.8	With	TO*T06...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA10R028M25.0-02N	10	28	2	25	80	35	115	0.39	Without	TO*T10...
EPA10R028M25.0-02L	10	28	2	25	185	35	220	0.78	With	TO*T10...
EPA10R032M32.0-02N	10	32	2	32	80	40	120	0.66	Without	TO*T10...
EPA10R032M32.0-03N	10	32	3	32	80	40	120	0.65	Without	TO*T10...
EPA10R032M32.0-02L	10	32	2	32	175	80	255	1.46	With	TO*T10...
EPA10R035M32.0-02N	10	35	2	32	80	40	120	0.7	Without	TO*T10...
EPA10R035M32.0-03N	10	35	3	32	80	40	120	0.68	Without	TO*T10...
EPA10R035M32.0-02L	10	35	2	32	215	40	255	1.52	With	TO*T10...
EPA10R040M32.0-03N	10	40	3	32	80	40	120	0.72	Without	TO*T10...
EPA10R040M32.0-04N	10	40	4	32	80	40	120	0.73	Without	TO*T10...
EPA10R040M32.0-02L	10	40	2	32	205	50	255	1.57	With	TO*T10...
EPA15R040M32.0-03N	15	40	3	32	80	40	120	0.73	Without	TO*T15...
EPA15R040M32.0-02L	15	40	2	32	205	50	255	1.56	With	TO*T15...
EPA15R050M32.0-04N	15	50	4	32	80	40	120	0.83	Without	TO*T15...
EPA15R050M42.0-02L	15	50	2	42	310	50	360	3.84	With	TO*T15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Wrench	Torx bit
EPA04R008M08.0-01	CSPB-1.8L3.3	IP-6DB	-	-	-
EPA04R010 - 025...	CSPB-1.8L3.6	IP-6DB	-	-	-
EPA06R050, 063U... EPA06R012 - 018M...	CSTB-2.5S	-	M-1000	T-8D	-
EPA06R075, 100U... EPA06R020 - 028M...	CSTB-2.5	-	M-1000	T-8D	-
EPA10...	SR14-562/S	SW6-SD	M-1000	-	BLDT10/S7
EPA15...	TS45120I	H-TB2W	M-1000	-	BT20S

Recommended clamping torque: CSPB-1.8L3.6 = 0.37 lbs·ft, 0.5 N·m, CSTB-2.5S, CSTB-2.5 = 0.96 lbs·ft, 1.3 N·m, SR14-562/S = 2.58 lbs·ft, 3.5 N·m, CSPB-1.8L3.3, TS45120I = 3.69 lbs·ft, 5 N·m

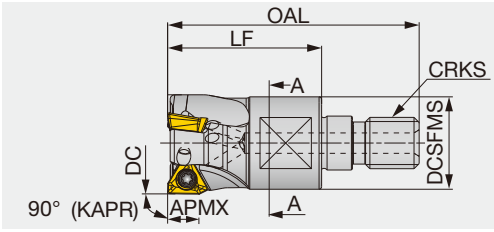
TUNG-TRI

HPA06/10-M

High precision square shoulder endmill, modular type (TungFlex)

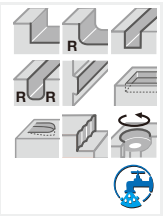
HPA06-M: GAMP = +8.5°~ +11.5°, GAMF = -12.5°~ -5.5°
HPA10-M: GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°







A-A cross section



Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPA06R016MM08-02	6	16	2	42	25	10	13	M8	0.03	with	TO*T06...
HPA06R020MM10-03	6	20	3	49	30	15	18	M10	0.06	with	TO*T06...
HPA06R025MM12-04	6	25	4	57	35	17	21	M12	0.1	with	TO*T06...
HPA06R032MM16-05	6	32	5	63	40	22	29	M16	0.20	with	TO*T06...
HPA10R025MM12-02	10	25	2	57	35	17	21	M12	0.08	with	TO*T10...
HPA10R032MM16-03	10	32	3	63	40	22	29	M16	0.18	with	TO*T10...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Wrench	Torx bit
HPA06R016MM08-02	CSTB-2.5S	-	M-1000	T-8D	-
HPA06R020 - 032MM...	CSTB-2.5	-	M-1000	T-8D	-
HPA10...	SR14-562/S	SW6-SD	M-1000	-	BLDT10/S7

Recommended clamping torque: CSTB-2.5, CSTB-2.5S = 1.3 N·m, SR14-562/S = 3.5 N·m

Reference pages: Inserts → H153, Standard cutting conditions → H154 - H155, TungFlex → H038 - H039

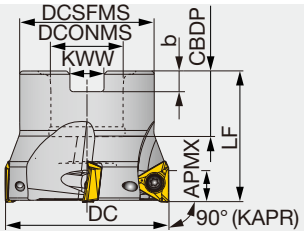
TUNG-TRI

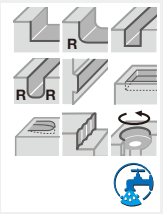
TPA06/10/15

High precision square shoulder mill, with screw clamp system

TPA06: GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°
TPA10: GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°
TPA15: GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







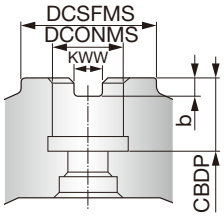
Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert	Arbor type
TPA10R150U0050A04	0.394	1.500	4	1.378	0.500	0.610	1.575	0.157	0.258	0.400	With	TO*T10...	A
TPA06R200U0075A08	0.236	2.000	8	1.693	0.750	0.750	1.575	0.197	0.315	0.310	With	TOMT06...	A
TPA10R200U0075A04	0.394	2.000	4	1.693	0.750	0.750	1.575	0.197	0.315	0.440	With	TO*T10...	A
TPA15R200U0075A04	0.590	2.000	4	1.625	0.750	0.750	1.570	0.197	0.315	0.600	With	TO*T15...	A
TPA10R250U0075A06	0.394	2.500	6	1.693	0.750	0.750	1.575	0.197	0.315	0.680	With	TO*T10...	A
TPA15R250U0075A05	0.590	2.500	5	2.125	0.750	0.750	1.570	0.197	0.315	0.900	With	TO*T15...	A
TPA10R300U0100A07	0.394	3.000	7	2.283	1.000	1.024	1.969	0.236	0.374	1.120	With	TO*T10...	A
TPA15R300U0100A06	0.590	3.000	6	2.250	1.000	1.024	1.750	0.236	0.374	1.900	With	TO*T15...	A
TPA10R400U0150A08	0.394	4.000	8	3.150	1.500	1.413	2.480	0.394	0.626	2.290	With	TO*T10...	B
TPA15R400U0150A07N	0.590	4.000	7	3.000	1.500	1.181	2.000	0.394	0.626	1.270	Without	TO*T15...	B
TPA15R500U0150A08N	0.590	5.000	8	4.000	1.500	1.175	2.000	0.394	0.626	2.800	Without	TO*T15...	B
TPA15R600U0200A10N	0.590	6.000	10	4.750	2.000	1.220	2.000	0.433	0.748	10.520	Without	TO*T15...	B

Metric	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPA06R032M16.0E05	6	32	5	30	16	18	40	5.6	8.4	0.14	With	TO*T06...
TPA06R040M16.0E06	6	40	6	35	16	18	40	5.6	8.4	0.22	With	TO*T06...
TPA10R040M16.0E04	10	40	4	35	16	18	40	5.6	8.4	0.2	With	TO*T10...
TPA06R050M22.0E08	6	50	8	41	22	20	40	6.3	10.4	0.31	With	TO*T06...
TPA10R050M22.0E04	10	50	4	41	22	20	40	6.3	10.4	0.31	With	TO*T10...
TPA15R050M22.0E04	15	50	4	41	22	20	40	6.3	10.4	0.27	With	TO*T15...
TPA10R063M22.0E06	10	63	6	41	22	20	40	6.3	10.4	0.51	With	TO*T10...
TPA15R063M22.0E05	15	63	5	41	22	20	40	6.3	10.4	0.41	With	TO*T15...
TPA10R080M25.4-07	10	80	7	58	25.4	26	50	6	9.5	1.04	With	TO*T10...
TPA10R080M27.0E07	10	80	7	58	27	22	50	7	12.4	1.04	With	TO*T10...
TPA15R080M25.4-06	15	80	6	46	25.4	26	50	6	9.5	0.83	With	TO*T15...
TPA15R080M27.0E06	15	80	6	50	27	22	50	7	12.4	0.86	With	TO*T15...
TPA10R100M31.7-08	10	100	8	70	31.75	32	63	8	12.7	2.02	With	TO*T10...
TPA10R100M32.0E08	10	100	8	60	32	28.5	50	8	14.4	2.02	With	TO*T10...
TPA15R100M31.7-07	15	100	7	60	31.75	32	50	8	12.7	1.3	With	TO*T15...
TPA15R100M32.0E07	15	100	7	60	32	28.5	50	8	14.4	1.27	With	TO*T15...
TPA15R125M38.1-08	15	125	8	80	38.1	38	63	10	15.9	2.7	With	TO*T15...
TPA15R125M40.0E08	15	125	8	71	40	32	63	9	16.4	2.47	With	TO*T15...
TPA15R160M40.0E10N	15	160	10	100	40	32	63	9	16.4	4.77	Without	TO*T15...
TPA15R160M50.8-10N	15	160	10	100	50.8	46	63	11	19	4.4	Without	TO*T15...

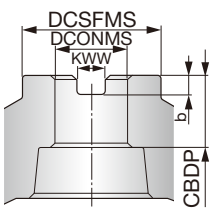
Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Arbor type

Arbor type A



Arbor type B



Reference pages: Inserts → H153, Standard cutting conditions → H154 - H155

INCH SPARE PARTS

Designation	Clamping screw	Grip 1	Grip 2	Lubricant	Wrench	Torx bit	Shell locking bolt (Optional parts)
TPA06R200U0075A08	CSTB-2.5	-	-	M-1000	T-8D	-	(C0.375X1.125H)
TPA10R150U0050A04	SR14-562/S	-	SW6-SD	M-1000	-	BLDT10/S7	(SF UNF 1/4x3/4 B18.3)
TPA10R200 - 250U...	SR14-562/S	-	SW6-SD	M-1000	-	BLDT10/S7	(C0.375X1.125H)
TPA10R300U0100A07	SR14-562/S	-	SW6-SD	M-1000	-	BLDT10/S7	(C0.500X1.375H)
TPA10R400U0150A08	SR14-562/S	-	SW6-SD	M-1000	-	BLDT10/S7	(TMBA-0.750H)
TPA15R200, 250U...	TS45120I	H-TB2W	-	M-1000	-	BT20S	(C0.375X1.125H)
TPA15R300U0100A06	TS45120I	H-TB2W	-	M-1000	-	BT20S	(C0.500X1.375H)
TPA15R400U0150A07N	TS45120I	H-TB2W	-	M-1000	-	BT20S	(TMBA-0.750H)
TPA15R500U0150A08N	TS45120I	H-TB2W	-	M-1000	-	BT20M	(TMBA-0.750H)
TPA15R600U0200A10N	TS45120I	H-TB2W	-	M-1000	-	BT20M	-

Recommended clamping torque: CSTB-2.5 = 0.96 lbs·ft, SR14-562/S = 2.58 lbs·ft, TS45120I = 3.69 lbs·ft

METRIC SPARE PARTS

Designation	Clamping screw	Grip 1	Grip 2	Lubricant	Center bolt 1	Center bolt 2	Wrench	Torx bit
TPA06R032M16.0E05	CSTB-2.5	-		M-1000	-	FSHM8-30H	T-8D	
TPA06R040M16.0E06	CSTB-2.5	-		M-1000	-	CM8X30H	T-8D	
TPA06R050M22.0E08	CSTB-2.5	-		M-1000	-	CM10X30H	T-8D	
TPA10R040M16.0E04	SR14-562/S	-	SW6-SD	M-1000	-	CM8X30H	-	BLDT10/S7
TPA10R050, 063M...	SR14-562/S	-	SW6-SD	M-1000	-	CM10X30H	-	BLDT10/S7
TPA10R080M...	SR14-562/S	-	SW6-SD	M-1000	-	CM12X30H	-	BLDT10/S7
TPA10R100M...	SR14-562/S	-	SW6-SD	M-1000	-	CM16X40H	-	BLDT10/S7
TPA15R050M22.0E04	TS45120I	H-TB2W		M-1000	-	FSHM10-40H	-	BT20S
TPA15R063M22.0E05	TS45120I	H-TB2W		M-1000	-	CM10X30H	-	BT20S
TPA15R080M...	TS45120I	H-TB2W		M-1000	-	-	-	BT20S
TPA15R100M...	TS45120I	H-TB2W		M-1000	TMBA-M16H	TMBA-M16H	-	BT20S
TPA15R125M...	TS45120I	H-TB2W		M-1000	TMBA-M20H	TMBA-M20H	-	BT20M
TPA15R160M...	TS45120I	H-TB2W		M-1000	-	-	-	BT20M

Recommended clamping torque: CSTB-2.5 = 1.3 N·m, SR14-562/S = 3.5 N·m, TS45120I = 5 N·m

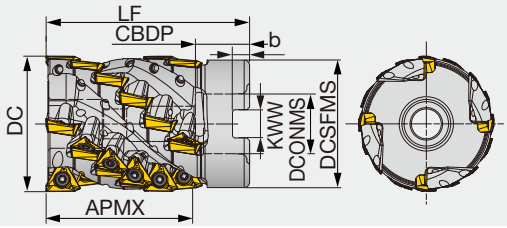
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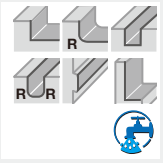
TLA10

Square shoulder mill for roughing, with screw clamp system

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°







Inch	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TLA10R200L213U0075A04	2.126	2.000	4	24	1.875	0.750	0.750	3.250	0.197	0.315	1.760	With	TO*T10...
TLA10R250L213U0100A04	2.126	2.500	4	24	2.375	1.000	1.024	3.250	0.236	0.374	2.960	With	TO*T10...

Metric	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TLA10R050L054M22.0E04	54	50	4	24	47	22	20	75	6.3	10.4	0.64	With	TO*T10...
TLA10R063L054M25.4-04	54	63	4	24	60	25.4	26	80	6	9.5	1.26	With	TO*T10...
TLA10R063L054M27.0E04	54	63	4	24	60	27	22	80	7	12.4	1.25	With	TO*T10...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Lubricant	Center bolt 1	Center bolt 2	Wrench	Shell locking bolt
TLA10R200L213U0075A04	SR14-562	M-1000	-	-	T-10D	SD06-102
TLA10R250L213U0100A04	SR14-562	M-1000	-	-	T-10D	SD-08-C8
TLA10R050L054M22.0E04	SR14-562	M-1000	CAP-CM10X1.5X55-H	-	T-10D	-
TLA10R063L...	SR14-562	M-1000	-	CAP-CM12X1.75X50	T-10D	-

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H153, Standard cutting conditions → H154 - H155

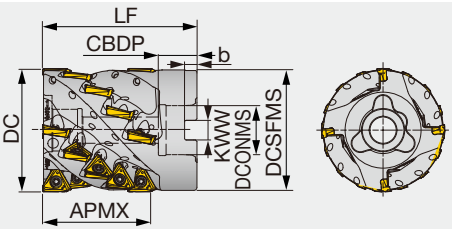
TUNG-TRI

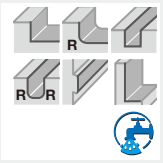
TLA15-M

Square shoulder mill for roughing, with screw clamp system

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Inch	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TLA15R300L275U0125A04M	2.756	3.000	4	20	2.937	1.250	1.260	3.940	0.315	0.500	4.560	With	TO*T15...
TLA15R400L326U0150A05M	3.268	4.000	5	20	3.875	1.500	1.260	4.375	0.394	0.626	10.00	With	TO*T15...

Metric	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TLA15R080L070M31.7-04M	70	80	4	20	78	31.75	32	100	8	12.7	2.29	With	TO*T15...
TLA15R080L070M32.0E04M	70	80	4	20	78	32	25	100	8	14.4	2.38	With	TO*T15...
TLA15R100L083M38.1-05M	83	100	5	30	98	38.1	38	110	10	15.9	4.24	With	TO*T15...
TLA15R100L083M40.0E05M	83	100	5	30	98	40	32	110	9	16.4	4.26	With	TO*T15...

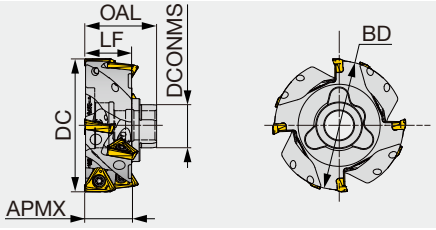
Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

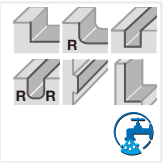
TLA15-S

Subunit for TLA15-M, square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Inch	APMX	DC	ZEFP	CICT	BD	DCONMS	OAL	LF	WT(lb)	Air hole	Insert
TLA15R300L110A04S	1.102	3.000	4	8	2.898	1.024	1.703	1.102	1.240	With	TO*T15...
TLA15R400L110A05S	1.102	4.000	5	10	3.882	1.299	1.814	1.102	2.440	With	TO*T15...

Metric	APMX	DC	ZEFP	CICT	BD	DCONMS	OAL	LF	WT(kg)	Air hole	Insert
TLA15R080L028-04S	28	80	4	8	77.6	27	43	28.2	0.65	With	TO*T15...
TLA15R100L028-05S	28	100	5	10	97.2	33	46	28	1.05	With	TO*T15...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Center bolt	Shell locking bolt
TLA15R300L275U0125A04M	TS45120I	H-TB2W	M-1000	BT20S	-	SD-10-54
TLA15R400L326U0150A05M	TS45120I	H-TB2W	M-1000	BT20S	-	SD12-B9
TLA15R080L**M	TS45120I	H-TB2W	M-1000	BT20S	CM16X75	-
TLA15R100L**M	TS45120I	H-TB2W	M-1000	BT20S	CM20X80	-
TLA15R**S	TS45120I	H-TB2W	M-1000	BT20S	-	-

Recommended clamping torque: 3.69 lbs·ft, 5 N·m

CENTER BOLT
(Optional parts)

No. of subunits	1 pc	2 pcs
TLA15R300..	SD10-04	SD10-B3
TLA15R400..	SD12-C1	SD12-B8

CENTER BOLT
(Optional parts)

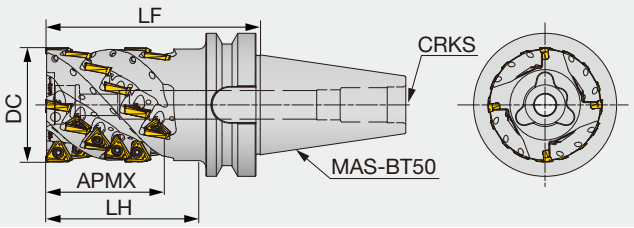
No. of subunits	1	2
TLA15R080L028-04S	CM16x120	CM16x140
TLA15R100L028-05S	CM20x120	CM20x150

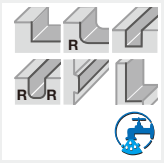
Reference pages: Inserts → H153, Standard cutting conditions → H154 - H155

TLA15-BT

Square shoulder mill for roughing, with BT tapered shank

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°



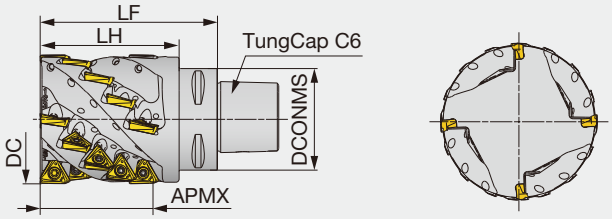


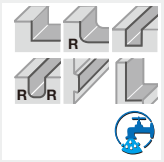
Metric	APMX	DC	ZEFP	CICT	LF	LH	WT(kg)	Air hole	CRKS	Insert
TLA15R080L083BT50-04M	83	80	4	24	150	107	6.29	With	M24	TO*T15...
TLA15R100L097BT50-05M	97	100	5	35	165	126.5	8.92	With	M24	TO*T15...

C-TLA

Square shoulder mill for roughing

GAMP = +13.5°~ +17°, GAMF = -5.5°~ -5°





Metric	APMX	DC	ZEFP	CICT	LF	LH	DCONMS	WT(kg)	Air hole	Insert
C6TLA15M063R03L100	55	63	3	12	100	78	63	2.13	With	TO*T15...
C6TLA15M080R04L110	70	80	4	20	110	86.2	63	3.17	With	TO*T15...

Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt
TLA15R080L083BT50-04M	TS45120I	H-TB2W	M-1000	BT20S	CAP-CM16×2.0×55
TLA15R100L097BT50-05M	TS45120I	H-TB2W	M-1000	BT20S	CAP-CM20×2.5×50
C6TLA15M0**R0*L1**	TS45120I	H-TB2W	-	BT20S	-

Recommended clamping torque: 5 N·m

CENTER BOLT

(Optional parts)

No. of subunits	1	2
TLA15R080L083BT50-04M	CAP-CM16×2.0×55	CM16x120
TLA15R100L097BT50-05M	CAP-CM20×2.5×50	CM20x80

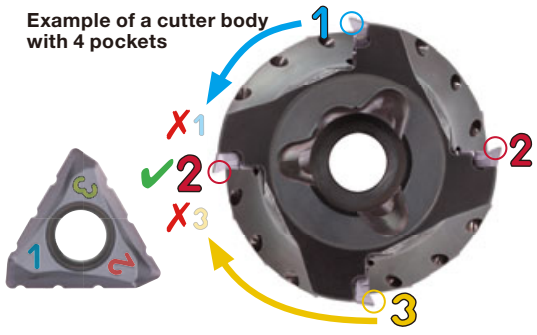
Caution for using NMJ chipbreaker

Insert with NMJ chipbreaker has a number marked on each corner.
DO NOT place the corners with the same number in adjacent flute as the cutter may be damaged.

For example, if you place the corner #1 in one flute, be sure to use #2 or #3 (and avoid #1) in the next one.

Item: TOMT150608PDER-NMJ

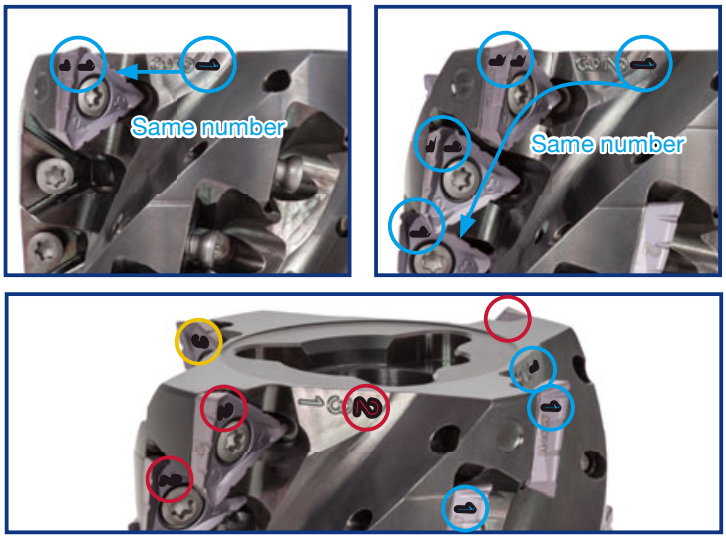
Example of a cutter body with 4 pockets



Reference pages: Inserts → H153, Standard cutting conditions → H154 - H155

Directions for setting NMJ inserts on roughing type bodies

1. Attach the insert on the cutter body so that the number on the working cutting edge matches the first number marked on the cutter body.
(See the image on the right.)
2. Attach the remaining inserts on the same flute with the same number marked on the working cutting edge.
3. Repeat steps 1 and 2 for the other flutes.
4. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.

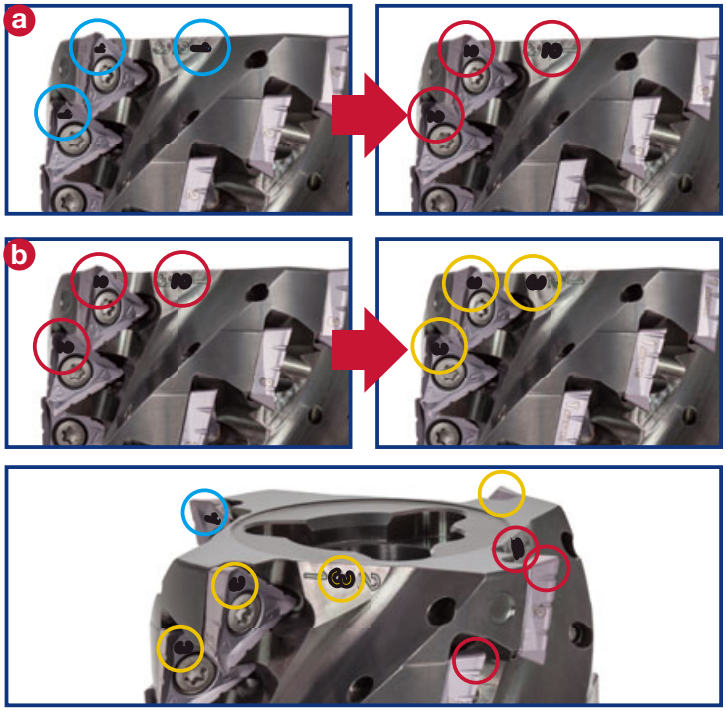


Directions for changing corners for inserts on roughing type bodies

1. a First time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the second number marked on the cutter body.
(See the image on the right.)
Ex: 1 ➡ 2
2 ➡ 3
3 ➡ 1

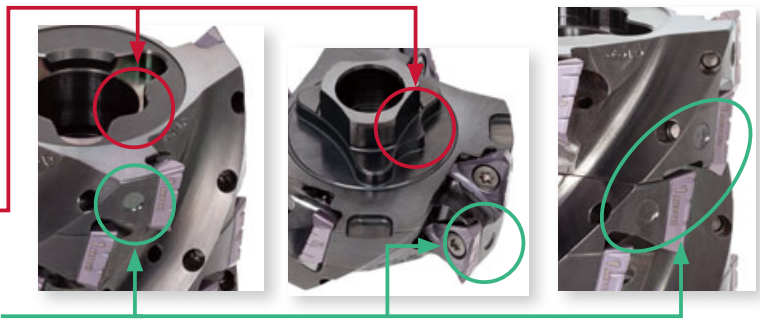
   b Second time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the last number marked on the cutter body.
(See the image on the right.)
Ex: 2 ➡ 3
3 ➡ 1
1 ➡ 2

2. Repeat step 1 for all inserts.
3. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.



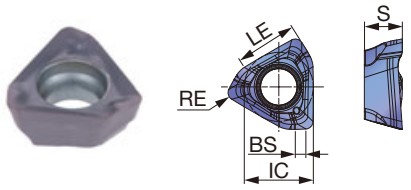
How to set a sub-unit

When setting a sub-unit on the main unit or another sub-unit, be sure to match the markings on the units. Sub-unit has a projection for error-proofing to avoid setting error.

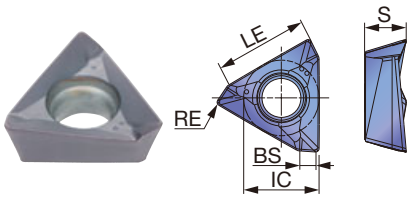


INSERTS

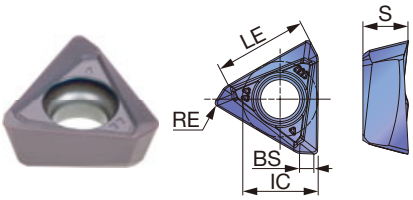
TOMT-MM



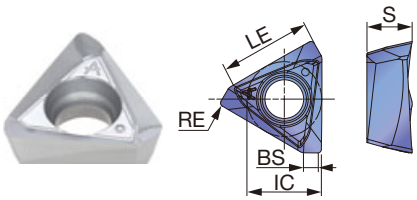
TOMT-MJ



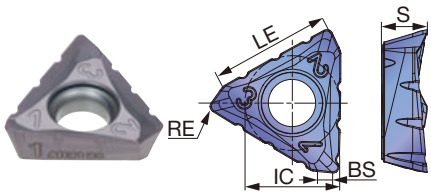
TOET-MJ (For precision machining)



TOGT-AJ



TOMT-NMJ



P	Steel	☆	★	★			☆				
M	Stainless		★	★			☆				
K	Cast iron	★				★					
N	Non-ferrous								★		
S	Superalloys	★	☆	★	★						
H	Hard materials				★						

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						Un-coated		LE	IC	S	BS
			AH120	AH3135	AH3225	AH8015	T1215	T3225	KS05F					
TOMT040204PXER-MM	0.016	0.138	●		●	●					0.142	0.157	0.087	0.024
TOMT040208PXER-MM	0.031	0.138	●		●	●					0.142	0.157	0.087	0.008
TOMT060302PDER-MJ	0.008	0.236	●	●	●						0.244	0.220	0.126	0.055
TOMT060304PDER-MJ	0.016	0.236	●	●	●			●			0.244	0.220	0.126	0.047
TOMT060308PDER-MJ	0.031	0.236	●	●	●		●	●			0.244	0.220	0.126	0.031
TOGT060304PDFR-AJ	0.016	0.236							●		0.244	0.220	0.130	0.047
TOGT060308PDFR-AJ	0.031	0.236							●		0.244	0.220	0.130	0.031
TOET060302PDER-MJ	0.008	0.236		●	●						0.244	0.220	0.130	0.051
TOET060304PDER-MJ	0.016	0.236		●	●						0.244	0.220	0.130	0.043
TOMT100404PDER-MJ	0.016	0.394	●	●	●			●			0.413	0.339	0.185	0.059
TOMT100408PDER-MJ	0.031	0.394	●	●	●		●	●			0.413	0.339	0.185	0.043
TOMT100416PDER-MJ	0.063	0.394	●	●	●						0.413	0.339	0.185	0.008
TOGT100404PDFR-AJ	0.016	0.394							●		0.413	0.339	0.205	0.059
TOGT100408PDFR-AJ	0.031	0.394							●		0.413	0.339	0.201	0.043
TOET100404PDER-MJ	0.016	0.394		●	●						0.413	0.339	0.201	0.059
TOET100408PDER-MJ	0.031	0.394		●	●						0.413	0.339	0.201	0.043
TOMT150604PDER-MJ	0.016	0.591	●	●	●			●			0.618	0.500	0.236	0.087
TOMT150608PDER-MJ	0.031	0.591	●	●	●		●	●			0.618	0.500	0.236	0.075
TOMT150616PDER-MJ	0.063	0.591	●	●	●						0.618	0.500	0.236	0.043
TOMT150620PDER-MJ	0.079	0.591	●	●	●						0.618	0.500	0.236	0.028
TOMT150608PDER-NMJ	0.031	0.591	●	●	●			●			0.618	0.500	0.236	0.075
TOGT150604PDFR-AJ	0.016	0.591							●		0.618	0.492	0.220	0.083
TOGT150608PDFR-AJ	0.031	0.591							●		0.618	0.492	0.217	0.071
TOET150604PDER-MJ	0.016	0.591		●	●						0.618	0.492	0.220	0.087
TOET150608PDER-MJ	0.031	0.591		●	●						0.618	0.492	0.220	0.075

● : Line up

Reference pages: Standard cutting conditions → H154 - H155

STANDARD CUTTING CONDITIONS

EPA04

ISO	Workpiece materials	Hardness	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.	- 200 HB	AH3225	326 - 820	0.002 - 0.005
P	Carbon steel and alloy steel 1055, etc.	- 300 HB	AH3225	326 - 755	0.002 - 0.005
P	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	AH3225	326 - 591	0.002 - 0.004
M	Stainless steel 304SS, etc.	- 200 HB	AH3225	295 - 656	0.002 - 0.004
K	Gray cast iron Class 25, etc.	150 - 250 HB	AH120	326 - 984	0.002 - 0.005
K	Ductile cast iron 65-45-12, etc.	150 - 250 HB	AH120	326 - 656	0.002 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	AH3225	66 - 197	0.002 - 0.004
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	AH8015	66 - 131	0.002 - 0.003
H	Hardened steel — H13, etc.	40 - 50 HRC	AH8015	164 - 492	0.002 - 0.003
H	Hardened steel — D2, etc.	50 - 60 HRC	AH8015	131 - 230	0.002 - 0.003

· Remove excessive chip accumulation with an air blast.
· For an operation when the depth of cut varies (ex.casting skin) or machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

T/E/HPA06, T/E/HPA10, T/EPA15

Approach angle: 7°-25° · 41°-45° · 60°-70° · 85°-88° · 90° · Others

ISO	Workpiece Materials	Hardness	Priority	Chipbreakers	Grades	T/E/HPA06 Cutting speed *Vc* (sfm)	T/E/HPA06 Feed per tooth *fz* (ipt)	T/E/HPA10 Cutting speed *Vc* (sfm)	T/E/HPA10 Feed per tooth *fz* (ipt)	T/EPA15 Cutting speed *Vc* (sfm)	T/EPA15 Feed per tooth: *fz* (ipt) MJ/AJ	T/EPA15 Feed per tooth: *fz* (ipt) NMJ
P	Low carbon steel 1015, etc.	- 200 HB	First Choice	MJ/NMJ	AH3225	330 - 726	0.0020 - 0.0059	330 - 825	0.0031 - 0.0079	330 - 990	0.0024 - 0.0087	0.0024 - 0.0059
P	Low carbon steel 1015, etc.	- 200 HB	Wear Resistance	MJ/NMJ	T3225	330 - 825	0.0031 - 0.0039	330 - 990	0.0031 - 0.0047	330 - 990	0.0031 - 0.0059	0.0031 - 0.0059
P	Carbon steel and alloy steel 1055, 4140, etc.	- 300 HB	First Choice	MJ/NMJ	AH3225	330 - 561	0.0020 - 0.0047	330 - 825	0.0024 - 0.0087	330 - 825	0.0024 - 0.0087	0.0024 - 0.0059
P	Carbon steel and alloy steel 1055, 4140, etc.	- 300 HB	Wear Resistance	MJ/NMJ	T3225	330 - 825	0.0020 - 0.0039	330 - 990	0.0020 - 0.0047	330 - 990	0.0020 - 0.0059	0.0020 - 0.0059
P	Prehardened and tool steel NAK80, PX5, H13, etc.	30 - 40 HRC	First Choice	MJ/NMJ	AH3225	330 - 396	0.0020 - 0.0047	330 - 660	0.0024 - 0.0087	330 - 660	0.0024 - 0.0087	0.0024 - 0.0059
P	Prehardened and tool steel NAK80, PX5, H13, etc.	30 - 40 HRC	Wear Resistance	MJ/NMJ	T3225	330 - 825	0.0020 - 0.0039	330 - 990	0.0020 - 0.0047	330 - 990	0.0020 - 0.0059	0.0020 - 0.0059
M	Stainless steel 304, etc.	- 200 HB	First Choice	MJ/NMJ	AH3135	264 - 495	0.0020 - 0.0059	264 - 660	0.0031 - 0.0079	297 - 660	0.0031 - 0.0079	0.0031 - 0.0059
M	Stainless steel 304, etc.	- 200 HB	Wear Resistance	MJ/NMJ	T3225	297 - 660	0.0020 - 0.0039	297 - 825	0.0020 - 0.0047	297 - 825	0.0020 - 0.0059	0.0020 - 0.0059
K	Gray cast iron No.250B, etc.	150 - 250 HB	First Choice	MJ/NMJ	AH120	330 - 660	0.0020 - 0.0059	330 - 825	0.0020 - 0.0059	462 - 825	0.0031 - 0.0098	0.0031 - 0.0059
K	Gray cast iron No.250B, etc.	150 - 250 HB	Wear Resistance	MJ	T1215	495 - 825	0.0020 - 0.0047	495 - 990	0.0031 - 0.0079	660 - 990	0.0031 - 0.0071	-
K	Ductile cast iron 65-45-12, etc.	150 - 250 HB	First Choice	MJ/NMJ	AH120	264 - 495	0.0020 - 0.0059	264 - 660	0.0031 - 0.0079	363 - 660	0.0031 - 0.0098	0.0031 - 0.0059
K	Ductile cast iron 65-45-12, etc.	150 - 250 HB	Wear Resistance	MJ	T1215	330 - 660	0.0020 - 0.0047	429 - 825	0.0020 - 0.0059	495 - 825	0.0031 - 0.0071	-
N	Aluminum Si < 13%	-	First Choice	AJ	KS05F	990 - 2970	0.0031 - 0.0087	990 - 3300	0.0031 - 0.0087	990 - 3300	0.0031 - 0.0087	-
N	Aluminum Si ≥ 13%	-	First Choice	AJ	KS05F	330 - 660	0.0031 - 0.0087	330 - 660	0.0031 - 0.0087	330 - 660	0.0031 - 0.0087	-
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First Choice	MJ/NMJ	AH3135	66 - 165	0.0020 - 0.0039	66 - 198	0.0020 - 0.0039	66 - 198	0.0031 - 0.0059	0.0031 - 0.0059
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First Choice	MJ/NMJ	AH120	66 - 1155	0.0012 - 0.0031	66 - 132	0.0020 - 0.0051	66 - 132	0.0028 - 0.0059	0.0028 - 0.0059

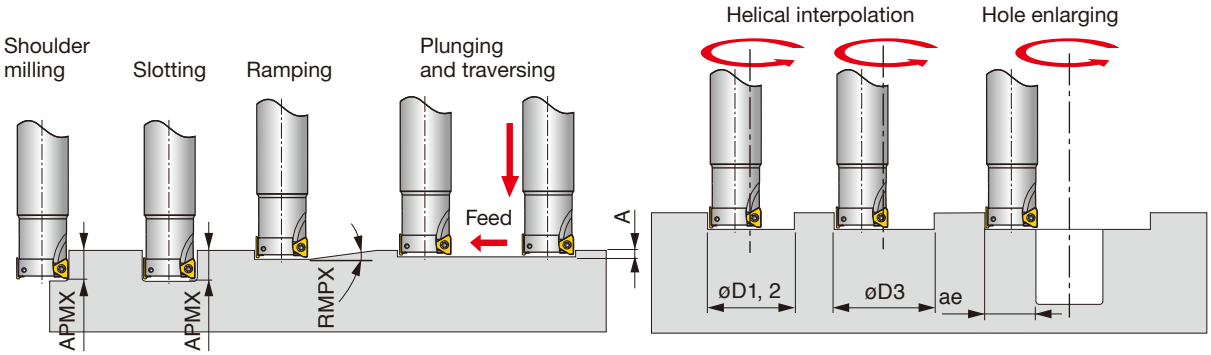
· When you use the NMJ chipbreaker, please set up the feed less than 0.006 ipt.
· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions maybe limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

TLA (Roughing type)

ISO	Workpiece Materials	Hardness	Priority	Chip-breakers	Grades	TLA10		TLA15		
						Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)	
									MJ/AJ	NMJ
P	Low carbon steel 1015, etc	- 200 HB	First Choice	MJ/NMJ	AH3225	330 - 825	0.0031 - 0.0079	330 - 990	0.0024 - 0.0087	0.0024 - 0.0059
			Wear Resistance	MJ/NMJ	T3225	330 - 990	0.0031 - 0.0047	330 - 990	0.0031 - 0.0059	0.0031 - 0.0059
	Carbon steel and alloy steel 1055, 4140, etc.	- 300 HB	First Choice	MJ/NMJ	AH3225	330 - 825	0.0024 - 0.0087	330 - 825	0.0024 - 0.0087	0.0024 - 0.0059
			Wear Resistance	MJ/NMJ	T3225	330 - 990	0.0020 - 0.0047	330 - 990	0.0020 - 0.0059	0.0020 - 0.0059
	Prehardened and tool steel NAK80, PX5, H13, etc	30 - 40 HRC	First Choice	MJ/NMJ	AH3225	330 - 660	0.0024 - 0.0087	330 - 660	0.0024 - 0.0087	0.0024 - 0.0059
			Wear Resistance	MJ/NMJ	T3225	330 - 990	0.0020 - 0.0047	330 - 990	0.0020 - 0.0059	0.0020 - 0.0059
M	Stainless steel 304, etc.	- 200 HB	First Choice	MJ/NMJ	AH3135	264 - 660	0.0031 - 0.0079	297 - 660	0.0031 - 0.0079	0.0031 - 0.0059
			Wear Resistance	MJ/NMJ	T3225	297 - 825	0.0020 - 0.0047	297 - 825	0.0020 - 0.0059	0.0020 - 0.0059
K	Gray cast iron No.250B, etc.	150 - 250 HB	First Choice	MJ/NMJ	AH120	330 - 825	0.0020 - 0.0059	462 - 825	0.0031 - 0.0098	0.0031 - 0.0059
			Wear Resistance	MJ	T1215	495 - 990	0.0031 - 0.0079	660 - 990	0.0031 - 0.0071	-
	Ductile cast iron 65-45-12, etc.	150 - 250 HB	First Choice	MJ/NMJ	AH120	264 - 660	0.0031 - 0.0079	363 - 660	0.0031 - 0.0098	0.0031 - 0.0059
			Wear Resistance	MJ	T1215	429 - 825	0.0020 - 0.0059	495 - 825	0.0031 - 0.0071	-
N	Aluminum Si < 13%	-	First Choice	AJ	KS05F	990 - 3300	0.0031 - 0.0087	990 - 3300	0.0031 - 0.0087	-
	Aluminum Si ≥ 13%	-	First Choice	AJ	KS05F	330 - 660	0.0031 - 0.0087	330 - 660	0.0031 - 0.0087	-
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First Choice	MJ/NMJ	AH3135	66 - 198	0.0020 - 0.0039	66 - 198	0.0031 - 0.0059	0.0031 - 0.0059
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First Choice	MJ/NMJ	AH120	66 - 132	0.0020 - 0.0051	66 - 132	0.0028 - 0.0059	0.0028 - 0.0059

· When using NMJ chipbreaker, please set up the feed not to exceed 0.006 ipt.

APPLICATION RANGE



		Max. depth of cut	Max. ramping angle	Max. plunging depth	Min. machining diameter	Max. machining diameter		Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2	øD3*	ae
EPA06R050U…	0.500	0.236	5°	0.024	0.748	0.984	0.882	0.48
EPA06R063U…	0.625	0.236	4°	0.024	0.984	1.234	1.132	0.605
EPA06R075U…	0.750	0.236	3°	0.024	1.24	1.484	1.382	0.73
EPA06R100U…	1.000	0.236	2°	0.024	1.752	1.984	1.882	0.98
TPA06R200U…	2.000	0.236	0.7°	0.024	3.74	3.984	3.882	1.98
EPA10R100U…	1.000	0.394	2°	0.024	1.689	1.984	1.882	0.98
EPA10R125U…	1.250	0.394	2°	0.024	2.189	2.484	2.382	1.23
EPA10R150U…	1.500	0.394	1.4°	0.024	2.689	2.984	2.882	1.48
TPA10R200U…	2.000	0.394	0.8°	0.024	3.689	3.984	3.882	1.98
TPA10R250U…	2.500	0.394	0.7°	0.024	4.689	4.984	4.882	2.48
TPA10R300U…	3.000	0.394	0.6°	0.024	5.689	5.984	5.882	2.98
TPA10R400U…	4.000	0.394	0.5°	0.024	7.689	7.984	7.882	3.98
EPA15R150U…	1.500	0.59	2.3°	0.031	2.547	2.969	2.823	1.461
E/TPA15R200U…	2.000	0.59	1.7°	0.031	3.547	3.969	3.823	1.961
TPA15R250U…	2.500	0.59	1.4°	0.031	4.547	4.969	4.823	2.461
TPA15R300U…	3.000	0.59	1°	0.031	5.547	5.969	5.823	2.961
TPA15R400U…	4.000	0.59	0.8°	0.031	7.547	7.969	7.823	3.961
TPA15R500U…	5.000	0.59	0.6°	0.031	9.547	9.969	9.823	4.961
TPA15R600U…	6.000	0.59	0.5°	0.031	11.547	11.969	11.823	5.961

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

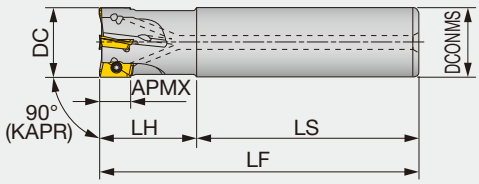
* Flat bottom hole
Note: Corner RE for dimensions of øD1, øD2 and øD3: RE = 0.016" for EPA04, T/E/HPA06, T/E/HPA10 and RE = 0.031" for T/EPA15.

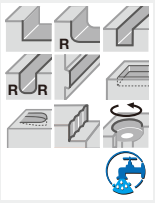
EPS11

High precision square shoulder endmill, shank type, with screw clamp system

A.R. = +8.7°~ +18°, R.R. = –5.3°~ –19.4°







Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPS11050RLU	0.417	0.500	1	0.625	3.750	1.250	5.000	0.350	With	AS*T11T3...
EPS11050RSU	0.417	0.500	1	0.625	2.362	0.984	3.346	0.240	With	AS*T11T3...
EPS11062RLU	0.417	0.625	2	0.625	4.250	1.500	5.750	0.440	With	AS*T11T3...
EPS11062RSU	0.417	0.625	2	0.625	2.362	0.984	3.346	0.240	With	AS*T11T3...
EPS11075RLU	0.417	0.750	2	0.750	5.250	2.000	7.250	0.790	With	AS*T11T3...
EPS11075RSBU	0.417	0.750	3	0.750	2.362	1.181	3.543	0.370	With	AS*T11T3...
EPS11100RLU	0.417	1.000	2	1.000	5.750	2.750	8.500	1.700	With	AS*T11T3...
EPS11100RSBU	0.417	1.000	4	1.000	2.362	1.378	3.740	0.700	With	AS*T11T3...
EPS11100RSBU-3/4	0.417	1.000	4	0.750	2.360	1.378	3.738	0.480	With	AS*T11T3...
EPS11125RLU	0.417	1.250	2	1.250	7.000	3.000	10.000	3.190	With	AS*T11T3...
EPS11125RSBU	0.417	1.250	5	1.250	2.362	1.378	3.740	1.120	With	AS*T11T3...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
EPS11050RLU	CSPB-2.5	M-1000	IP-8D
EPS11050RSU	CSPB-2.5S	M-1000	IP-8D
EPS11062RLU	CSPB-2.5	M-1000	IP-8D
EPS11062RSU	CSPB-2.5S	M-1000	IP-8D
EPS11075RLU	CSPB-2.5	M-1000	IP-8D
EPS11075RSBU	CSPB-2.5S	M-1000	IP-8D
EPS11100RLU	CSPB-2.5	M-1000	IP-8D
EPS11100RSBU	CSPB-2.5	M-1000	IP-8D
EPS11100RSBU-3/4	CSPB-2.5	M-1000	IP-8D
EPS11125RLU	CSPB-2.5	M-1000	IP-8D
EPS11125RSBU	CSPB-2.5	M-1000	IP-8D

Recommended clamping torque: 0.96 lbs·ft

Reference pages: Inserts → H166 - H167

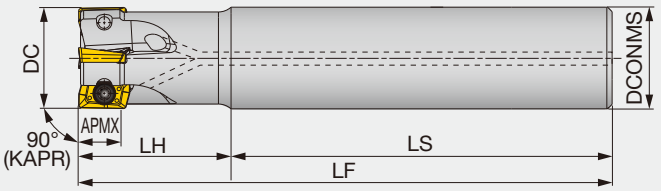
TUNGREC

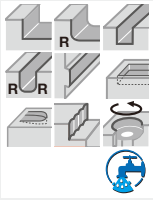
EPO07/11/18

High precision square shoulder endmill, shank type, with screw clamp system

EPO07: GAMP = +7°, GAMF = +13°~ +18°
EPO11: GAMP = +8.7° ~ +18°, GAMF = -5.3°~ -19.4°
EPO18: GAMP = +14° ~ +17°, GAMF = +22°~ +31°







Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPO07R050U0050-02	0.276	0.500	2	0.500	2.250	0.750	3.000	0.140	With	AO*T0702...
EPO07R063U0063-04	0.276	0.625	4	0.625	2.563	0.937	3.500	0.250	With	AO*T0702...
EPO07R075U0075-05	0.276	0.750	5	0.750	2.875	1.125	4.000	0.410	With	AO*T0702...
EPO07R100U0075-03	0.276	1.000	3	0.750	2.000	1.500	3.500	0.400	With	AO*T0702...
EPO07R100U0100W07	0.276	1.000	7	1.000	2.281	1.500	3.781	0.680	With	AO*T0702...
EPO18R100U0100W02	0.657	1.000	2	1.000	2.250	1.750	4.000	0.730	With	AO*T1805...
EPO18R100U0100W02L	0.657	1.000	2	1.000	2.250	2.750	5.000	0.910	With	AO*T1805...
EPO18R125U0125W03	0.657	1.250	3	1.250	2.250	2.250	4.500	1.320	With	AO*T1805...
EPO18R125U0125W03L	0.657	1.250	3	1.250	2.250	4.250	6.500	1.880	With	AO*T1805...
EPO18R150U0125W03L	0.657	1.500	3	1.250	2.250	4.250	6.500	2.420	With	AO*T1805...
EPO18R150U0125W04	0.657	1.500	4	1.250	2.250	2.250	4.500	1.460	With	AO*T1805...
EPO18R200U0125W05	0.657	2.000	5	1.250	2.250	2.250	4.500	1.680	With	AO*T1805...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO07R012M12.0-02	7	12	2	12	50	18	68	0.1	With	AO*T0702...
EPO07R012M12.0-02L	7	12	2	12	95	30	125	0.1	With	AO*T0702...
EPO11R012M16.0-01	10.6	12	1	16	60	25	85	0.11	With	AS*T11T3...
EPO11R012M16.0-01L	10.6	12	1	16	95	30	125	0.16	With	AS*T11T3...
EPO07R016M12.0-02	7	16	2	12	50	20	70	0.1	With	AO*T0702...
EPO07R016M16.0-02L	7	16	2	16	105	40	145	0.2	With	AO*T0702...
EPO07R016M16.0-04	7	16	4	16	60	24	84	0.1	With	AO*T0702...
EPO11R016M16.0-02	10.6	16	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R016M16.0-02L	10.6	16	2	16	105	40	145	0.2	With	AS*T11T3...
EPO07R018M16.0-02L	7	18	2	16	105	40	145	0.2	With	AO*T0702...
EPO07R018M16.0-04	7	18	4	16	60	24	84	0.1	With	AO*T0702...
EPO11R018M16.0-02	10.6	18	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R018M16.0-02L	10.6	18	2	16	105	40	145	0.21	With	AS*T11T3...
EPO07R020M16.0-03	7	20	3	16	60	30	90	0.1	With	AO*T0702...
EPO07R020M20.0-03L	7	20	3	20	135	50	185	0.4	With	AO*T0702...
EPO07R020M20.0-05	7	20	5	20	70	30	100	0.2	With	AO*T0702...
EPO11R020M20.0-02	10.6	20	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R020M20.0-02L	10.6	20	2	20	135	50	185	0.41	With	AS*T11T3...
EPO11R020M20.0-03	10.6	20	3	20	70	30	100	0.21	With	AS*T11T3...
EPO07R022M20.0-05	7	22	5	20	70	30	100	0.2	With	AO*T0702...
EPO11R022M20.0-02	10.6	22	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R022M20.0-02L	10.6	22	2	20	155	30	185	0.42	With	AS*T11T3...
EPO11R022M20.0-03	10.6	22	3	20	70	30	100	0.22	With	AS*T11T3...
EPO07R025M20.0-03	7	25	3	20	60	35	95	0.3	With	AO*T0702...
EPO07R025M25.0-03L	7	25	3	25	150	70	220	0.7	With	AO*T0702...
EPO07R025M25.0-07	7	25	7	25	80	35	115	0.4	With	AO*T0702...
EPO11R025M25.0-02L	10.6	25	2	25	150	70	220	0.76	With	AS*T11T3...
EPO11R025M25.0-03	10.6	25	3	25	80	35	115	0.39	With	AS*T11T3...
EPO11R025M25.0-04	10.6	25	4	25	80	35	115	0.38	With	AS*T11T3...
EPO18R025M25.0-02	16.7	25	2	25	80	35	115	0.4	With	AO*T1805...
EPO18R025M25.0-02L	16.7	25	2	25	150	70	220	0.8	With	AO*T1805...
EPO07R028M25.0-03L	7	28	3	25	150	70	220	0.7	With	AO*T0702...
EPO07R028M25.0-07	7	28	7	25	80	35	115	0.4	With	AO*T0702...
EPO11R028M25.0-02L	10.6	28	2	25	185	35	220	0.8	With	AS*T11T3...
EPO11R028M25.0-03	10.6	28	3	25	80	35	115	0.4	With	AS*T11T3...
EPO11R028M25.0-04	10.6	28	4	25	80	35	115	0.39	With	AS*T11T3...
EPO18R028M25.0-02	16.7	28	2	25	80	35	115	0.4	With	AO*T1805...
EPO18R028M25.0-02L	16.7	28	2	25	150	70	220	0.8	With	AO*T1805...
EPO11R030M25.0-02L	10.6	30	2	25	180	40	220	0.8	With	AS*T11T3...
EPO11R030M25.0-03	10.6	30	3	25	80	40	120	0.43	With	AS*T11T3...
EPO11R030M25.0-04	10.6	30	4	25	80	40	120	0.42	With	AS*T11T3...
EPO18R030M32.0-02	16.7	30	2	32	80	40	120	0.6	With	AO*T1805...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO18R030M32.0-02L	16.7	30	2	32	175	80	255	1.4	With	AO*T1805...
EPO18R030M32.0-03	16.7	30	3	32	80	40	120	0.6	With	AO*T1805...
EPO11R032M32.0-02L	10.6	32	2	32	175	80	255	1.48	With	AS*T11T3...
EPO11R032M32.0-03	10.6	32	3	32	80	40	120	0.68	With	AS*T11T3...
EPO11R032M32.0-05	10.6	32	5	32	80	40	120	0.67	With	AS*T11T3...
EPO18R032M32.0-02	16.7	32	2	32	80	40	120	0.7	With	AO*T1805...
EPO18R032M32.0-02L	16.7	32	2	32	175	80	255	1.5	With	AO*T1805...
EPO18R032M32.0-03	16.7	32	3	32	80	40	120	0.6	With	AO*T1805...
EPO11R035M32.0-02L	10.6	35	2	32	215	40	255	1.49	With	AS*T11T3...
EPO11R035M32.0-03	10.6	35	3	32	80	40	120	0.69	With	AS*T11T3...
EPO11R035M32.0-05	10.6	35	5	32	80	40	120	0.67	With	AS*T11T3...
EPO18R035M32.0-02	16.7	35	2	32	80	40	120	0.7	With	AO*T1805...
EPO18R035M32.0-02L	16.7	35	2	32	175	80	255	1.5	With	AO*T1805...
EPO18R035M32.0-03	16.7	35	3	32	80	40	120	0.7	With	AO*T1805...
EPO11R040M32.0-02L	10.6	40	2	32	205	50	255	1.53	With	AS*T11T3...
EPO11R040M32.0-04	10.6	40	4	32	80	40	120	0.72	With	AS*T11T3...
EPO11R040M32.0-06	10.6	40	6	32	80	40	120	0.71	With	AS*T11T3...
EPO18R040M32.0-02L	16.7	40	2	32	205	50	255	1.6	With	AO*T1805...
EPO18R040M32.0-03	16.7	40	3	32	80	40	120	0.7	With	AO*T1805...
EPO18R040M32.0-04	16.7	40	4	32	80	40	120	0.7	With	AO*T1805...
EPO18R040M42.0-02L	16.7	40	2	42	210	100	310	3	With	AO*T1805...
EPO11R050M32.0-05	10.6	50	5	32	80	40	120	0.83	With	AS*T11T3...
EPO11R050M32.0-07	10.6	50	7	32	80	40	120	0.82	With	AS*T11T3...
EPO11R050M42.0-03L	10.6	50	3	42	310	50	360	3.78	With	AS*T11T3...
EPO18R050M32.0-03	16.7	50	3	32	80	40	120	0.8	With	AO*T1805...
EPO18R050M32.0-05	16.7	50	5	32	80	40	120	0.8	With	AO*T1805...
EPO18R050M42.0-03L	16.7	50	3	42	310	50	360	3.8	With	AO*T1805...
EPO18R063M32.0-04	16.7	63	4	32	80	45	125	1	With	AO*T1805...
EPO18R063M32.0-06	16.7	63	6	32	80	45	125	1.1	With	AO*T1805...
EPO18R063M42.0-03L	16.7	63	3	42	310	50	360	4	With	AO*T1805...

EPO07:
- The APMX is the diameter when using MJ chipbreaker.
- The DC is the diameter when using MJ or AJ chipbreaker. With HJ chipbreaker, the tool diameter is (DC + 0.024" [0.6 mm]).
- The LF and L are the lengths when using MJ chipbreaker. With AJ chipbreaker, the length is (LF, L + 0.004" [0.1 mm]).
  With HJ chipbreaker, the length is (LF, L + 0.020" [0.5 mm]).

EPO11:
- The APMX is the diameter when using MJ, MS and AJ chipbreaker.

EPO18:
The DC is the diameter when using MJ chipbreaker. With AJ chipbreaker, the tool diameter is (DC above + 0.008" [0.2 mm]).

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
EPO07R050U0050-02 EPO07R012M...	SR 10503833-S	-	T-7DB
EPO07R063 - 100U... EPO07R016 - 028M...	CSTB-2.5L046	-	T-7DB
EPO11R012 - 022M...	CSPB-2.5S	M-1000	IP-8D
EPO11R025 - 050M...	CSPB-2.5	M-1000	IP-8D
EPO18R100U... EPO18R025 - 030M...	CSTB-4L085	-	T-15DB
EPO18R125 - 200U... EPO18R032 - 050M...	CSTB-4L093	-	T-15DB
EPO18R063M...	CSTB-4L120	-	T-15DB

Recommended clamping torque: SR 10503833-S, CSTB-2.5L046 = 0.66 lbs·ft, 0.9 N·m, CSPB-2.5, CSPB-2.5S = 0.96 lbs·ft, 1.3 N·m, CSTB-4L085, CSTB-4L093, CSTB-4L120 = 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H166 - H167

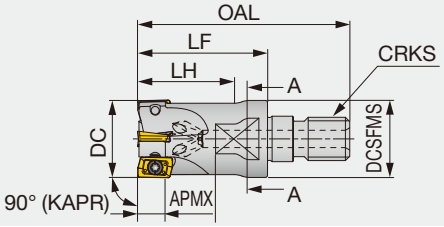
TUNGREC

HPO07/11-M

High precision square shoulder endmill, modular type (TungFlex)

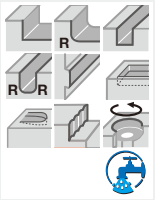
HPO07-M: GAMP = +7°, GAMF = +13°~ +18°
HPO11-M: GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°







A-A cross section



Metric	APMX	DC	CICT	OAL	LF	LH	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPO07R012MM06-02	7	12	2	39.5	25	-	7	9.8	M6	0.01	With	AO*T0702...
HPO07R012MM08-02	7	12	2	42	25	20	10	12.8	M8	0.02	With	AO*T0702...
HPO07R016MM08-04	7	16	4	42	25	-	10	12.8	M8	0.03	With	AO*T0702...
HPO07R016MM10-04	7	16	4	49	30	20	15	17.8	M10	0.05	With	AO*T0702...
HPO07R020MM10-05	7	20	5	49	30	-	15	17.8	M10	0.06	With	AO*T0702...
HPO11R020MM10-02	10.6	20	2	49	30	-	15	17.8	M10	0.06	With	AS*T11T3...
HPO07R025MM12-07	7	25	7	57	35	-	17	20.8	M12	0.1	With	AO*T0702...
HPO11R025MM12-03	10.6	25	3	57	35	-	17	20.8	M12	0.1	With	AS*T11T3...
HPO11R032MM16-03	10.6	32	3	63	40	-	22	28.8	M16	0.2	With	AS*T11T3...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
HPO07R012MM0*-02	SR 10503833-S	M-1000	T-7DB
HPO07R016 - 025...	CSTB-2.5L046	M-1000	T-7DB
HPO11R020MM10-02	CSPB-2.5S	M-1000	IP-8D
HPO11R025, 032...	CSPB-2.5	M-1000	IP-8D

Recommended clamping torque: SR 10503833-S, CSTB-2.5L046 = 0.9 N·m, CSPB-2.5, CSPB-2.5S = 1.3 N·m

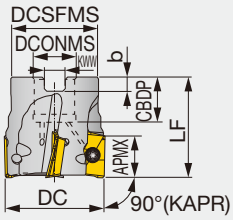
Reference pages: Inserts → H166 - H167, TungFlex → H038 - H039

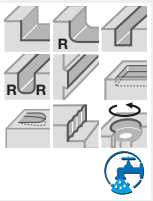
TPS11

High precision square shoulder mill, with screw clamp system

A.R. = +8.7°~ +18°, R.R. = –5.3°~ –19.4°







Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TPS11200RBU	0.417	2.000	7	1.693	0.750	0.750	1.575	0.197	0.315	0.88	With	AS*T11T3...
TPS11300RBU	0.417	3.000	10	2.283	1.000	1.024	1.969	0.236	0.374	2.64	With	AS*T11T3...
TPS11400RBU	0.417	4.000	11	3.150	1.500	1.457	2.480	0.394	0.626	5.29	With	AS*T11T3...

SPARE PARTS






Designation	Clamping screw	Lubricant	Wrench	Shell locking bolts (Optional parts)
TPS11200RBU	CSPB-2.5	M-1000	IP-8D	(C0.375x1.125H)
TPS11300RBU	CSPB-2.5	M-1000	IP-8D	(C0.500x1.375H)
TPS11400RBU	CSPB-2.5	M-1000	IP-8D	(TMBA-0.750H)

Recommended clamping torque: 0.96 lbs·ft

Reference pages: Inserts → H166 - H167

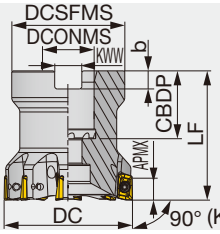
TUNGREC

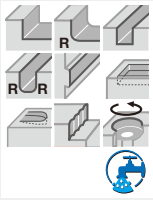
TPO07/11/18

High precision square shoulder mill, with screw clamp system

TPO07: GAMP = +7°, GAMF = +13°~ +18°
TPO11: GAMP = +8.7° ~ +18°, GAMF = -5.3°~ -19.4°
TPO18: GAMP = +14° ~ +17°, GAMF = +22°~ +31°







Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPO07R200U0075A12	0.276	2.000	12	1.693	1.575	0.750	0.789	0.315	0.197	0.660	With	AO*T0702...	A
TPO18R200U0075A05	0.657	2.000	5	1.625	1.570	0.750	0.750	0.315	0.197	0.780	With	AO*T1805...	A
TPO18R250U0075A06	0.657	2.500	6	2.125	1.570	0.750	0.750	0.315	0.197	1.320	With	AO*T1805...	A
TPO18R300U0100A07	0.657	3.000	7	2.250	1.750	1.000	1.000	0.374	0.236	1.890	With	AO*T1805...	A
TPO18R400U0150A08	0.657	4.000	8	3.000	2.000	1.500	1.060	0.630	0.354	3.140	Without	AO*T1805...	B
TPO18R500U0150A09	0.657	5.000	9	4.000	2.000	1.500	1.060	0.630	0.354	6.270	Without	AO*T1805...	B
TPO18R600U0200A10	0.657	6.000	10	4.750	2.000	2.000	1.060	0.748	0.394	8.370	Without	AO*T1805...	B

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPO07R032M16.0E08	7	32	8	30	40	16	21	8.4	5.6	0.1	With	AO*T0702...
TPO07R040M16.0E10	7	40	10	35	40	16	21	8.4	5.6	0.2	With	AO*T0702...
TPO07R050M22.0E12	7	50	12	41	40	22	22	10.4	6.3	0.3	With	AO*T0702...
TPO11R040M16.0E06	10.6	40	6	35	40	16	18	8.4	5.6	0.21	With	AS*T11T3...
TPO18R040M16.0-04	16.7	40	4	35	40	16	18	8.2	5.6	0.2	With	AO*T1805...
TPO18R040M16.0E04	16.7	40	4	35	40	16	18	8.4	5.6	0.2	With	AO*T1805...
TPO11R050M22.0E07	10.6	50	7	45	40	22	20	10.4	6.3	0.35	With	AS*T11T3...
TPO18R050M22.0-05	16.7	50	5	41	40	22	20	10	6	0.2	With	AO*T1805...
TPO18R050M22.0E05	16.7	50	5	41	40	22	20	10.4	6.3	0.3	With	AO*T1805...
TPO11R063M22.0E08	10.6	63	8	47	45	22	20	10.4	6.3	0.59	With	AS*T11T3...
TPO18R063M22.0-06	16.7	63	6	41	40	22	20	10	6	0.4	With	AO*T1805...
TPO18R063M22.0E06	16.7	63	6	41	40	22	20	10.4	6.3	0.5	With	AO*T1805...
TPO11R080M25.4-10	10.6	80	10	58	50	25.4	26	9.5	6	1.07	With	AS*T11T3...
TPO11R080M27.0E10	10.6	80	10	58	50	27	22	12.4	7	1.05	With	AS*T11T3...
TPO18R080M25.4-07	16.7	80	7	46	50	25.4	26	9.5	6	0.8	With	AO*T1805...
TPO18R080M27.0E07	16.7	80	7	50	50	27	22	12.4	7	10	With	AO*T1805...
TPO11R100M31.75-11	10.6	100	11	70	63	31.75	32	12.7	8	1.95	With	AS*T11T3...
TPO11R100M32.0E11	10.6	100	11	70	63	32	25	14.4	8	2.01	With	AS*T11T3...
TPO18R100M31.7-08	16.7	100	8	60	50	31.75	32	12.7	8	1.2	With	AO*T1805...
TPO18R100M32.0E08	16.7	100	8	60	50	32	28.5	14.4	8	1.4	With	AO*T1805...
TPO18R125M38.1-09	16.7	125	9	80	63	38.1	38	15.9	10	2.8	With	AO*T1805...
TPO18R125M40.0E09	16.7	125	9	71	63	40	32	16.4	9	2.8	With	AO*T1805...
TPO18R160M40.0E10	16.7	160	10	100	63	40	29	16.4	9	4.9	Without	AO*T1805...
TPO18R160M50.8-10	16.7	160	10	100	63	50.8	46	19	11	4.9	Without	AO*T1805...

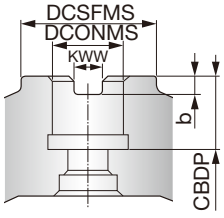
TPO07:
- The APMX is the diameter when using MJ chipbreaker.
- The DC is the diameter when using MJ or AJ chipbreaker. With HJ chipbreaker, the tool diameter is (DC + 0.024" [0.6 mm]).
- The LF and L are the lengths when using MJ chipbreaker. With AJ chipbreaker, the length is (LF, L + 0.004" [0.1 mm]). With HJ chipbreaker, the length is (LF, L + 0.020" [0.5 mm]).

TPO11:
- The APMX is the diameter when using MJ, MS and AJ chipbreaker.

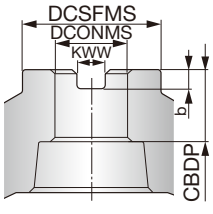
TPO18:
The DC is the diameter when using MJ chipbreaker. With AJ chipbreaker, the tool diameter is (DC above + 0.008" [0.2 mm]).

Arbor type

Arbor type A



Arbor type B



Reference pages: Inserts → H166 - H167

INCH SPARE PARTS







Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)	Wrench
TPO07R200U0075A12	CSTB-2.5L046	-	-	(C0.375X1.125H)	T-7DB
TPO18R200..., 250...	CSTB-4L093	H-TBS	BT15M	(C0.375X1.125H)	-
TPO18R300...	CSTB-4L120	H-TBS	BT15M	(C0.500X1.375H)	-
TPO18R400..., 500...	CSTB-4L120	H-TBS	BT15M	(TMBA-0.750H)	-
TPO18R600...	CSTB-4L120	H-TBS	BT15M	-	-

Recommended clamping torque：CSTB-2.5L046 = 0.66 lbs·ft, CSTB-4L093, CSTB-4L120 = 2.58 lbs·ft

METRIC SPARE PARTS









Designation	Clamping screw	Lubricant	Grip	Shell locking bolt 1	Shell locking bolt 2	Wrench	Torx bit
TPO07R032, 040...	CSTB-2.5L046	-	-	-	CM8X30H	T-7DB	-
TPO07R050M22.0E12	CSTB-2.5L046	-	-	-	CM10X30H	T-7DB	-
TPO11R040M16.0E06	CSPB-2.5	M-1000	-	-	CM8X30H	IP-8D	-
TPO11R050M, 063M...	CSPB-2.5	M-1000	-	-	CM10X30H	IP-8D	-
TPO11R080M25.4-10 TPO11R080M27.0E10	CSPB-2.5	M-1000	-	-	CM12X30H	IP-8D	-
TPO11R100M31.75-11	CSPB-2.5	M-1000	-	-	CM16X40H	IP-8D	-
TPO11R100M32.0E11	CSPB-2.5	M-1000	-	-	CM16X40H	IP-8D	-
TPO18R040M...	CSTB-4L093	-	H-TBS	-	FSHM8-30H	-	BT15M
TPO18R050M..., 063M...	CSTB-4L093	-	H-TBS	-	CM10X30H	-	BT15M
TPO18R080M...	CSTB-4L120	-	H-TBS	-	CM12X30H	-	BT15M
TPO18R100M...	CSTB-4L120	-	H-TBS	TMBA-M16H	-	-	BT15M
TPO18R125M...	CSTB-4L120	-	H-TBS	TMBA-M20H	-	-	BT15M
TPO18R160M...	CSTB-4L120	-	H-TBS	-	-	-	BT15M

Recommended clamping torque：CSTB-2.5L046 = 0.9 N·m, CSPB-2.5 = 1.3 N·m, CSTB-4L093, CSTB-4L120 = 3.5 N·m

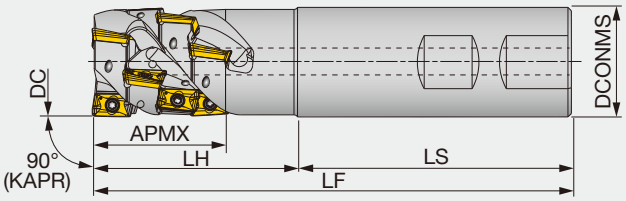
TUNGREC

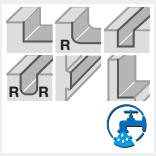
ELS11

High efficiency roughing endmill, shank type

GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°







Inch	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
ELS11R100U0100W02	1.197	1.000	2	6	1.000	2.250	1.500	3.750	0.670	With	AS*T11T3...
ELS11R125U0125W03	1.535	1.250	3	12	1.250	2.250	2.250	4.500	1.330	With	AS*T11T3...
ELS11R150U0125W03	1.575	1.500	3	12	1.250	2.329	2.171	4.500	1.330	With	AS*T11T3...

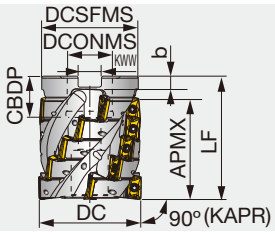
Metric	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
ELS11R025M25.0W02	30.4	25	2	6	25	80	40	120	0.4	With	AS*T11T3...
ELS11R032M32.0W03	39.4	32	3	12	32	80	60	140	0.8	With	AS*T11T3...
ELS11R040M42.0W03	40	40	3	12	42	90	60	150	1.4	With	AS*T11T3...

TLS11

High efficiency square shoulder mill for roughing

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°







Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Inch	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TLS11R200U0075A04	1.921	2.000	4	20	1.875	2.356	0.750	0.750	0.315	0.197	1.330	With	AS*T11T3...

Metric	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TLS11R050M22.0E04	48.8	50	4	20	47	60	22	20	10.4	6.3	0.5	With	AS*T11T3...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS






Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
ELS11...	CSPB-2.5	M-1000	-	IP-8D
TLS11R200U0075A04	CSPB-2.5	M-1000	C0.375X1.125H	IP-8D
TLS11R050M22.0E04	CSPB-2.5	M-1000	CM10X40H	IP-8D

Recommended clamping torque: 0.96 lbs·ft, 1.3 N·m

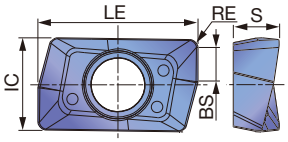
Reference pages: Inserts → H166 - H167

MEMO

INSERT

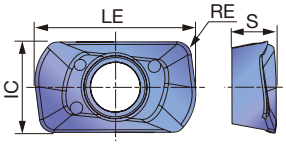
AOMT07-MJ





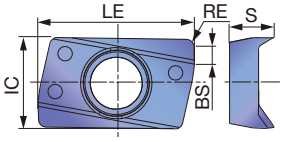
AOMT07-HJ





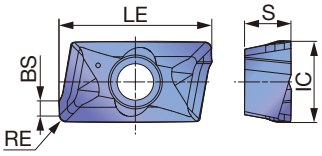
AOGT07-AJ





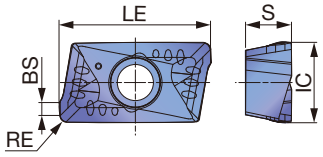
ASMT11-MJ





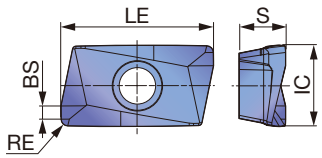
ASMT11-MS





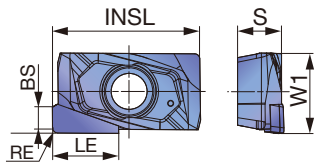
ASGT11-AJ





ASGW11-D



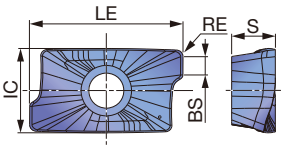


Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

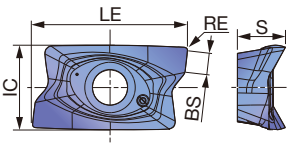
AOMT18-MJ





AOGT18-AJ





P	Steel	☆			☆	★	☆			★								
M	Stainless		☆	☆	☆	★	☆											
K	Cast iron	★			☆	☆		☆										
N	Non-ferrous								★			★		★				
S	Superalloys		★		★	☆												
H	Hard materials				★													

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated								Cermet	Uncoated	PCD				LE	INSL	IC	W1	S	BS
			AH120	AH130	AH140	AH725	AH3225	T3225	T1215	DS1100	NS740	KS05F	DX110									
AOMT070202PDPR-MJ	0.008	0.276			●	●											0.315	-	0.185	-	0.091	0.083
AOMT070204PDPR-MJ	0.016	0.276			●	●											0.315	-	0.185	-	0.091	0.073
AOMT070208PDPR-MJ	0.031	0.276			●	●											0.315	-	0.185	-	0.091	0.060
AOMT070216PDPR-MJ	0.063	0.276			●	●											0.315	-	0.185	-	0.091	0.027
AOMT070208PDPR-HJ	0.031	0.031			●	●											0.346	-	0.193	-	0.094	-
AOGT070204PDFR-AJ	0.016	0.252										●					0.319	-	0.185	-	0.091	0.073
ASMT11T304PDPR-MJ	0.016	0.417	●	●		●	●	●	●		●						0.484	-	0.264	-	0.146	0.055
ASMT11T308PDPR-MJ	0.031	0.417	●	●		●	●	●	●		●						0.484	-	0.264	-	0.146	0.055
ASMT11T312PDPR-MJ	0.047	0.417	●	●		●	●	●									0.484	-	0.264	-	0.146	0.039
ASMT11T316PDPR-MJ	0.063	0.417	●	●		●	●	●	●		●						0.484	-	0.264	-	0.146	0.024
ASMT11T320PDPR-MJ	0.079	0.417	●				●		●								0.484	-	0.264	-	0.146	0.020
ASMT11T330PDPR-MJ	0.118	0.417	●	●			●		●								0.484	-	0.264	-	0.146	0.008
ASMT11T304PDPR-MS	0.016	0.417		●	●		●										0.484	-	0.264	-	0.146	0.055
ASGT11T304PDFR-AJ	0.016	0.417								●		●					0.484	-	0.264	-	0.146	0.055
ASGT11T308PDFR-AJ	0.031	0.417								●		●					0.484	-	0.264	-	0.146	0.055
ASGW11T302PDFR-D	0.008	0.177											●				0.205	0.465	-	0.252	0.146	0.071
ASGW11T304PDFR-D	0.016	0.177											●				0.205	0.465	-	0.252	0.146	0.063
AOMT180508PDPR-MJ	0.031	0.657			●	●											0.768	-	0.421	-	0.220	0.092
AOMT180516PDPR-MJ	0.063	0.657			●	●											0.768	-	0.421	-	0.220	0.062
AOMT180524PDPR-MJ	0.094	0.657			●	●											0.768	-	0.421	-	0.220	0.060
AOMT180532PDPR-MJ	0.126	0.657			●	●											0.768	-	0.421	-	0.220	-
AOGT180504PDFR-AJ	0.016	0.657										●					0.780	-	0.425	-	0.240	0.092
AOGT180508PDFR-AJ	0.031	0.657										●					0.780	-	0.425	-	0.240	0.092

Caution : The contour radius when using the tool is smaller than the RE value.
If RE is 0.047" or more, it will be about 10% smaller than RE.
PCD inserts listed above are not designed to be re-ground and re-used.

● : Line up

STANDARD CUTTING CONDITIONS

Please scan below.

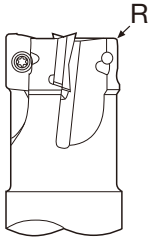
e-catalog EPO07 | e-catalog EPO11 | e-catalog EPO18 | e-catalog HPO07-M | e-catalog HPO11-M | e-catalog TPO07 | e-catalog TPO11 | e-catalog TPO18

e-catalog ELS11 | e-catalog TLS11

CAUTIONARY POINT IN MODIFYING CUTTER BODIES

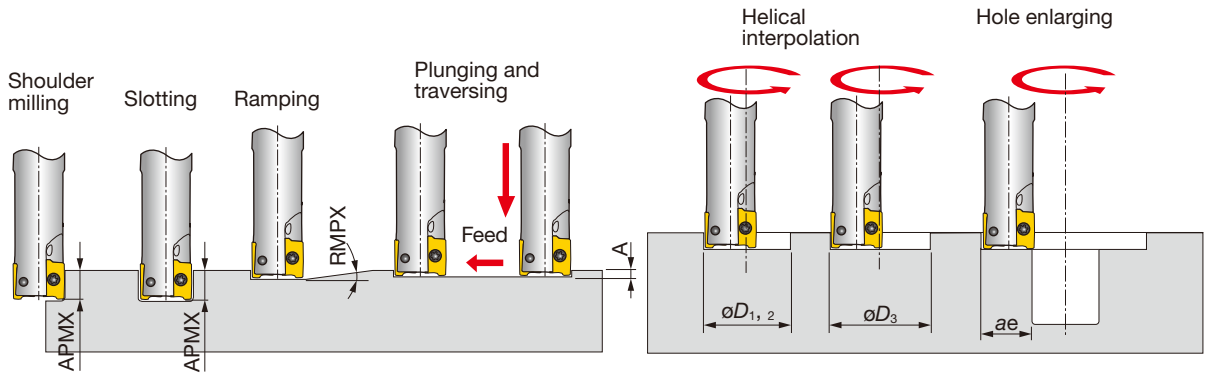
When using inserts with corner radius RE ≥ 0.079", standard cutter bodies have to be modified “R”. (Only for TPO11, EPO11, TLS11, ELS11, HPO11)

About roughing type TLS11, ELS11
From 2nd row onwards, please use insert with RE = 0.016" or 0.031"



Corner radius RE (in)	The dimension of modifying (in)
0.016 - 0.063	Unnecessary
0.079 - 0.118	0.080

APPLICATION RANGE



	Tool dia.	Chipbreaker	Max. depth of cut	Max. ramping angle	Max. plunging depth	Min. machining	Max. machining		Max. cutting width in enlarging
Inch	**DC**		**APMX**	**RMPX**	**A**	**øD1**	**øD2**	**øD3***	**ae**
EPO07R050U0050-02	0.500	MJ, AJ	0.276	7.5	0.020	0.750	0.862	0.862	0.480
	0.524	HJ	0.031	4.5	0.030	0.786	-	-	0.406
EPO07R063U0063-04	0.625	MJ, AJ	0.276	5	0.020	0.938	1.112	1.112	0.610
	0.649	HJ	0.031	4	0.030	0.974	-	-	0.531
EPO07R075U0075-05	0.750	MJ, AJ	0.276	3.5	0.020	1.125	1.362	1.362	0.730
	0.774	HJ	0.031	2.5	0.030	1.161	-	-	0.656
EPO07R100U…	1.000	MJ, AJ	0.276	2.4	0.020	1.500	1.862	1.862	0.980
	1.024	HJ	0.031	2	0.030	1.536	-	-	0.906
EPS11050...	0.500	MJ, MS, AJ	0.417	6	0.020	0.590	0.882	0.882	0.480
EPS11062...	0.625	MJ, MS, AJ	0.417	5	0.020	0.790	1.332	1.332	0.610
EPS11075...	0.750	MJ, MS, AJ	0.417	3	0.020	1.100	1.382	1.382	0.730
EPS11100...	1.000	MJ, MS, AJ	0.417	2	0.020	1.500	1.882	1.882	0.980
EPS11125...	1.250	MJ, MS, AJ	0.417	1.5	0.020	2.050	2.382	2.382	1.230
EPO18R100U…	1.000	MJ, AJ	0.657	5.5	0.039	1.272	1.764	1.764	0.961
EPO18R125U…	1.250	MJ, AJ	0.657	3.5	0.039	1.772	2.264	2.264	1.211
EPO18R150U…	1.500	MJ, AJ	0.657	2.7	0.039	2.272	2.764	2.764	1.461
T/EPO18R200U…	2.000	MJ, AJ	0.657	1.9	0.039	3.272	3.764	3.764	1.961

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

	Tool dia.	Chipbreaker	Max. depth of cut	Max. ramping angle	Max. plunging depth	Min. machining	Max. machining		Max. cutting width in enlarging
Inch	**DC**		**APMX**	**RMPX**	**A**	**øD1**	**øD2**	**øD3***	**ae**
TPO07R200U0075A12	2.000	MJ, AJ	0.276	0.9	0.020	3.000	3.960	3.862	1.980
	2.024	HJ	0.031	0.6	0.030	3.036	4.008	-	1.906
TPS11200RBU	2.000	MJ, MS, AJ	0.417	0.7	0.020	3.460	3.900	3.882	1.950
TPS11300RBU	3.000	MJ, MS, AJ	0.417	0.4	0.020	5.830	6.260	5.882	3.130
TPS11400RBU	4.000	MJ, MS, AJ	0.417	0.3	0.020	7.400	7.830	7.882	3.920
TPO18R250U0075A06	2.500	MJ, AJ	0.657	1.4	0.039	4.272	4.921	4.764	2.461
TPO18R300U0100A07	3.000	MJ, AJ	0.657	1.1	0.039	5.272	5.921	5.764	2.961
TPO18R400U0150A08	4.000	MJ, AJ	0.657	0.8	0.039	7.272	7.921	7.764	3.961
TPO18R500U0150A09	5.000	MJ, AJ	0.657	0.6	0.039	9.272	9.921	9.764	4.961
TPO18R600U0200A10	6.000	MJ, AJ	0.657	0.5	0.039	11.272	11.921	11.764	5.961

*Flat bottom hole
Corner RE for dimensions of *øD*1, *øD*2, and *øD*3: RE = 0.016" for EPO07 / EPO11 and RE = 0.031" for EPO18.

EPD05

High density square shoulder endmill, shank type, with screw clamp system

GAMP = +5°, GAMF = -7° ~ +12°



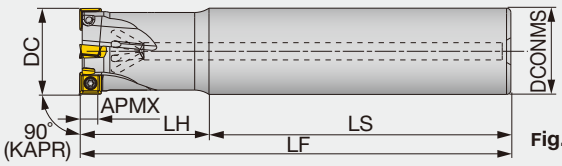


Fig. 1 Fig. 2

Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Shank	Insert	Shank type
EPD05R050U0050-02	0.157	0.500	2	0.500	1.780	1.220	3.000	0.220	With	Straight	SD*T0502...	Fig .1
EPD05R063U0063-03	0.157	0.625	3	0.625	2.000	1.500	3.500	0.440	With	Straight	SD*T0502...	Fig .1
EPD05R075U0075W04	0.157	0.750	4	0.750	2.030	1.720	3.750	0.440	With	Weldon	SD*T0502...	Fig .2
EPD05R100U0100W05	0.157	1.000	5	1.000	2.280	1.720	4.000	0.660	With	Weldon	SD*T0502...	Fig .2
EPD05R125U0100W06	0.157	1.000	6	1.250	2.280	1.720	4.000	1.100	With	Weldon	SD*T0502...	Fig .2

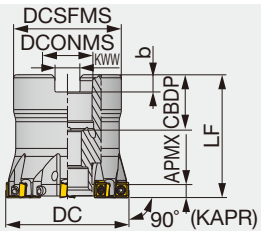
Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Shank	Insert	Shank type
EPD05R012M12.0-02	4	12	2	12	62	18	80	0.1	With	Straight	SD*T0502...	Fig .1
EPD05R016M16.0-03	4	16	3	16	90	20	110	0.2	With	Straight	SD*T0502...	Fig .1
EPD05R020M20.0W04	4	20	4	20	80	25	105	0.2	With	Weldon	SD*T0502...	Fig .2
EPD05R025M20.0W05	4	25	5	20	90	25	115	0.3	With	Weldon	SD*T0502...	Fig .2
EPD05R032M25.0W06	4	32	6	25	98	32	130	0.5	With	Weldon	SD*T0502...	Fig .2
EPD05R040M32.0W08	4	40	8	32	100	40	140	0.8	With	Weldon	SD*T0502...	Fig .2

TPD05

High density square shoulder mill, with screw clamp system

GAMP = +5°, GAMF = -7° ~ +12°





Right hand (R) shown.

Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TPD05R150U0075A08	0.157	1.500	8	1.461	1.570	0.750	0.750	0.313	0.170	0.220	With	SD*T0502...
TPD05R200U0075A10	0.157	2.000	10	1.750	1.570	0.750	0.750	0.313	0.170	0.440	With	SD*T0502...

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPD05R032M16.0E06	4	32	6	30	32	16	20	8.4	5.6	0.1	With	SD*T0502...
TPD05R040M22.0E08	4	40	8	38	40	22	22	10.4	6.3	0.2	With	SD*T0502...

SPARE PARTS






Designation	Clamping screw	Shell locking bolt	Wrench	Shell locking bolt (Optional parts)
EPD05...	CSPB-2L043	-	IP-6DB	-
TPD05R**U...	CSPB-2L043	-	IP-6DB	(C0.375X1.125H)
TPD05R032M16.0E06	CSPB-2L043	CM8X30H	IP-6DB	-
TPD05R040M22.0E08	CSPB-2L043	CM10X30H	IP-6DB	-

Recommended clamping torque: 0.52 lbs·ft, 0.7 N·m

Reference pages: Inserts → H170

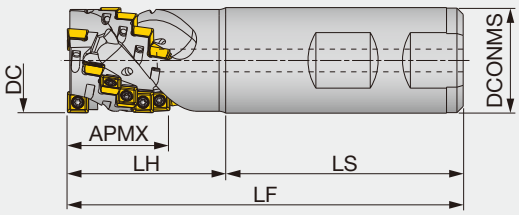
TUNGQUAD

ELD05

High density square shoulder endmill for roughing, shank type, with screw clamp system

GAMP = +5°, GAMF = -3°





Inch	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
ELD05R075U0075W02	0.799	0.750	2	10	0.750	2.031	1.219	3.250	0.440	With	SD*T0502...
ELD05R100U0100W03	0.953	1.000	3	18	1.000	2.250	1.500	3.750	0.670	With	SD*T0502...

Metric	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
ELD05R020M20.0W02	20.3	20	2	10	20	53	32	85	0.2	With	SD*T0502...
ELD05R025M25.0W03	24.2	25	3	18	25	59	36	95	0.3	With	SD*T0502...

SPARE PARTS





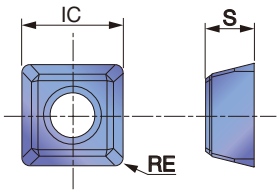
Designation	Clamping screw	Wrench
ELD05...	CSPB-2L043	IP-6DB

Recommended clamping torque: 0.52 lbs·ft, 0.7 N·m

INSERT

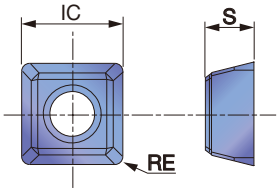
SDMT05-MJ





SDHT05-AJ





Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

		Coated		Uncoated
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated TH10	S	IC
SDMT050204PN-MJ	0.016	0.157	●	●		0.094	0.200
SDHT050204FN-AJ	0.016	0.157			●	0.094	0.200

● : Line up

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog EPD05

e-catalog TPD05

e-catalog ELD05

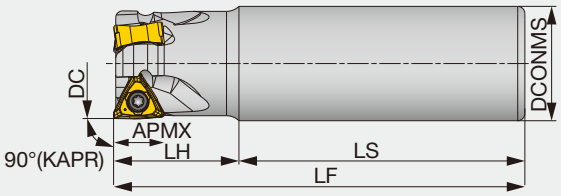
DOFORCE TRI

EPTN07/12

Square shoulder endmill, with screw clamp system

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°







Inch	APMX	DC	CICT	DCONMS	LS	LH(1)	LF(1)	WT(lb)	Air hole	Insert
EPTN07U0.75C0.75R02	0.256	0.750	2	0.750	2.500	1.000	3.500	0.370	With	TNMU07...
EPTN07U0.75C0.75R02L	0.256	0.750	2	0.750	4.750	1.670	6.420	0.710	With	TNMU07...
EPTN07U1.00C1.00R03	0.256	1.000	3	1.000	3.000	1.500	4.500	0.880	With	TNMU07...
EPTN07U1.00C1.00R03L	0.256	1.000	3	1.000	5.700	3.000	8.700	1.720	With	TNMU07...
EPTN07U1.00C1.00R04	0.256	1.000	4	1.000	3.000	1.500	4.500	0.880	With	TNMU07...
EPTN07U1.25C1.25R04	0.256	1.250	4	1.250	3.000	1.500	4.500	1.390	With	TNMU07...
EPTN07U1.25C1.25R05	0.256	1.250	5	1.250	3.000	1.500	4.500	1.390	With	TNMU07...
EPTN12U1.25C1.25R03N	0.433	1.250	3	1.250	3.000	1.500	4.500	1.560	Without	TN*U12...
EPTN07U1.50C1.25R06	0.256	1.500	6	1.250	2.250	2.250	4.500	1.460	With	TNMU07...
EPTN12U1.50C1.25R04N	0.433	1.500	4	1.250	3.000	1.500	4.500	1.780	Without	TN*U12...

Metric	APMX	DC	CICT	DCONMS	LS	LH(1)	LF(1)	WT(kg)	Air hole	Insert
EPTN07M018C16.0R02	6.5	18	2	16	60	25	85	0.13	With	TNMU07...
EPTN07M020C20.0R02	6.5	20	2	20	70	30	100	0.22	With	TNMU07...
EPTN07M020C20.0R02L	6.5	20	2	20	135	50	185	0.41	With	TNMU07...
EPTN07M020C20.0R03	6.5	20	3	20	70	30	100	0.215	With	TNMU07...
EPTN07M025C25.0R03	6.5	25	3	25	80	35	115	0.41	With	TNMU07...
EPTN07M025C25.0R03L	6.5	25	3	25	150	70	220	0.78	With	TNMU07...
EPTN07M025C25.0R04	6.5	25	4	25	80	35	115	0.41	With	TNMU07...
EPTN07M032C32.0R04	6.5	32	4	32	80	35	115	0.66	With	TNMU07...
EPTN07M032C32.0R05	6.5	32	5	32	80	35	115	0.67	With	TNMU07...
EPTN12M032C32.0R02N	11	32	2	32	80	35	115	0.7	Without	TN*U12...
EPTN12M032C32.0R03N	11	32	3	32	80	35	115	0.7	Without	TN*U12...
EPTN12M040C32.0R03N	11	40	3	32	80	35	115	0.8	Without	TN*U12...
EPTN12M040C32.0R04N	11	40	4	32	80	35	115	0.8	Without	TN*U12...

(1) The value is true with R0.8 mm (0.031") insert. For other Corner R, please refer to page H173.

SPARE PARTS







Designation	Clamping screw	Grip	Wrench	Torx bit	Lubricant
EPTN07...	CSPB-2.5SH	-	IP-7D	-	-
EPTN12...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000

Recommended clamping torque: CSPB-2.5SH = 0.81 lbs·ft, 1.1 N·m, CSPB-3.5 = 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H173, Standard cutting conditions → H174

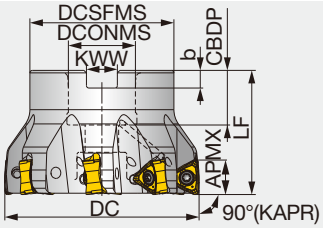
DOFORCE TRI

TPTN07/12

Square shoulder mill, with screw clamp system

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°







Inch	APMX	DC	CICT	DCSFMS	LF(1)	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPTN07U2.00B0.75R08	0.256	2.000	8	1.850	1.575	0.750	0.750	0.315	0.197	0.93	With	TNMU07...	A
TPTN12U2.00B0.75R05	0.433	2.000	5	1.850	1.575	0.750	0.750	0.315	0.197	0.89	With	TN*U12...	A
TPTN12U2.50B0.75R06	0.433	2.500	6	1.850	1.575	0.750	0.750	0.315	0.197	1.33	With	TN*U12...	A
TPTN12U3.00B1.00R08	0.433	3.000	8	2.835	1.969	1.000	1.024	0.374	0.236	2.44	With	TN*U12...	A
TPTN12U4.00B1.50R10	0.433	4.000	10	3.150	1.969	1.500	1.181	0.626	0.394	3.11	With	TN*U12...	B
TPTN12U5.00B1.50R12	0.433	5.000	12	3.150	2.480	1.500	1.181	0.626	0.394	5.33	With	TN*U12...	B
TPTN12U6.00B2.00R12N	0.433	6.000	12	3.858	2.48	2.000	1.496	0.748	0.433	8.82	Without	TN*U12...	B

Metric	APMX	DC	CICT	DCSFMS	LF(1)	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPTN07M040B16.0R06	6.5	40	6	35	40	16	18	8.4	5.6	0.24	With	TNMU07...
TPTN07M050B22.0R08	6.5	50	8	47	40	22	20	10.4	6.3	0.41	With	TNMU07...
TPTN12M050B22.0R04	11	50	4	47	40	22	20	10.4	6.3	0.4	With	TN*U12...
TPTN12M050B22.0R05	11	50	5	47	40	22	20	10.4	6.3	0.4	With	TN*U12...
TPTN12M063B22.0R05	11	63	5	47	40	22	20	10.4	6.3	0.6	With	TN*U12...
TPTN12M063B22.0R06	11	63	6	47	40	22	20	10.4	6.3	0.6	With	TN*U12...
TPTN12J080B25.4R06	11	80	6	58	50	25.4	26	9.5	6	1.1	With	TN*U12...
TPTN12J080B25.4R08	11	80	8	58	50	25.4	26	9.5	6	1.1	With	TN*U12...
TPTN12M080B27.0R06	11	80	6	58	50	27	22	12.4	7	1.1	With	TN*U12...
TPTN12M080B27.0R08	11	80	8	58	50	27	22	12.4	7	1.1	With	TN*U12...
TPTN12J100B31.7R07	11	100	7	67	50	31.75	32	12.7	8	1.4	With	TN*U12...
TPTN12J100B31.7R10	11	100	10	67	50	31.75	32	12.7	8	1.4	With	TN*U12...
TPTN12M100B32.0R07	11	100	7	67	50	32	28.5	14.4	8	1.4	With	TN*U12...
TPTN12M100B32.0R10	11	100	10	67	50	32	28.5	14.4	8	1.4	With	TN*U12...
TPTN12J125B38.1R08	11	125	8	71	63	38.1	38	15.9	10	2.4	With	TN*U12...
TPTN12J125B38.1R12	11	125	12	71	63	38.1	38	15.9	10	2.5	With	TN*U12...
TPTN12M125B40.0R08	11	125	8	71	63	40	32	16.4	9	2.3	With	TN*U12...
TPTN12M125B40.0R12	11	125	12	71	63	40	32	16.4	9	2.4	With	TN*U12...
TPTN12M160B40.0R10N	11	160	10	100	63	40	29	16.4	9	4.5	Without	TN*U12...
TPTN12J160B50.8R10N	11	160	10	100	63	50.8	41	19	11	4.5	Without	TN*U12...

(1) The value is true with R0.8 mm (0.031") insert. For other Corner R, please refer to page H173.

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

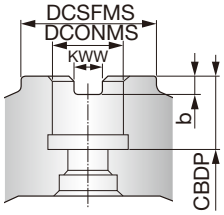
SPARE PARTS

Designation	Clamping screw	Grip	Wrench	Torx bit	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Shell locking bolt 3 (Optional parts)
TPTN07U2.00B0.75R08	CSPB-2.5SH	-	IP-7D	-	M-1000	-	-	(C0.375X1.125H)
TPTN12U2.00, 2.50B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	-	(C0.375X1.125H)
TPTN12U3.00B1.00R08	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	-	(C0.500X1.375H)
TPTN12U4.00, 5.00B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	-	(TMBA-0.750H)
TPTN12U6.00B2.00R12N	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	-	-
TPTN07M040B16.0R06	CSPB-2.5SH	-	IP-7D	-	-	-	CM8X30H	-
TPTN07M050B22.0R08	CSPB-2.5SH	-	IP-7D	-	-	-	CM10X30H	-
TPTN12M050, 063B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	CM10X30H	-
TPTN12*080B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	CM12X30H	-
TPTN12*100B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	TMBA-M16H	-	-
TPTN12*125B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	TMBA-M20H	-	-
TPTN12*160B...	CSPB-3.5	H-TB2W	-	BLDIP15/S7	M-1000	-	-	-

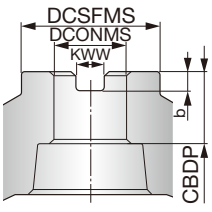
Recommended clamping torque: CSPB-2.5SH = 0.81 lbs·ft, 1.1 N·m, CSPB-3.5 = 2.58 lbs·ft, 3.5 N·m

Arbor type

Arbor type A



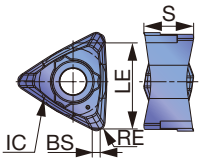
Arbor type B



Reference pages: Standard cutting conditions → H174

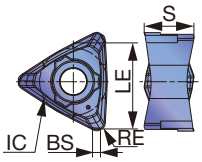
TNMU07-MJ





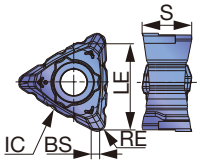
TNGU12-MJ/TNMU12-MJ





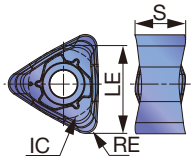
TNMU12-NMJ





TNMU12-R-MJ





P	Steel	☆	★	☆		☆
M	Stainless		☆	★		☆
K	Cast iron	★	☆		☆	
N	Non-ferrous					
S	Superalloy	★		☆		
H	Hard materials					

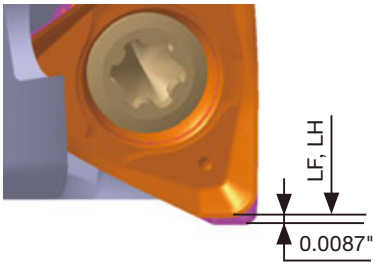
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	AH3225	AH3135	T1215	T3225	LE	IC	S	BS
TNMU070304PER-MJ	0.016	0.256	●	●	●			0.256	0.224	0.161	0.024
TNMU070308PER-MJ	0.031	0.256	●	●	●			0.256	0.224	0.161	0.024
TNGU120708PER-MJ	0.031	0.433	●	●	●	●		0.472	0.375	0.277	0.046
TNMU120708PER-MJ	0.031	0.433	●	●	●	●	●	0.472	0.375	0.280	0.046
TNMU120708PER-NMJ	0.031	0.433	●	●	●			0.472	0.375	0.280	0.046
TNMU1207R16PER-MJ	0.063	0.433	●	●	●			0.472	0.375	0.271	-
TNMU1207R20PER-MJ	0.079	0.433	●	●	●	●		0.472	0.375	0.265	-

● : Line up

Notes

LF and LH dimensions for R0.016", size 07 insert

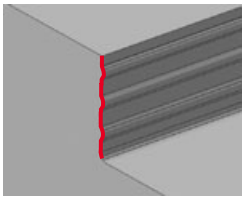


Add 0.0087" to LH and LF measurements when R0.016" insert is used.

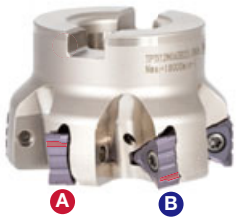
Serrated size 12 insert (NMJ)

To obtain good wall accuracy, the serrated inserts must be arranged in alternative orders on the cutter so that the same serrated edge will not cut the same surface twice, generating steps on the wall. One of the serration grooves (marked in red) on the cutting edge has a irregular shape, and this must be placed alternatively as shown below by A and B.

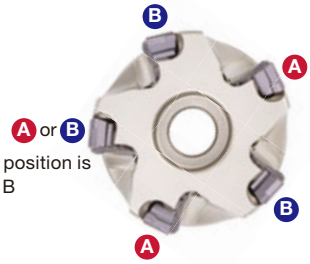




Check the insert orientations if steps are produced on the wall surface.

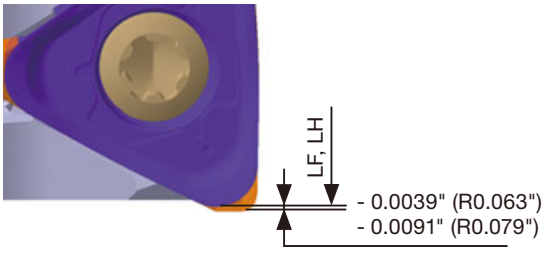


The groove in red is asymmetric for easy identification



Insert orientation for odd number of teeth

LF and LH dimensions for R0.063" / 0.079", size 12 insert



Subtract 0.0039" (R0.063") or 0.0091" (R0.079") to LH and LF measurements when R0.063" or R0.079" insert is used.

STANDARD CUTTING CONDITIONS

Size 07 inserts

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1018, 1026, etc.	- 200 HB	First choice	AH3225	328 - 820	0.003 - 0.008
			For fracture resistance	AH3135	328 - 820	0.003 - 0.008
	High Carbon steel, Alloy steel 1045, 4140, etc.	- 300 HB	First choice	AH3225	328 - 755	0.003 - 0.006
			For fracture resistance	AH3135	328 - 755	0.003 - 0.006
	Prehardened steel H-13, P-20, etc.	30 - 40 HRC	First choice	AH3225	328 - 591	0.003 - 0.006
			For fracture resistance	AH3135	328 - 591	0.003 - 0.006
M	Stainless steel 304, 316, etc.	- 200 HB	First choice	AH3135	295 - 656	0.003 - 0.006
			For wear resistance	AH3225	295 - 656	0.003 - 0.006
K	Gray cast iron Class 25, Class 30, etc.	150 - 250 HB	First choice	AH120	459 - 820	0.003 - 0.008
			For fracture resistance	AH3225	459 - 820	0.003 - 0.008
	Ductile cast iron 60-40-18, 80-55-06, etc.	150 - 250 HB	First choice	AH120	361 - 656	0.003 - 0.006
			For fracture resistance	AH3225	361 - 656	0.003 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	66 - 197	0.003 - 0.006
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First choice	AH120	66 - 131	0.003 - 0.004

Size 12 inserts

ISO	Workpiece material	Hardness	Priority	Grade	Chipbreaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1018, 1026, etc.	- 200 HB	First choice	AH3225	MJ	328 - 820	0.003 - 0.012
			For fracture resistance	AH3135	MJ	328 - 820	0.003 - 0.012
			For wear resistance	T3225	MJ	328 - 984	0.003 - 0.012
			Low cutting force	AH3225	NMJ	328 - 820	0.003 - 0.006
	High Carbon steel, Alloy steel 1045, 4140, etc.	- 300 HB	First choice	AH3225	MJ	328 - 755	0.003 - 0.012
			For fracture resistance	AH3135	MJ	328 - 755	0.003 - 0.012
			For wear resistance	T3225	MJ	328 - 919	0.003 - 0.012
			Low cutting force	AH3225	NMJ	328 - 755	0.003 - 0.006
	Prehardened steel H-13, P-20, etc.	30 - 40 HRC	First choice	AH3225	MJ	328 - 591	0.003 - 0.010
			For fracture resistance	AH3135	MJ	328 - 591	0.003 - 0.010
			For wear resistance	T3225	MJ	328 - 656	0.003 - 0.010
			Low cutting force	AH3225	NMJ	328 - 591	0.003 - 0.006
M	Stainless steel 304, 316, etc.	- 200 HB	First choice	AH3135	MJ	295 - 656	0.003 - 0.010
			For wear resistance	T3225	MJ	295 - 820	0.003 - 0.010
			Low cutting force	AH3135	NMJ	295 - 656	0.003 - 0.006
K	Gray cast iron Class 25, Class 30, etc.	150 - 250 HB	First choice	AH120	MJ	459 - 820	0.003 - 0.012
			For fracture resistance	AH3225	MJ	459 - 820	0.003 - 0.012
			For wear resistance	T1215	MJ	459 - 984	0.003 - 0.012
			Low cutting force	AH120	NMJ	459 - 820	0.003 - 0.006
	Ductile cast iron 60-40-18, 80-55-06, etc.	150 - 250 HB	First choice	AH120	MJ	361 - 656	0.003 - 0.010
			For fracture resistance	AH3225	MJ	361 - 656	0.003 - 0.010
			For wear resistance	T1215	MJ	361 - 820	0.003 - 0.010
			Low cutting force	AH120	NMJ	361 - 656	0.003 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	MJ	66 - 197	0.003 - 0.008
			Low cutting force	AH3135	NMJ	66 - 197	0.003 - 0.006
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First choice	AH120	MJ	66 - 131	0.003 - 0.007
			Low cutting force	AH120	NMJ	66 - 131	0.003 - 0.006

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Note: For NMJ chipbreaker, use a feed rate that satisfies the following theoretical chip thickness:

Designation	Chip thickness (in)
TNMU120708PER-NMJ	< 0.008"

EPQ11,18

Square shoulder endmill, shank type, with screw clamp system

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°



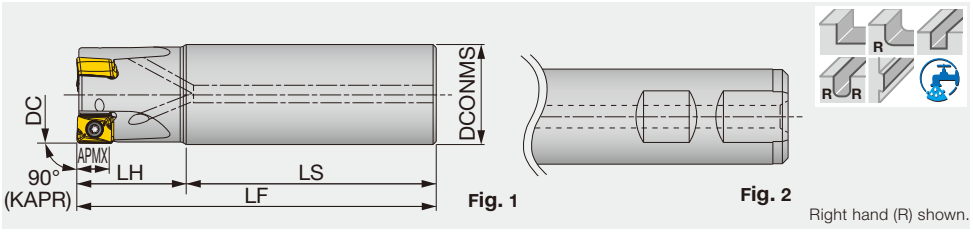


Fig. 1

Fig. 2

Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert	Shank type
EPQ11R100U0100W02	0.354	1.000	2	1.000	2.280	1.220	3.500	0.750	With	LQMU1107...	Fig .2
EPQ11R125U0125W03	0.354	1.250	3	1.250	2.500	1.500	4.000	1.540	With	LQMU1107...	Fig .2
EPQ11R150U0125W04	0.354	1.500	4	1.250	2.250	1.750	4.000	1.650	With	LQMU1107...	Fig .2

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert	Shank type
EPQ11R025M25.0-02	9	25	2	25	70	30	100	0.3	With	LQMU1107...	Fig .1
EPQ11R032M32.0-03	9	32	3	32	80	35	115	0.7	With	LQMU1107...	Fig .1
EPQ11R040M32.0-04	9	40	4	32	80	35	115	0.8	With	LQMU1107...	Fig .1
EPQ18R040M32.0W03	16	40	3	32	75	35	110	0.7	With	LQMU1808...	Fig .2
EPQ11R050M32.0-05	9	50	5	32	80	40	120	0.9	With	LQMU1107...	Fig .1
EPQ18R050M32.0W04	16	50	4	32	75	40	115	0.9	With	LQMU1808...	Fig .2
EPQ11R063M32.0-06	9	63	6	32	80	40	120	1.1	With	LQMU1107...	Fig .1
EPQ11R080M32.0-07	9	80	7	32	80	40	120	1.4	With	LQMU1107...	Fig .1

SPARE PARTS







Designation	Clamping screw	Grip 1	Grip 2	Torx bit	Wrench
EPQ11...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	T-10D
EPQ18...	SR14-591	-	H-TB	BT20M	T-20D

Recommended clamping torque：CSTB-3.5L115 = 1.84 lbs·ft, 2.5 N·m, SR14-591 = 3.69 lbs·ft, 5 N·m

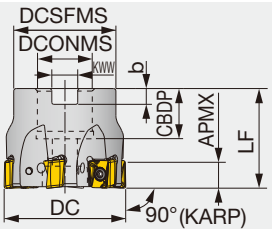
Reference pages: Inserts → H177, Standard cutting conditions → H178

DOREC
TPQ11,18

Square shoulder mill, with screw clamp system

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°







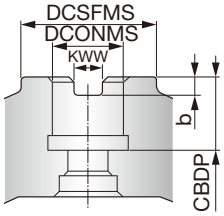
Right hand (R) shown.

Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPQ11R200U0075A06	0.354	2.000	6	1.693	1.575	0.750	0.787	0.320	0.187	0.880	With	LQMU1107...	A
TPQ11R250U0075A07	0.354	2.500	7	1.693	1.575	0.750	0.787	0.320	0.187	1.320	With	LQMU1107...	A
TPQ11R300U0100A10	0.354	3.000	10	2.165	1.969	1.000	1.024	0.383	0.219	2.310	With	LQMU1107...	A
TPQ11R400U0150A12	0.354	4.000	12	3.150	1.969	1.500	1.496	0.633	0.375	4.410	With	LQMU1107...	B
TPQ18R200U0075A03	0.630	2.000	3	1.772	1.575	0.750	0.750	0.320	0.187	0.880	With	LQMU1808...	A
TPQ18R250U0100A04	0.630	2.500	4	2.165	1.969	1.000	1.024	0.383	0.219	1.760	With	LQMU1808...	A
TPQ18R300U0100A05	0.630	3.000	5	2.165	1.969	1.000	1.024	0.383	0.219	2.430	With	LQMU1808...	A
TPQ18R400U0150A06	0.630	4.000	6	3.150	1.969	1.500	1.496	0.633	0.375	3.750	With	LQMU1808...	B
TPQ18R500U0150A08	0.630	5.000	8	3.150	2.480	1.500	1.693	0.626	0.394	6.170	With	LQMU1808...	B
TPQ18R600U0200A09	0.630	6.000	9	3.937	2.480	2.000	1.811	0.758	0.437	9.040	Without	LQMU1808...	B

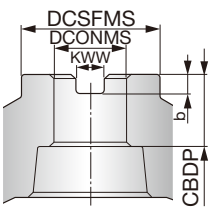
Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPQ11R040M16.0E04	9	40	4	35	40	16	20	8.4	5.6	0.2	With	LQMU1107...
TPQ11R050M22.0E06	9	50	6	41	40	22	20	10.4	6.3	0.4	With	LQMU1107...
TPQ18R050M22.0E03	16	50	3	47	40	22	20	10.4	6.3	0.4	With	LQMU1808...
TPQ11R063M22.0E07	9	63	7	47	40	22	20	10.4	6.3	0.5	With	LQMU1107...
TPQ18R063M25.4-04	16	63	4	55	50	25.4	26	9.5	6	0.7	With	LQMU1808...
TPQ18R063M27.0E04	16	63	4	58	50	27	26	12.4	7	0.5	With	LQMU1808...
TPQ11R080M25.4-10	9	80	10	55	50	25.4	26	9.5	6	1.1	With	LQMU1107...
TPQ11R080M27.0E10	9	80	10	58	50	27	26	12.4	7	1	With	LQMU1107...
TPQ18R080M25.4-05	16	80	5	55	50	25.4	26	9.5	6	0.9	With	LQMU1808...
TPQ18R080M27.0E05	16	80	5	58	50	27	26	12.4	7	0.9	With	LQMU1808...
TPQ11R100M31.7-12	9	100	12	66	50	31.75	32	12.95	8	1.6	With	LQMU1107...
TPQ11R100M32.0E12	9	100	12	66	50	32	32	14.4	8	1.6	With	LQMU1107...
TPQ18R100M31.7-06	16	100	6	70	50	31.75	32	12.95	8	1.4	With	LQMU1808...
TPQ18R100M32.0E06	16	100	6	66	50	32	32	14.4	8	1.4	With	LQMU1808...
TPQ18R125M38.1-08	16	125	8	80	63	38.1	38	15.9	10	2.9	With	LQMU1808...
TPQ18R125M40.0E08	16	125	8	82	63	40	38	16.4	9	2.9	With	LQMU1808...
TPQ18R160M50.8-09	16	160	9	100	63	50.8	38	19	11	4.1	Without	LQMU1808...
TPQ18R160M40.0E09	16	160	9	100	63	40	38	16.4	9	4.1	Without	LQMU1808...

Arbor type

Arbor type A



Arbor type B



Reference pages: Standard cutting conditions → H178

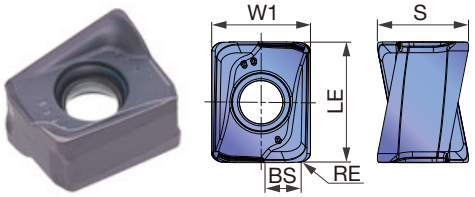
SPARE PARTS

Designation	Clamping screw	Grip 1	Grip 2	Torx bit	Shell locking bolt	Shell locking bolt (Optional parts)
TPQ11R200, 250U..., TPQ18R200, 250U...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	-	(C0.375X1.125H)
TPQ11R300U..., TPQ18R300U...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	-	(C0.500X1.375H)
TPQ11R400U..., TPQ18R400, 500U...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	-	(TMBA-0.750H)
TPQ18R600U0200A09	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	-	-
TPQ11R040M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM8×30H	-
TPQ11R050, 063M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM10×30H	-
TPQ11R080M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM12×30H	-
TPQ11R100M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	TMBA-M16H	-
TPQ18R050M...	SR14-591	-	H-TB	BT20M	CM10×30H	-
TPQ18R063, 080M...	SR14-591	-	H-TB	BT20M	CM12×30H	-
TPQ18R100M...	SR14-591	-	H-TB	BT20M	TMBA-M16H	-
TPQ18R125M...	SR14-591	-	H-TB	BT20M	TMBA-M20H	-
TPQ18R160M...	SR14-591	-	H-TB	BT20M	-	-

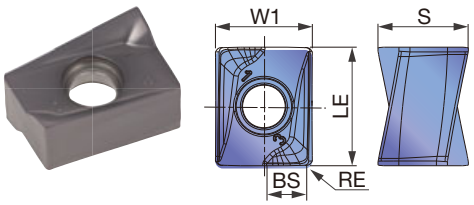
Recommended clamping torque : CSTB-3.5L115 = 1.84 lbs·ft, 2.5 N·m, SR14-591 = 3.69 lbs·ft, 5 N·m

INSERT

LQMU11-PXER-MJ (Available for multi function)



LQMU11/18-PNER-MJ



P	Steel	☆		★	★	
M	Stainless		★	☆	★	
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★		★	☆	
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated				LE	S	W1	BS
			AH120	AH140	AH725	AH3135				
LQMU110704PNER-MJ	0.016	0.354	●	●	●		0.433	0.331	0.354	0.059
LQMU110708PNER-MJ	0.031	0.354	●	●	●		0.433	0.327	0.354	0.043
LQMU110708PXER-MJ	0.031	0.354	●			●	0.433	0.327	0.354	0.043
LQMU110716PNER-MJ	0.063	0.354	●	●	●		0.433	0.323	0.354	0.012
LQMU110720PNER-MJ	0.079	0.354	●				0.433	0.319	0.354	-
LQMU180804PNER-MJ	0.016	0.630	●	●	●		0.689	0.429	0.453	0.079
LQMU180808PNER-MJ	0.031	0.630	●	●	●		0.689	0.429	0.453	0.063
LQMU180816PNER-MJ	0.630	0.630	●	●	●		0.689	0.429	0.453	0.031
LQMU180824PNER-MJ	0.094	0.630	●	●	●		0.689	0.421	0.453	-

● : Line up

STANDARD CUTTING CONDITIONS

LQMU11-PXER-MJ

ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200HB	AH3135	330 - 820	0.004 - 0.010*
P	Alloy steel 1055, etc.		- 300HB	AH3135	325 - 755	0.004 - 0.008*
P	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	AH3135	325 - 750	0.004 - 0.008*
M	Stainless steel 304SS, etc.		- 200HB	AH3135	295 - 590	0.004 - 0.010*
K	Gray cast iron Class 25, etc.		150 - 250HB	AH120	455 - 820	0.004 - 0.010*
K	Ductile cast iron 60-40-18, etc.		150 - 250HB	AH120	360 - 655	0.004 - 0.010*
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	AH120	95 - 195	0.0032 - 0.008*
S	Superalloys Inconel 718, etc.		- 40HRC	AH120	65 - 160	0.0024 - 0.004*
H	Hardened steel	H13, etc.	40 - 50HRC	AH120	145 - 225	0.004 - 0.006*
H	Hardened steel	D2, etc.	50 - 60HRC	AH120	130 - 210	0.0024 - 0.004*

LQMU11/18-PNER-MJ

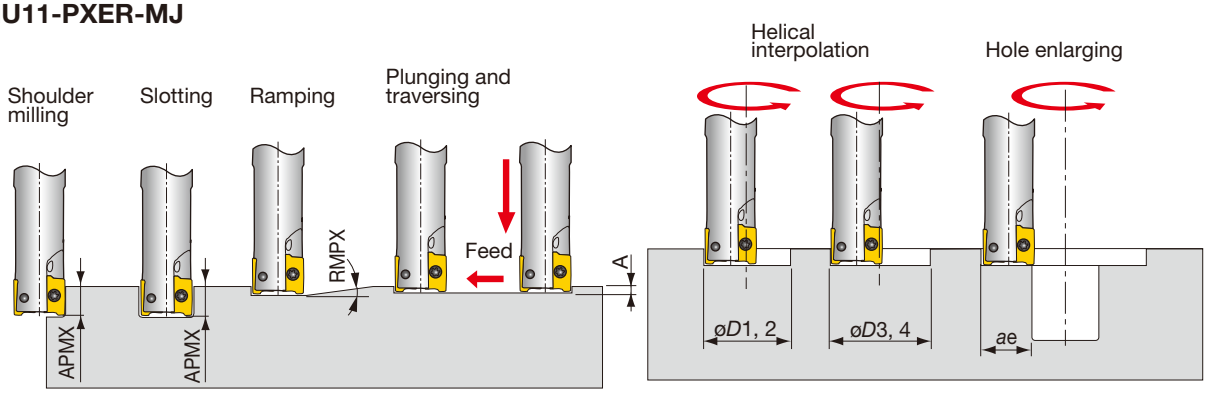
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	- 200HB	AH725	330 - 800	0.004 - 0.010*
P	High carbon steel 1045, 1055, etc.	200 - 300HB	AH725	330 - 750	0.004 - 0.008*
P	Alloyed steel 4140, 8620, etc.	- 300HB	AH725	330 - 750	0.004 - 0.008*
P	Tool steel H13, D2, etc.	- 300HB	AH725	330 - 600	0.004 - 0.008*
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	- 200HB	AH140	300 - 600	0.004 - 0.010*
K	Gray cast iron Class 25, Class 30, etc.	150 - 250HB	AH120	450 - 800	0.004 - 0.010*
K	Ductile cast iron 60-40-18, 60-55-06, etc.	150 - 250HB	AH120	450 - 800	0.004 - 0.010*
S	Heat-resistant alloy Inconel 718, etc.	- 40HRC	AH725	65 - 160	0.003 - 0.008*

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°

* When using LQMU11 inserts, see page **H179** for proper feed per tooth setting.
· For applications with poor chip evacuation, use air gun to remove chips from the machining area to avoid chip re-cutting and part damage.
· To machine cast surface with unstable cutting depths or interruptions, it is recommended to lower the feed rate (*fz*) to the lowest parameter in the recommended range.
· Rigidity of the machine and/or workpiece and the spindle power capability greatly influence the cutting conditions. For applications with large cutting width/depth and/or long tool overhang, start with a *Vc* and *fz* in the lower range of the recommended cutting parameters and monitor the machine stability.

APPLICATION RANGE

LQMU11-PXER-MJ



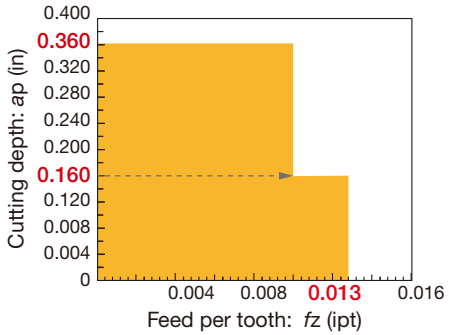
		Max. depth of cut	Max. ramping angle	Max. plunging	Min. machining	Max. machining				Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2*	øD3	øD4*	RE	ae
EPQ11R100…	1.00	0.354	1.8°	0.023	1.41	1.87	1.96	1.94	0.031	0.96
EPQ11R125…	1.25	0.354	1.3°	0.023	1.91	2.37	2.46	2.44	0.031	1.21
TPQ11R150…	1.50	0.354	0.9°	0.023	2.41	2.87	2.96	2.94	0.031	1.46
TPQ11R200…	2.00	0.354	0.7°	0.023	3.41	3.87	3.96	3.94	0.031	1.96
TPQ11R250…	2.50	0.354	0.5°	0.023	4.41	4.87	4.96	4.94	0.031	2.46
TPQ11R300…	3.00	0.354	0.4°	0.023	5.41	5.87	5.96	5.94	0.031	2.96
TPQ11R400…	4.00	0.354	0.3°	0.023	7.41	7.87	7.96	7.94	0.031	3.96

*For a flat bottom

NOTE WHEN USING LQMU11 INSERTS

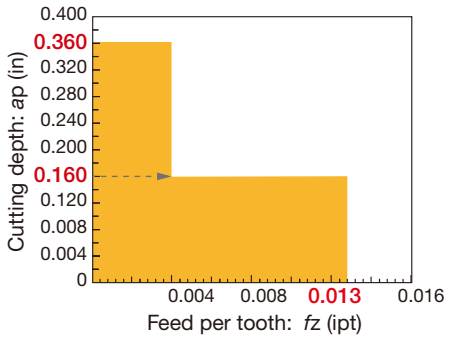
Maximum feed rate per tooth varies depending on the cutting depth and width.
Use proper feed rate as described below.
Use caution. Tool may damage if the parameters are not properly set.

Applicable feed rate (for ae < 10% of tool diameter)



Cutter : TPQ11R200U0075A06 (DC = 2.000", z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3135
Workpiece material : 1055 (200HB)
Cutting Speed : *Vc* = 660 sfm
Cutting width : *ae* = 0.200"
Coolant : Dry
Machine : Vertical M/C, 22 HP

Applicable feed rate (for ae > 10% of tool diameter)



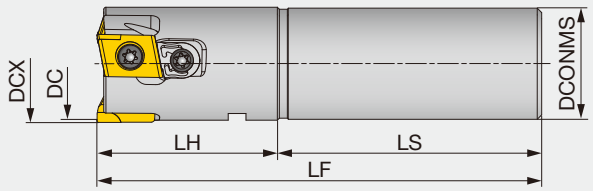
Cutter : TPQ11R200U0075A06 (DC = 2.000", z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3125
Workpiece material : 1055 (200HB)
Cutting Speed : *Vc* = 660 sfm
Cutting width : *ae* = 1.673"
Coolant : Dry
Machine : Vertical M/C, 22 HP

TUNGSPEED MILL

EPYP12

High speed PCD endmill for non ferrous metal





Metric	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
EPYP12M025C25.0R03	25	26.4	3	25	100	50	50	0.4	With	YPEB12X3-*P...
EPYP12M032C25.0R05	32	33.4	5	25	100	45	55	0.5	With	YPEB12X3-*P...

DCX: Outside diameter
DC: Diameter with 01 type insert

SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2	Wedge fixing screw	Wedge
EPYP12M025C25.0R03	VX040024A	T-15F	T-8F	VX040028A	RSFTC1011
EPYP12M032C25.0R05	VX040024A	T-15F	T-8F	RSRGR5M40	RSFTC1009

Recommended clamping torque: 4.5 N·m

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

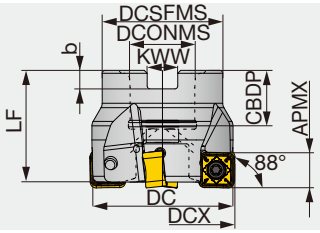
Reference pages: Inserts, Standard cutting conditions → H109

THSN12

88° face mills with double sided square inserts

GAMP = +3°, GAMF = -11°



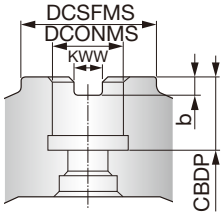


Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
THSN12U2.00B0.75R04	0.374	2.000	2.024	4	1.850	1.575	0.750	0.750	0.315	0.197	0.920	With	SNMU1206...	A
THSN12U2.00B0.75R05	0.374	2.000	2.024	5	1.850	1.575	0.750	0.750	0.315	0.197	0.910	With	SNMU1206...	A
THSN12U2.50B0.75R04	0.374	2.500	2.524	4	1.850	1.575	0.750	0.750	0.315	0.197	1.220	With	SNMU1206...	A
THSN12U2.50B0.75R06	0.374	2.500	2.524	6	1.850	1.575	0.750	0.750	0.315	0.197	1.220	With	SNMU1206...	A
THSN12U3.00B1.00R05	0.374	3.000	3.024	5	1.969	1.969	1.000	1.024	0.374	0.236	2.120	With	SNMU1206...	A
THSN12U3.00B1.00R08	0.374	3.000	3.024	8	1.969	1.969	1.000	1.024	0.374	0.236	2.090	With	SNMU1206...	A
THSN12U4.00B1.50R06	0.374	4.000	4.024	6	3.150	1.969	1.500	1.299	0.626	0.394	3.640	Without	SNMU1206...	B
THSN12U4.00B1.50R08	0.374	4.000	4.024	8	3.150	1.969	1.500	1.299	0.626	0.394	3.550	Without	SNMU1206...	B

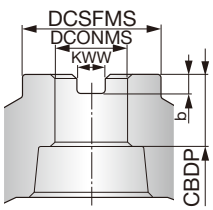
Metric	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
THSN12M050B22.0R04	9.5	50	50.6	4	41	40	22	20	10.4	6.3	0.32	With	SNMU1206...
THSN12M050B22.0R05	9.5	50	50.6	5	41	40	22	20	10.4	6.3	0.32	With	SNMU1206...
THSN12M063B22.0R04	9.5	63	63.6	4	47	40	22	20	10.4	6.3	0.54	With	SNMU1206...
THSN12M063B22.0R06	9.5	63	63.6	6	47	40	22	20	10.4	6.3	0.52	With	SNMU1206...
THSN12J080B25.4R05	9.5	80	80.6	5	58	50	25.4	26	9.5	6	1.13	With	SNMU1206...
THSN12J080B25.4R08	9.5	80	80.6	8	58	50	25.4	26	9.5	6	1.15	With	SNMU1206...
THSN12M080B27.0R05	9.5	80	80.6	5	58	50	27	22	12.4	7	1.17	With	SNMU1206...
THSN12M080B27.0R08	9.5	80	80.6	8	58	50	27	22	12.4	7	1.14	With	SNMU1206...
THSN12J100B31.7R06	9.5	100	100.6	6	60	50	31.75	32	12.7	8	1.43	With	SNMU1206...
THSN12J100B31.7R08	9.5	100	100.6	8	60	50	31.75	32	12.7	8	1.39	With	SNMU1206...
THSN12M100B32.0R06	9.5	100	100.6	6	60	50	32	28.5	14.4	8	1.4	With	SNMU1206...
THSN12M100B32.0R08	9.5	100	100.6	8	60	50	32	28.5	14.4	8	1.38	With	SNMU1206...

Arbor type

Arbor type A



Arbor type B



SPARE PARTS







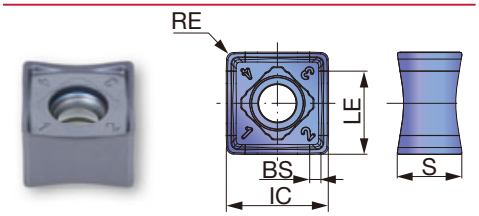
Designation	Clamping screw	Torx bit	Grip	Shell locking bolt	Shell locking bolt (Optional parts)
THSN12U2.00, 2.50...	CSPB-4	BLDIP15/S7	H-TB2W	-	(C0.375X1.125H)
THSN12U3.00...	CSPB-4	BLDIP15/S7	H-TB2W	-	(C0.500X1.375H)
THSN12U4.00...	CSPB-4	BLDIP15/S7	H-TB2W	-	(TMBA-0.750H)
THSN12M050, 063...	CSPB-4	BLDIP15/S7	H-TB2W	CM10x30H	-
THSN12J080..., THSN12M080...	CSPB-4	BLDIP15/S7	H-TB2W	CM12X30H	-
THSN12J100..., THSN12M100...	CSPB-4	BLDIP15/S7	H-TB2W	TMBA-M16H	-

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

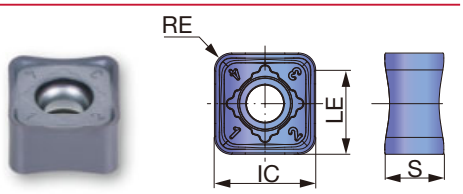
Reference pages: Inserts, Standard cutting conditions → H182

INSERTS

SNMU120608HNEN-MM



SNMU120612/20EN-MM



P	Steel	☆	★	☆		★
M	Stainless		☆	★		★
K	Cast iron	★	☆		★	
N	Non-ferrous					
S	Superalloys	★		☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated					LE	S	IC	BS
			AH120	AH3225	AH3135	T1215	T3225				
SNMU120608HNEN-MM	0.031	0.374	●	●	●	●	●	0.386	0.295	0.472	0.055
SNMU120612EN-MM	0.047	0.374		●	●	●		0.425	0.285	0.472	-
SNMU120620EN-MM	0.079	0.374		●	●	●		0.394	0.276	0.472	-

● : Line up

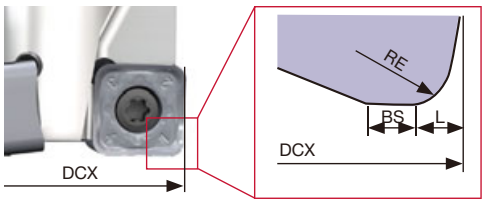
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.	- 200HB	First choice	AH3225	MM	328 - 820	0.002 - 0.012
			For wear resistance	T3225	MM	656 - 1148	0.002 - 0.010
	High carbon and alloy steel 1055, 4140, etc.	- 300HB	First choice	AH3225	MM	328 - 820	0.002 - 0.012
			For wear resistance	T3225	MM	591 - 984	0.002 - 0.010
	Prehardened steel NAK80, PX5, etc.	30 - 40HRC	First choice	AH3225	MM	328 - 656	0.002 - 0.010
			For wear resistance	T3225	MM	492 - 820	0.002 - 0.008
M	Austenitic stainless steel 304, 316, etc.	- 200HB	First choice	AH3135	MM	328 - 656	0.002 - 0.010
			For wear resistance	T3225	MM	328 - 820	0.002 - 0.008
	Cast stainless steel 1.4849, etc.	-	First choice	T3225	MM	197 - 394	0.002 - 0.008
			For fracture resistance	AH3135	MM	197 - 394	0.002 - 0.008
K	Gray cast iron Class 25, etc.	150 - 250HB	First choice	T1215	MM	328 - 1148	0.002 - 0.012
			For fracture resistance	AH120	MM	328 - 820	0.002 - 0.012
	Ductile cast iron 65-45-12, etc.	150 - 250HB	First choice	T1215	MM	328 - 1148	0.002 - 0.010
			For fracture resistance	AH120	MM	262 - 656	0.002 - 0.012
S	Titanium alloys Ti-6Al-4V, etc.	- 40HRC	First choice	AH3135	MM	98 - 197	0.002 - 0.008
	Heat-resistant alloys Inconel718, etc.	- 40HRC	First choice	AH120	MM	33 - 131	0.002 - 0.006
H	Hardened steel H13, etc.	40 - 50HRC	First choice	AH3225	MM	262 - 427	0.002 - 0.006
	Hardened steel D2, etc.	50 - 60HRC	First choice	AH120	MM	164 - 230	0.001 - 0.003

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

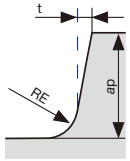
Tool offset

To eliminate uncut amount in face milling operation, adjust the programming according to the offset (L) listed below.



Inch	RE	BS	L
SNMU120608HNEN-MM	0.031	0.055	0.051
SNMU120612EN-MM	0.047	-	0.067
SNMU120620EN-MM	0.079	-	0.098

The following table shows the amount overcut (t) when the cutter is used as a shoulder milling cutter.



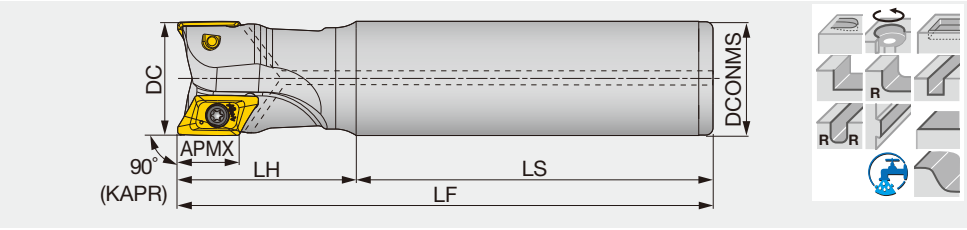
Inch	*ap* (in)									
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354	0.374
SNMU120608HNEN-MM	0.0004	0.0016	0.0020	0.0020	0.0028	0.0035	0.0055	0.0079	0.0106	0.0106
SNMU120612EN-MM	-	0	0	0.0004	0.0008	0.0020	0.0035	0.0059	0.0087	0.0098
SNMU120620EN-MM	-	0	0	0	0.0008	0.0020	0.0035	0.0059	0.0087	0.0098

EPXV16

90° shoulder endmill for aluminium machining, shank type, with screw clamp system

GAMP = +6° ~ +10°, GAMF = -12° ~ -9°





Inch	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
EPXV16U1.00W1.00R02	1.000	2	1.000	3.000	2.000	5.000	0.820	With	51,400	XVCT16**-AM
EPXV16U1.00W1.00R02L	1.000	2	1.000	4.000	3.000	7.000	1.170	With	51,400	XVCT16**-AM
EPXV16U1.25W1.25R03	1.250	3	1.250	4.000	2.000	6.000	1.680	With	46,000	XVCT16**-AM
EPXV16U1.25W1.25R03L	1.250	3	1.250	5.000	3.000	8.000	2.270	With	46,000	XVCT16**-AM
EPXV16U1.50W1.25R03	1.500	3	1.250	5.000	2.000	7.000	2.080	With	42,000	XVCT16**-AM

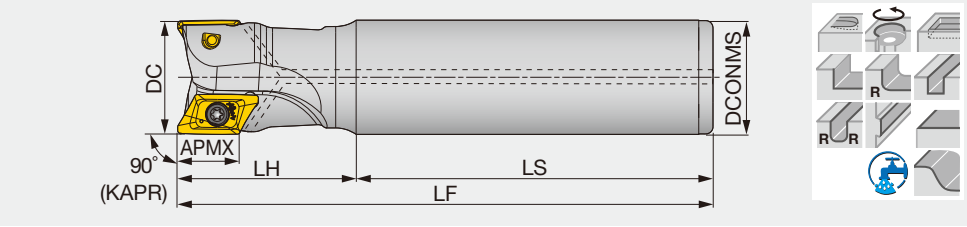
Metric	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
EPXV16M025C25.0R02	25	2	25	70	55	125	0.37	With	52,000	XVCT16**-AM
EPXV16M025C25.0R02L	25	2	25	100	70	170	0.53	With	52,000	XVCT16**-AM
EPXV16M032C32.0R03	32	3	32	100	50	150	0.76	With	46,000	XVCT16**-AM
EPXV16M032C32.0R03L	32	3	32	120	80	200	1.03	With	46,000	XVCT16**-AM
EPXV16M040C32.0R03	40	3	32	115	55	170	0.94	With	41,200	XVCT16**-AM

EPV16

90° shoulder endmill for aluminum machining, shank type, with screw clamp system

GAMP = +6° ~ +10°, GAMF = -12° ~ -9°





Inch	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
EPV16R100U0100W02	1.000	2	1.000	3.000	2.000	5.000	0.820	With	38,000	XVCT1605...
EPV16R100U0100W02L	1.000	2	1.000	4.000	3.000	7.000	1.170	With	38,000	XVCT1605...
EPV16R125U0125W02	1.250	2	1.250	4.000	2.000	6.000	1.690	With	34,000	XVCT1605...
EPV16R125U0125W02L	1.250	2	1.250	5.000	3.000	8.000	2.280	With	34,000	XVCT1605...
EPV16R125U0125W03	1.250	3	1.250	4.000	2.000	6.000	1.680	With	34,000	XVCT1605...
EPV16R125U0125W03L	1.250	3	1.250	5.000	3.000	8.000	2.270	With	34,000	XVCT1605...
EPV16R150U0125W03	1.500	3	1.250	5.000	2.000	7.000	2.080	With	30,000	XVCT1605...
EPV16R150U0125W03L	1.500	3	1.250	8.000	2.000	10.000	3.140	With	30,000	XVCT1605...

Metric	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
EPV16R025M25.0-02	25	2	25	70	55	125	0.37	With	38,000	XVCT1605...
EPV16R025M25.0-02L	25	2	25	100	70	170	0.53	With	38,000	XVCT1605...
EPV16R032M32.0-02	32	2	32	100	50	150	0.77	With	34,000	XVCT1605...
EPV16R032M32.0-02L	32	2	32	120	80	200	1.03	With	34,000	XVCT1605...
EPV16R032M32.0-03	32	3	32	100	50	150	0.76	With	34,000	XVCT1605...
EPV16R032M32.0-03L	32	3	32	120	80	200	1.03	With	34,000	XVCT1605...
EPV16R040M32.0-03	40	3	32	115	55	170	0.94	With	30,000	XVCT1605...
EPV16R040M32.0-03L	40	3	32	195	55	250	1.43	With	30,000	XVCT1605...

SPARE PARTS





Designation	Clamping screw	Grip	Torx bit
EPXV16U1.00W..., EPXV16M025..., EPV16R100U..., EPV16R025M...	TS40085I/HG	H-TBS	BT15S
EPXV16U1.25W..., EPXV16U1.50W EPXV16M032..., EPXV16M040..., EPV16R125, 150U..., EPV16R032, 040M...	TS40093I/HG	H-TBS	BT15S

Recommended clamping torque: 3.32 lbs·ft, 4.5 N·m

Reference pages: Inserts, Standard cutting conditions → H186

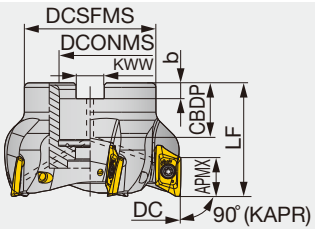
TUNG-ALUMILL

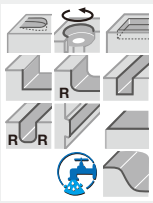
TPXV16

90° shoulder mill for aluminium machining, with screw clamp system

GAMP = +10° ~ +11°, GAMF = -9° ~ -5.5°







Inch	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
TPXV16U1.50B0.75R03	1.500	3	1.421	0.750	0.750	2.000	0.170	0.315	0.440	With	42,000	XVCT16**-AM
TPXV16U2.00B0.75R04	2.000	4	1.890	0.750	0.750	2.000	0.170	0.315	0.890	With	36,400	XVCT16**-AM
TPXV16U2.50B1.00R05	2.500	5	2.165	1.000	0.750	2.000	0.197	0.375	1.340	With	32,500	XVCT16**-AM
TPXV16U3.00B1.00R05	3.000	5	2.362	1.000	0.750	2.000	0.197	0.375	1.920	With	29,700	XVCT16**-AM
TPXV16U4.00B1.50R06	4.000	6	3.150	1.500	1.059	2.500	0.319	0.625	4.280	With	25,700	XVCT16**-AM
TPXV16U5.00B1.50R07	5.000	7	3.740	1.500	1.059	2.500	0.319	0.625	6.700	With	23,000	XVCT16**-AM

Metric	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
TPXV16M040B16.0R03	40	3	38	16	20	50	5.6	8.4	0.23	With	41,200	XVCT16**-AM
TPXV16M050B22.0R04	50	4	45	22	22	50	6.3	10.4	0.33	With	36,800	XVCT16**-AM
TPXV16M063B22.0R05	63	5	47	22	22	50	6.3	10.4	0.54	With	32,700	XVCT16**-AM
TPXV16M080B27.0R05	80	5	58	27	28	50	7	12.4	0.86	With	29,000	XVCT16**-AM
TPXV16M100B32.0R06	100	6	66	32	26	63	8	14.4	1.55	With	26,000	XVCT16**-AM
TPXV16M125B40.0R07	125	7	85	40	32	63	9	16.4	2.53	With	23,200	XVCT16**-AM

SPARE PARTS






Designation	Clamping screw	Grip	Shell locking bolt	Torx bit
TPXV16U1.50..., TPXV16M040...	TS40093I/HG	H-TBS	SHM8X1.25X35-C	BT15S
TPXV16U2.00..., TPXV16U2.50..., TPXV16M050..., TPXV16M063...	TS40093I/HG	H-TBS	SHM10X1.5X30-C	BT15S
TPXV16U3.00..., TPXV16M080...	TS40093I/HG	H-TBS	LHM12X1.75X30-C	BT15S
TPXV16U4.00..., TPXV16M100...	TS40093I/HG	H-TBS	SHM16X2X35-C	BT15S
TPXV16U5.00..., TPXV16M125...	TS40093I/HG	H-TBS	SHM20X2.5X40-C	BT15S

Recommended clamping torque: 3.32 lbs·ft, 4.5 N·m

Reference pages: Inserts, Standard cutting conditions → H186

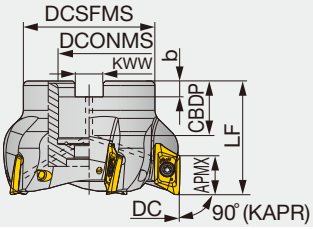
TUNG-ALUMILL

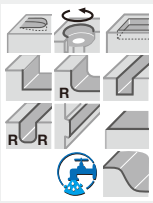
TPV16

90° shoulder mill for aluminum machining, with screw clamp system

GAMP = +10° ~ +11°, GAMF = -9° ~ -5.5°







Inch	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
TPV16R150U0075A03	1.500	3	1.421	0.750	0.750	2.000	0.315	0.170	0.440	With	30,000	XVCT1605...
TPV16R200U0075A04	2.000	4	1.890	0.750	0.750	2.000	0.315	0.170	0.890	With	27,000	XVCT1605...
TPV16R250U0100A05	2.500	5	2.165	1.000	0.750	2.000	0.375	0.197	1.340	With	24,000	XVCT1605...
TPV16R300U0100A05	3.000	5	2.362	1.000	0.750	2.000	0.375	0.197	1.920	With	21,000	XVCT1605...
TPV16R400U0150A06	4.000	6	3.150	1.500	1.059	2.500	0.625	0.319	4.280	With	19,000	XVCT1605...
TPV16R500U0150A07	5.000	7	3.740	1.500	1.059	2.500	0.625	0.319	6.700	With	17,000	XVCT1605...

Metric	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
TPV16R040M16.0E03	40	3	38	16	20	50	5.6	8.4	0.23	With	30,000	XVCT1605...
TPV16R050M22.0E04	50	4	45	22	22	50	6.3	10.4	0.33	With	27,000	XVCT1605...
TPV16R063M22.0E05	63	5	47	22	22	50	6.3	10.4	0.54	With	24,000	XVCT1605...
TPV16R080M27.0E05	80	5	58	27	28	50	7	12.4	0.86	With	21,000	XVCT1605...
TPV16R100M32.0E06	100	6	66	32	26	63	8	14.4	1.55	With	19,000	XVCT1605...
TPV16R125M40.0E07	125	7	85	40	32	63	9	16.4	2.53	With	17,000	XVCT1605...

SPARE PARTS






Designation	Clamping screw	Grip	Shell locking bolt	Torx bit
TPV16R150U0075A03	TS40093I/HG	H-TBS	TCS 9.525-35-I	BT15S
TPV16R200U0075A04	TS40093I/HG	H-TBS	SD06-46	BT15S
TPV16R250, 300U...	TS40093I/HG	H-TBS	SD08-47	BT15S
TPV16R400, 500U...	TS40093I/HG	H-TBS	SD12-82	BT15S
TPV16R040M16.0E03	TS40093I/HG	H-TBS	SHM8X1.25X35-C	BT15S
TPV16R050, 063M...	TS40093I/HG	H-TBS	SHM10X1.5X30-C	BT15S
TPV16R080M27.0E05	TS40093I/HG	H-TBS	LHM12X1.75X30-C	BT15S
TPV16R100M32.0E06	TS40093I/HG	H-TBS	SHM16X2X35-C	BT15S
TPV16R125M40.0E07	TS40093I/HG	H-TBS	SHM20X2.5X40-C	BT15S

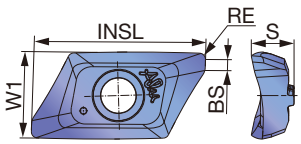
Recommended clamping torque：3.32 lbs·ft, 4.5 N·m

Reference pages: Inserts, Standard cutting conditions → H186

INSERT

XVCT16-AM





P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous ★
S	Superalloys
H	Hard materials

★ : First choice

Designation	RE	APMX	Uncoated TH10	INSL	W1	S	BS
XVCT160504PEFR-AM	0.016	0.630	●	0.874	0.441	0.217	0.059
XVCT160508PEFR-AM	0.031	0.630	●	0.874	0.441	0.217	0.043
XVCT160512PEFR-AM	0.047	0.630	●	0.858	0.441	0.217	0.043
XVCT160516PEFR-AM	0.063	0.630	●	0.835	0.441	0.217	0.043
XVCT160520PEFR-AM	0.079	0.610	●	0.819	0.441	0.213	0.043
XVCT160525PEFR-AM	0.098	0.571	●	0.795	0.441	0.209	0.043
XVCT160530PEFR-AM	0.118	0.571	●	0.772	0.441	0.205	0.039
XVCT160532PEFR-AM	0.126	0.571	●	0.756	0.441	0.205	0.043
XVCT160540PEFR-AM	0.157	0.571	●	0.728	0.441	0.205	0.059
XVCT160550PEFR-AM	0.197	0.571	●	0.720	0.441	0.201	0.024

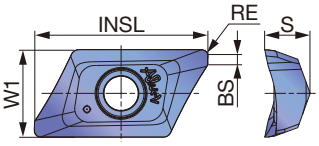
When using inserts with corner radius RE ≥ 0.126",
standard cutter body has to be modified with "R". "R" = RE - 0.012"

● : Line up

XVCT16-AJ

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others





P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous ★
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	RE	APMX	Uncoated TH10	INSL	W1	S	BS
XVCT160504R-AJ	0.016	0.630	●	0.874	0.441	0.232	0.051
XVCT160508R-AJ	0.031	0.630	●	0.874	0.441	0.232	0.039
XVCT160512R-AJ	0.047	0.610	●	0.858	0.441	0.228	0.039
XVCT160516R-AJ	0.063	0.591	●	0.835	0.441	0.226	0.039
XVCT160520R-AJ	0.079	0.571	●	0.819	0.441	0.226	0.039
XVCT160524R-AJ	0.094	0.551	●	0.800	0.441	0.224	0.039
XVCT160525R-AJ	0.098	0.551	●	0.795	0.441	0.224	0.039
XVCT160530R-AJ	0.118	0.551	●	0.772	0.441	0.220	0.039
XVCT160532R-AJ	0.126	0.551	●	0.756	0.441	0.220	0.039
XVCT160540R-AJ	0.157	0.512	●	0.728	0.441	0.217	0.047
XVCT160550R-AJ	0.197	0.512	●	0.720	0.441	0.213	0.016

When using inserts with corner radius RE ≥ 0.126",
standard cutter body has to be modified with "R". "R" = RE - 0.012"

● : Line up

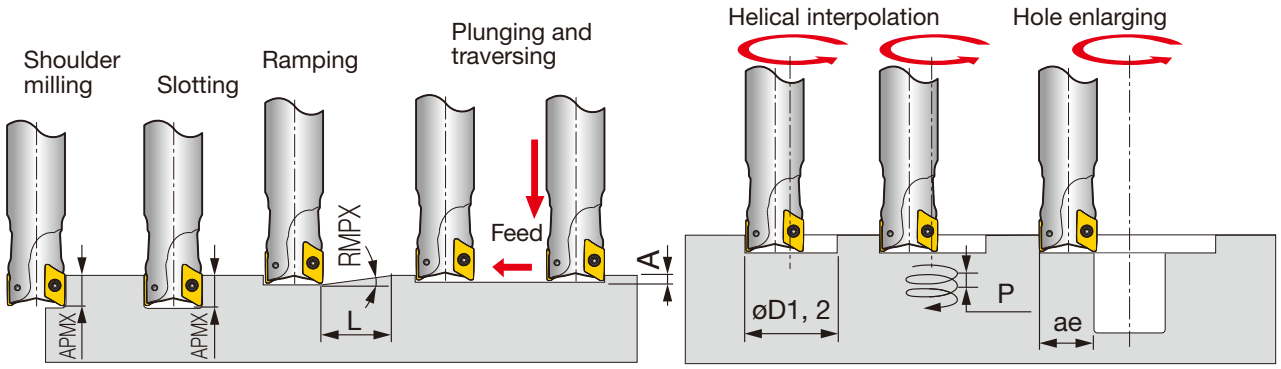
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness HB	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Aluminum alloy	60	TH10	AJ	984 - 16404	0.006 - 0.014
		100	TH10	AJ	656 - 6562	0.004 - 0.010
	Cast aluminum alloy Si ≤ 12%	75	TH10	AJ	656 - 6562	0.006 - 0.012
		90	TH10	AJ	656 - 4921	0.004 - 0.010
	Cast aluminum alloy Si > 12%	130	TH10	AJ	656 - 3281	0.003 - 0.006
	Copper alloys Pb > 1%	110	TH10	AJ	656 - 2625	0.003 - 0.006
	Copper alloys	90	TH10	AJ	984 - 3281	0.004 - 0.006
		100	TH10	AJ	984 - 2625	0.004 - 0.006
	Duroplastics, fiber plastics	-	TH10	AJ	328 - 1640	0.004 - 0.006
	Hard rubber	-	TH10	AJ	328 - 984	0.004 - 0.006

Safety guidelines

1. Use only the original inserts, cutters and spare parts.
2. Insert pocket must be cleaned before clamping the insert.
3. Clamp torque of screw should be 3.32 lbs·ft.
4. For safety reasons, use a new screw when changing the insert.
5. Maximum RPM values are determined based on the burst test. Using RPM beyond maximum values may cause insert breakage, machine damage or personal injury.
6. XVCT insert has sharp cutting edges. Always wear gloves for protection from injury when handling.

APPLICATION RANGE



				Straight ramp down		Step down	Helical ramp down				Hole enlarging
	Tool	Corner radius	Max. depth of cut	Max. ramping angle	Min. length	Max. plunging depth	Min. machining	Min. pitch/rev	Max. machining	Max. pitch/rev	Max. width
Inch	DC	RE	APMX	RMPX	L	A	øD1	P	øD2	P	ae
EPV16R100…	1.000	0.016, 0.031	0.630	22°	1.570	0.166	1.150	0.173	1.970	0.535	0.886
EPV16R100…	1.000	0.047	0.610	22°	1.570	0.166	1.150	0.173	1.970	0.535	0.886
EPV16R100…	1.000	0.063	0.591	22°	1.500	0.146	1.150	0.173	1.970	0.520	0.886
EPV16R100…	1.000	0.079	0.571	22°	1.500	0.146	1.150	0.173	1.970	0.520	0.886
EPV16R100…	1.000	0.118, 0.126	0.551	21°	1.500	0.098	1.150	0.165	1.970	0.484	0.886
EPV16R100…	1.000	0.157, 0.197	0.512	18.5°	1.570	0.090	1.150	0.146	1.970	0.484	0.886
EPV16R125…	1.250	0.016, 0.031	0.630	16.5°	2.130	0.158	1.690	0.346	2.520	0.535	1.134
EPV16R125…	1.250	0.047	0.610	16.5°	2.130	0.158	1.690	0.346	2.520	0.535	1.134
EPV16R125…	1.250	0.063	0.591	16°	2.130	0.138	1.690	0.335	2.520	0.520	1.134
EPV16R125…	1.250	0.079	0.571	16°	2.130	0.138	1.690	0.335	2.520	0.520	1.134
EPV16R125…	1.250	0.118, 0.126	0.551	15°	2.130	0.118	1.700	0.311	2.520	0.484	1.134
EPV16R125…	1.250	0.157, 0.197	0.512	13.5°	2.200	0.098	1.700	0.280	2.520	0.484	1.134
T/EPV16R150…	1.500	0.016, 0.031	0.630	11.5°	3.110	0.158	2.330	0.409	3.150	0.535	1.417
T/EPV16R150…	1.500	0.047	0.610	11.5°	3.110	0.158	2.330	0.409	3.150	0.535	1.417
T/EPV16R150…	1.500	0.063	0.591	11°	3.150	0.138	2.330	0.390	3.150	0.520	1.417
T/EPV16R150…	1.500	0.079	0.571	11°	3.150	0.138	2.330	0.390	3.150	0.520	1.417
T/EPV16R150…	1.500	0.118, 0.126	0.551	10°	3.230	0.118	2.330	0.354	3.150	0.484	1.417
T/EPV16R150…	1.500	0.157, 0.197	0.512	8.5°	3.540	0.098	2.330	0.299	3.150	0.484	1.417
TPV16R200…	2.000	0.016, 0.031	0.630	9.5°	3.780	0.158	3.110	0.512	3.940	0.535	1.772
TPV16R200…	2.000	0.047	0.610	9.5°	3.780	0.158	3.110	0.512	3.940	0.535	1.772
TPV16R200…	2.000	0.063	0.591	9°	3.860	0.138	3.110	0.484	3.940	0.520	1.772
TPV16R200…	2.000	0.079	0.571	9°	3.860	0.138	3.110	0.484	3.940	0.520	1.772
TPV16R200…	2.000	0.118, 0.126	0.551	8°	4.060	0.118	3.110	0.429	3.940	0.484	1.772
TPV16R200…	2.000	0.157, 0.197	0.512	7°	4.330	0.098	3.110	0.374	3.940	0.484	1.772
TPV16R250…	2.500	0.016, 0.031	0.630	7°	5.120	0.158	4.130	0.535	4.960	0.535	2.232
TPV16R250…	2.500	0.047	0.610	7°	5.120	0.158	4.130	0.535	4.960	0.535	2.232
TPV16R250…	2.500	0.063	0.591	6.5°	5.350	0.138	4.130	0.504	4.960	0.520	2.232
TPV16R250…	2.500	0.079	0.571	6.5°	5.350	0.138	4.130	0.504	4.960	0.520	2.232
TPV16R250…	2.500	0.118, 0.126	0.551	6°	5.350	0.118	4.140	0.465	4.960	0.484	2.232
TPV16R250…	2.500	0.157, 0.197	0.512	5.5°	5.510	0.098	4.140	0.425	4.960	0.484	2.232
TPV16R300…	3.000	0.016, 0.031	0.630	5°	7.200	0.158	5.470	0.535	6.300	0.535	2.835
TPV16R300…	3.000	0.047	0.610	5°	7.200	0.158	5.470	0.535	6.300	0.535	2.835
TPV16R300…	3.000	0.063	0.591	4.5°	7.760	0.138	5.470	0.488	6.300	0.520	2.835
TPV16R300…	3.000	0.079	0.571	4.5°	7.760	0.138	5.470	0.488	6.300	0.520	2.835
TPV16R300…	3.000	0.118, 0.126	0.551	4°	8.150	0.118	5.480	0.433	6.300	0.484	2.835
TPV16R300…	3.000	0.157, 0.197	0.512	3.5°	8.700	0.098	5.480	0.378	6.300	0.484	2.835
TPV16R400…	4.000	0.016, 0.031	0.630	3.5°	10.310	0.158	7.040	0.508	7.870	0.535	3.543
TPV16R400…	4.000	0.047	0.610	3.5°	10.310	0.158	7.040	0.508	7.870	0.535	3.543
TPV16R400…	4.000	0.063	0.591	3°	11.650	0.138	7.040	0.437	7.870	0.520	3.543
TPV16R400…	4.000	0.079	0.571	3°	11.650	0.138	7.040	0.437	7.870	0.520	3.543
TPV16R400…	4.000	0.118, 0.126	0.551	2.5°	13.070	0.118	7.050	0.362	7.870	0.484	3.543
TPV16R400…	4.000	0.157, 0.197	0.512	2.5°	12.170	0.098	7.050	0.362	7.870	0.457	3.543
TPV16R500…	5.000	0.016, 0.031	0.630	2.5°	14.450	0.158	9.020	0.476	9.840	0.535	4.429
TPV16R500…	5.000	0.047	0.610	2.5°	14.450	0.158	9.020	0.476	9.840	0.535	4.429
TPV16R500…	5.000	0.063	0.591	2°	17.480	0.138	9.020	0.382	9.840	0.520	4.429
TPV16R500…	5.000	0.079	0.571	2°	17.480	0.138	9.020	0.382	9.840	0.520	4.429
TPV16R500…	5.000	0.118, 0.126	0.551	1.5°	21.810	0.118	9.020	0.287	9.840	0.343	4.429
TPV16R500…	5.000	0.157, 0.197	0.512	1.5°	20.310	0.098	9.020	0.287	9.840	0.343	4.429

EPM11

Square shoulder endmill, shank type, with screw clamp system

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°



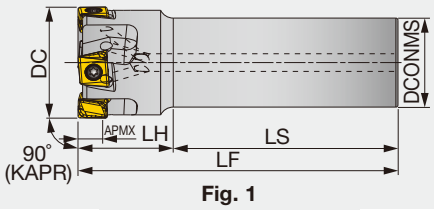


Fig. 1

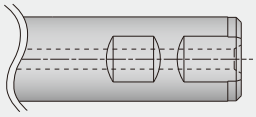
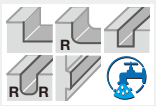


Fig. 2



Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert	Fig.
EPM11R125U0125W03	0.381	1.250	3	1.250	2.250	1.750	4.000	0.66	With	LMMU1107...	2
EPM11R150U0125W04	0.381	1.500	4	1.250	2.250	1.750	4.000	1.10	With	LMMU1107...	2

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert	Fig.
EPM11R032M32.0-03	9.7	32	3	32	80	35	115	0.6	With	LMMU1107...	1
EPM11R040M32.0-04	9.7	40	4	32	80	35	115	0.7	With	LMMU1107...	1
EPM11R050M32.0-04	9.7	50	4	32	80	40	120	0.9	With	LMMU1107...	1
EPM11R063M32.0-06	9.7	63	6	32	80	40	120	1.2	With	LMMU1107...	1
EPM11R080M32.0-07	9.7	80	7	32	80	40	120	1.6	With	LMMU1107...	1

SPARE PARTS





Designation	Clamping screw	Wrench
EPM11...	SM35-114-H0	T-15DF

Recommended clamping torque： 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H192, Standard cutting conditions → H193

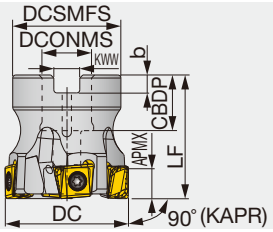
TECMILL

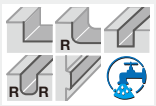
TPM11,16

Square shoulder mill, with screw clamp system

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°







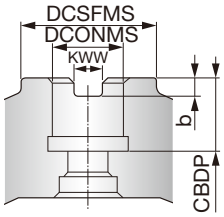
Right hand (R) shown.

Inch	APMX	DC	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPM11R200U0075A05	0.381	2.000	5	1.772	1.570	0.750	0.750	0.315	0.197	0.660	With	LMMU1107...	A
TPM11R250U0075A06	0.381	2.500	6	1.772	1.570	0.750	0.750	0.315	0.197	1.100	With	LMMU1107...	A
TPM11R300U0100A06	0.381	3.000	6	2.165	1.970	1.000	0.750	0.374	0.236	1.980	With	LMMU1107...	A
TPM11R300U0100A08	0.381	3.000	8	2.165	1.970	1.000	0.750	0.374	0.236	2.200	With	LMMU1107...	A
TPM16R300U0100A05	0.594	3.000	5	2.165	1.970	1.000	0.750	0.374	0.236	2.200	With	LMMU1107...	A
TPM11R400U0150A08	0.381	4.000	8	3.071	1.970	1.500	1.063	0.626	0.394	3.090	With	LMMU1107...	B
TPM11R400U0150A11	0.381	4.000	11	3.071	1.970	1.500	1.063	0.626	0.394	3.310	With	LMMU1107...	B
TPM16R400U0150A06	0.594	4.000	6	3.071	1.970	1.500	1.063	0.626	0.394	3.530	With	LMMU1107...	B
TPM16R500U0150A07	0.594	5.000	7	3.071	2.480	1.500	1.063	0.626	0.394	6.610	With	LMMU1107...	B

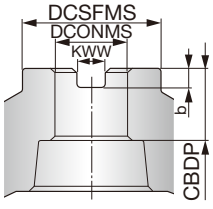
Metric	APMX	DC	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPM11R050M22.0-05	9.7	50	5	41	40	22	20	10	6	0.3	With	LMMU1107...
TPM11R050M22.0E05	9.7	50	5	41	40	22	20	10.4	6.3	0.3	With	LMMU1107...
TPM11R063M22.0-06	9.7	63	6	41	40	22	20	10	6	0.5	With	LMMU1107...
TPM11R063M22.0E06	9.7	63	6	41	40	22	20	10.4	6.3	0.5	With	LMMU1107...
TPM11R080M25.4-07	9.7	80	7	46	50	25.4	26	9.5	6	0.9	With	LMMU1107...
TPM11R080M25.4-09	9.7	80	9	46	50	25.4	26	9.5	6	1	With	LMMU1107...
TPM11R080M27.0E07	9.7	80	7	50	50	27	22	12.4	7	1	With	LMMU1107...
TPM11R080M27.0E09	9.7	80	9	50	50	27	22	12.4	7	1	With	LMMU1107...
TPM16R080M25.4-05	15.1	80	5	46	50	25.4	26	9.5	6	1	With	LMMU1609...
TPM16R080M27.0E05	15.1	80	5	50	50	27	22	12.4	7	1	With	LMMU1609...
TPM11R100M31.7-08	9.7	100	8	60	50	31.75	32	12.7	8	1.4	With	LMMU1107...
TPM11R100M31.7-11	9.7	100	11	60	50	31.75	32	12.7	8	1.5	With	LMMU1107...
TPM11R100M32.0E08	9.7	100	8	60	50	32	28.5	14.4	8	1.4	With	LMMU1107...
TPM11R100M32.0E11	9.7	100	11	60	50	32	28.5	14.4	8	1.5	With	LMMU1107...
TPM16R100M31.7-06	15.1	100	6	60	50	31.75	32	12.7	8	1.6	With	LMMU1609...
TPM16R100M32.0E06	15.1	100	6	60	50	32	28.5	14.4	8	1.5	With	LMMU1609...
TPM16R125M38.1-07	15.1	125	7	80	63	38.1	38	15.9	10	3	With	LMMU1609...
TPM16R125M40.0E07	15.1	125	7	71	63	40	32	16.4	9	2.7	With	LMMU1609...

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Wrench	Shell locking bolt 1	Shell locking bolt 2	Torx bit	Shell locking bolt 3 (Optional parts)
TPM11R200, 250U...	SM35-114-H0	T-15DF	-	-	-	(C0.375X1.125H)
TPM11R300U...	SM35-114-H0	T-15DF	-	-	-	(C0.500X1.375H)
TPM11R400U...	SM35-114-H0	T-15DF	-	-	-	(TMBA-0.750H)
TPM16R300U...	CSTB-5L159	-	-	-	BT20S	(C0.500X1.375H)
TPM16R400, 500U...	CSTB-5L159	-	-	-	BT20S	(TMBA-0.750H)
TPM11R050, 063M...	SM35-114-H0	T-15DF	-	CM10X30H	-	-
TPM11R080M...	SM35-114-H0	T-15DF	-	CM12X30H	-	-
TPM11R100M...	SM35-114-H0	T-15DF	TMBA-M16H	-	-	-
TPM16R080M...	CSTB-5L159	-	-	CM12X30H	BT20S	-
TPM16R100M...	CSTB-5L159	-	TMBA-M16H	-	BT20S	-
TPM16R125M...	CSTB-5L159	-	TMBA-M20H	-	BT20S	-

Recommended clamping torque : SM35-114-H0 = 2.58 lbs·ft, 3.5 N·m, CSTB-5L159 = 3.69 lbs·ft, 5 N·m

Reference pages: Inserts → H192, Standard cutting conditions → H193

TPM16-SA

Square shoulder mill (shell mill)

GAMP = +4.9° ~ +5°, GAMF = -17.5°



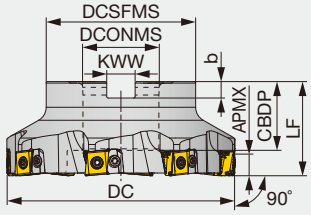


Fig.1

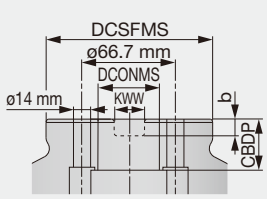


Fig.2

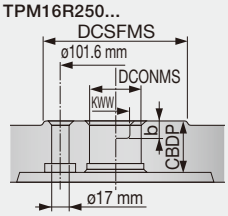


Fig.3

Right hand (R) shown.

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Fig.
TPM16R160M50.8-08SA	15.1	160	8	100	63	50.8	46	19	11	4.6	Without	LMMU1609...	1
TPM16R160M40.0E08SA	15.1	160	8	100	63	40	29	16.4	9	4.37	Without	LMMU1609...	2
TPM16R200M47.6-10SA	15.1	200	10	130	63	47.625	38	25.4	14	6.4	Without	LMMU1609...	3
TPM16R200M60.0E10SA	15.1	200	10	130	63	60	38	25.7	14	5.9	Without	LMMU1609...	3
TPM16R250M47.6-12SA	15.1	250	12	130	63	47.625	38	25.4	14	13.2	Without	LMMU1609...	3
TPM16R250M60.0E12SA	15.1	250	12	130	63	60	38	25.7	14	12.7	Without	LMMU1609...	3

TGM16-SA

60° face mill (shell mill)

GAMP = +11.4° ~ +11.5°, GAMF = -13.5°



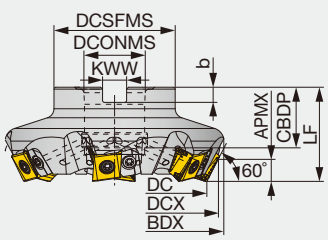


Fig.1

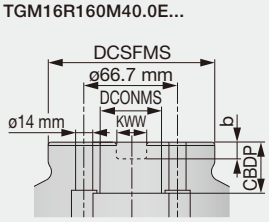


Fig.2

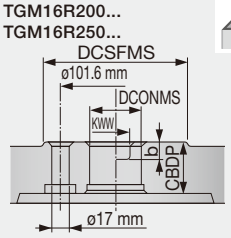


Fig.3

Right hand (R) shown.

Metric	APMX*	DC*	DCX*	BDX	CICT	DCSFMS	LF*	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Fig.
TGM16R100M31.7-06SA	12.4	100	115.3	115.5	6	64	50	31.75	32	12.7	8	1.8	With	LMMU1609...	1
TGM16R100M32.0E06SA	12.4	100	115.3	115.5	6	66	50	32	28.5	14.4	8	1.8	With	LMMU1609...	1
TGM16R125M38.1-07SA	12.4	125	140.3	140.6	7	80	63	38.1	38	15.9	10	3.5	With	LMMU1609...	1
TGM16R125M40.0E07SA	12.4	125	140.3	140.6	7	85	63	40	32	16.4	9	3.4	With	LMMU1609...	1
TGM16R160M50.8-08SA	12.4	160	175.3	174.9	8	100	63	50.8	46	19	11	5.8	Without	LMMU1609...	1
TGM16R160M40.0E08SA	12.4	160	175.3	174.9	8	100	63	40	29	16.4	9	5.5	Without	LMMU1609...	2
TGM16R200M47.6-10SA	12.4	200	215.3	217.2	10	130	63	47.625	38	25.4	14	7.7	Without	LMMU1609...	3
TGM16R200M60.0E10SA	12.4	200	215.3	217.2	10	130	63	60	38	25.7	14	7.2	Without	LMMU1609...	3
TGM16R250M47.6-12SA	12.4	250	265.3	267	12	130	63	47.625	38	25.4	14	14.8	Without	LMMU1609...	3
TGM16R250M60.0E12SA	12.4	250	265.3	267	12	130	63	60	38	25.7	14	14.4	Without	LMMU1609...	3

*The dimensions are true with 1.6 mm-radius inserts

SPARE PARTS








Designation	Clamping screw	Shim	Shim screw	Grip	Torx bit	Shell locking bolt
TPM16..., TGM16R160 - 250...	CSTB-5L159	SA-LMMU1609R	CSTB-5L159	H-TB	BT20S	-
TGM16R100...	CSTB-5L159	SA-LMMU1609R	CSTB-5L159	H-TB	BT20S	TMBA-M16H
TGM16R125...	CSTB-5L159	SA-LMMU1609R	CSTB-5L159	H-TB	BT20S	TMBA-M20H

Recommended clamping torque：5 N·m

Reference pages: Inserts → H192, Standard cutting conditions → H193

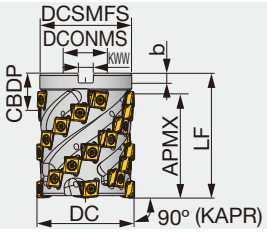
TECMILL

TLM11

Square shoulder mill for roughing, with screw clamp system

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°







Inch	APMX	DC	ZEFP	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TLM11R200U0075A03	2.303	2.000	3	21	1.850	2.750	0.750	0.750	0.315	0.157	1.780	With	LMMU1107...
TLM11R250U0100A04	2.634	2.500	4	32	2.323	3.250	1.000	1.024	0.374	0.236	3.330	With	LMMU1107...

Metric	APMX	DC	ZEFP	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TLM11R050M22.0E03	58.5	50	3	21	47	70	22	20	10.4	6.3	0.8	With	LMMU1107...
TLM11R063M25.4-04	66.9	63	4	32	59	80	25.4	26	9.5	6	1.4	With	LMMU1107...
TLM11R063M27.0E04	66.9	63	4	32	59	80	27	22	12.4	7	1.4	With	LMMU1107...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS





Designation	Clamping screw	Wrench	Shell locking bolt
TLM11R200U0075A03	SM35-114-H0	T-15DF	SD06-A2
TLM11R250U0100A04	SM35-114-H0	T-15DF	SD08-52
TLM11R050M22.0E03	SM35-114-H0	T-15DF	SD06-A3
TLM11R063M...	SM35-114-H0	T-15DF	SD08-98

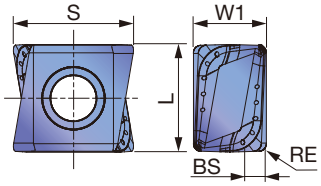
Recommended clamping torque：2.58 lbs·ft, 3.5 N·m

INSERT

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

LMMU11/16-MJ





P	Steel	★	☆				☆
M	Stainless	★			☆		
K	Cast iron			★		☆	
N	Non-ferrous						
S	Superalloys	☆	★	☆			
H	Hard materials		★				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						S	L	W1	BS
			AH3135	AH725	AH120	AH140	T1215	T3225				
LMMU110708PNER-MJ	0.031	0.382	●	●	●	●	●	●	0.461	0.413	0.280	0.079
LMMU110716PNER-MJ	0.063	0.382	●	●	●	●	●	●	0.453	0.413	0.280	0.047
LMMU110724PNER-MJ	0.094	0.382		●	●	●			0.445	0.413	0.280	0.016
LMMU110732PNER-MJ	0.126	0.382		●	●	●			0.437	0.413	0.280	-
LMMU160908PNER-MJ	0.031	0.594	●	●	●	●	●	●	0.681	0.630	0.374	0.094
LMMU160916PNER-MJ	0.063	0.594	●	●	●	●			0.673	0.630	0.374	0.063
LMMU160924PNER-MJ	0.094	0.594		●	●	●			0.665	0.630	0.374	0.031
LMMU160932PNER-MJ	0.126	0.594		●	●	●			0.661	0.630	0.374	-

● : Line up

STANDARD CUTTING CONDITIONS

Bore, shank type

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)	
							TPM16...	TGM16...
P	Low carbon steel 1015, etc.		- 200HB	First choice	AH3135	262 - 820	0.003 - 0.012	0.004 - 0.016
				Wear resistance	T3225	328 - 1148	0.003 - 0.012	0.004 - 0.016
	Carbon steel and alloy steel 1055, 4140, etc.		- 300HB	First choice	AH3135	262 - 820	0.003 - 0.012	0.004 - 0.016
				Wear resistance	T3225	328 - 1148	0.003 - 0.012	0.004 - 0.016
	Prehardend steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	262 - 820	0.002 - 0.010	0.003 - 0.012
M	Stainless steel S30400, etc.		- 200HB	First choice	AH3135	262 - 656	0.002 - 0.010	0.003 - 0.012
				Wear resistance	T3225	328 - 820	0.002 - 0.010	0.003 - 0.012
K	Gray cast iron No.250B, etc.		150 - 250HB	First choice	T1215	328 - 1148	0.003 - 0.012	0.004 - 0.016
				Fracture resistance	AH120	262 - 820	0.003 - 0.012	0.004 - 0.016
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	262 - 820	0.002 - 0.012	0.004 - 0.016
				Wear resistance	T1215	328 - 1148	0.003 - 0.012	0.004 - 0.016
S	Titanium alloys Ti-6Al-4V, etc.		- 45HRC	First choice	AH3135	98 - 197	0.002 - 0.008	0.003 - 0.010
				Wear resistance	AH725	98 - 197	0.002 - 0.008	0.003 - 0.010
	Superalloys Inconel718, etc.		- 45HRC	First choice	AH725	66 - 164	0.0016 - 0.006	0.002 - 0.007
H	Hardened steel	H13, etc.	40 - 55HRC	First choice	AH3135	164 - 427	0.0012 - 0.007	0.002 - 0.008
				Wear resistance	AH725	164 - 427	0.0012 - 0.007	0.002 - 0.008
		D2, etc.	55 - 60HRC	First choice	AH725	131 - 230	0.0012 - 0.004	0.0016 - 0.005

Roughing type

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3135	328 - 820	0.004 - 0.010
				Wear resistance	T3225	492 - 1148	0.004 - 0.008
	Carbon steel and alloy steel 1055, 4140, etc.		- 300 HB	First choice	AH3135	328 - 656	0.004 - 0.008
				Wear resistance	T3225	492 - 984	0.004 - 0.008
	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	328 - 656	0.004 - 0.008
				Wear resistance	T3225	394 - 984	0.004 - 0.008
M	Stainless steel S30400, etc.		- 200 HB	First choice	AH3135	295 - 492	0.004 - 0.010
K	Gray cast iron No.250B, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.004 - 0.010
				Wear resistance	T1215	394 - 1148	0.004 - 0.010
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	328 - 656	0.004 - 0.010
				Wear resistance	T1215	394 - 1148	0.004 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.		- 45HRC	First choice	AH725	66 - 164	0.002 - 0.006
	Superalloys Inconel718, etc.		- 45HRC	First choice	AH725	66 - 131	0.002 - 0.004
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH725	98 - 197	0.003 - 0.006
		D2, etc.	50 - 60 HRC	First choice	AH725	82 - 180	0.002 - 0.004

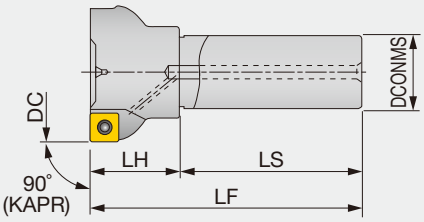
TUNGMILL

EPW13

Square shoulder endmill, shank type, with screw clamp system

GAMP = +11.5°, GAMF = -13° ~ -10.5°





Right hand (R) shown.

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPW13R032M32.0-02	10	32	2	32	80	35	115	0.6	With	SW*T1304...
EPW13R040M32.0-03	10	40	3	32	80	35	115	0.7	With	SW*T1304...
EPW13R050M32.0-03	10	50	3	32	80	40	120	0.9	With	SW*T1304...
EPW13R050M32.0-04	10	50	4	32	80	40	120	0.9	With	SW*T1304...
EPW13R063M32.0-04	10	63	4	32	80	40	120	1	With	SW*T1304...
EPW13R063M32.0-05	10	63	5	32	80	40	120	1	With	SW*T1304...
EPW13R080M32.0-04	10	80	4	32	80	40	120	1.3	With	SW*T1304...
EPW13R080M32.0-06	10	80	6	32	80	40	120	0.8	With	SW*T1304...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shim screw	Shim	Wrench	Wrench
EPW13R032, 040...	CSPB-3.5	M-1000	-	-	IP-15D	-
EPW13R050 - 080...	CSPB-3.5	M-1000	DTS5-3.5SS	FSSP1102	IP-15D	P-3.5

Recommended clamping torque：3.5 N·m

TPW13

Square shoulder mill, with screw clamp system

GAMP = +11.5°, GAMF = -13° ~ -10.5°

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others



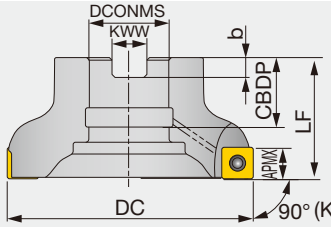


Fig. 1

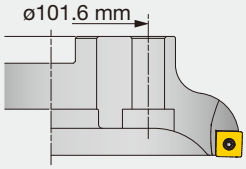


Fig. 2

Right hand (R) shown.

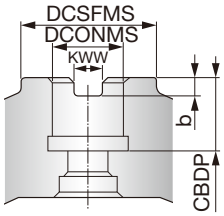
Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type	Fig.
TPW13R200U0075A03	0.394	2.000	3	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A	1
TPW13R200U0075A04	0.394	2.000	4	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A	1
TPW13R200U0075A05	0.394	2.000	5	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A	1
TPW13R300U0100A04	0.394	3.000	4	1.969	1.000	1.024	0.374	0.236	1.760	With	SW*T1304...	A	1
TPW13R300U0100A06	0.394	3.000	6	1.969	1.000	1.024	0.374	0.236	1.540	With	SW*T1304...	A	1
TPW13R300U0100A08	0.394	3.000	8	1.969	1.000	1.024	0.374	0.236	1.760	With	SW*T1304...	A	1
TPW13R400U0150A05	0.394	4.000	5	1.969	1.500	1.378	0.626	0.394	3.530	With	SW*T1304...	B	1
TPW13R400U0150A07	0.394	4.000	7	1.969	1.500	1.378	0.626	0.394	3.310	With	SW*T1304...	B	1
TPW13R400U0150A10	0.394	4.000	10	1.969	1.500	1.378	0.626	0.394	3.310	With	SW*T1304...	B	1
TPW13R500U0150A06	0.394	5.000	6	2.480	1.500	1.457	0.626	0.394	5.510	With	SW*T1304...	B	1
TPW13R500U0150A08	0.394	5.000	8	2.480	1.500	1.457	0.626	0.394	5.290	With	SW*T1304...	B	1
TPW13R500U0150A12	0.394	5.000	12	2.480	1.500	1.457	0.626	0.394	5.510	With	SW*T1304...	B	1
TPW13R600U0200A08	0.394	6.000	8	2.480	2.000	1.496	0.748	0.433	7.940	Without	SW*T1304...	B	1
TPW13R600U0200A12	0.394	6.000	12	2.480	2.000	1.496	0.748	0.433	8.160	Without	SW*T1304...	B	1
TPW13R600U0200A15	0.394	6.000	15	2.480	2.000	1.496	0.748	0.433	8.160	Without	SW*T1304...	B	1

Reference pages: Inserts → H196

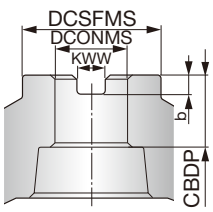
Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Fig.
TPW13R050M22.0-03	10	50	3	40	22	20	10	6	0.3	With	SW*T1304...	1
TPW13R050M22.0-04	10	50	4	40	22	20	10	6	0.3	With	SW*T1304...	1
TPW13R050M22.0E04	10	50	4	40	22	20	10.4	6.3	0.3	With	SW*T1304...	1
TPW13R050M22.0E05	10	50	5	40	22	20	10.4	6.3	0.3	With	SW*T1304...	1
TPW13R063M22.0-04	10	63	4	40	22	20	10	6	0.5	With	SW*T1304...	1
TPW13R063M22.0-05	10	63	5	40	22	20	10	6	0.5	With	SW*T1304...	1
TPW13R063M22.0E05	10	63	5	40	22	20	10.4	6.3	0.4	With	SW*T1304...	1
TPW13R063M22.0E06	10	63	6	40	22	20	10.4	6.3	0.4	With	SW*T1304...	1
TPW13R080M25.4-04	10	80	4	50	25.4	26	9.5	6	0.8	With	SW*T1304...	1
TPW13R080M25.4-06	10	80	6	50	25.4	26	9.5	6	0.8	With	SW*T1304...	1
TPW13R080M27.0E06	10	80	6	50	27	22	12.4	7	0.8	With	SW*T1304...	1
TPW13R080M27.0E08	10	80	8	50	27	22	12.4	7	0.8	With	SW*T1304...	1
TPW13R100M31.7-05	10	100	5	50	31.75	38	12.7	8	1.2	With	SW*T1304...	1
TPW13R100M31.7-07	10	100	7	50	31.75	38	12.7	8	1.2	With	SW*T1304...	1
TPW13R100M32.0E07	10	100	7	50	32	28.5	14.4	8	1.2	With	SW*T1304...	1
TPW13R100M32.0E10	10	100	10	50	32	28.5	14.4	8	1.2	With	SW*T1304...	1
TPW13R125M38.1-06	10	125	6	63	38.1	38	15.9	10	2.4	With	SW*T1304...	1
TPW13R125M38.1-08	10	125	8	63	38.1	38	15.9	10	2.4	With	SW*T1304...	1
TPW13R125M40.0E08	10	125	8	63	40	32	16.4	9	2.4	With	SW*T1304...	1
TPW13R125M40.0E12	10	125	12	63	40	32	16.4	9	2.5	With	SW*T1304...	1
TPW13R160M50.8-08	10	160	8	63	50.8	38	19	11	4	Without	SW*T1304...	1
TPW13R160M50.8-12	10	160	12	63	50.8	38	19	11	4	Without	SW*T1304...	1
TPW13R200M47.6-10	10	200	10	63	47.625	38	25.4	14	7.4	Without	SW*T1304...	2

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Lubricant	Shim screw	Shell locking bolt 1	Shell locking bolt 2	Shim	Wrench 1	Wrench 2
TPW13R200U...	CSPB-3.5	M-1000	DTS5-3.5SS	-	C0.375X1.125H	FSSP1102	IP-15D	P-3.5
TPW13R300U...	CSPB-3.5	M-1000	DTS5-3.5SS	-	C0.500X1.375H	FSSP1102	IP-15D	P-3.5
TPW13R400, 500U...	CSPB-3.5	M-1000	DTS5-3.5SS	-	TMBA-0.750H	FSSP1102	IP-15D	P-3.5
TPW13R600U...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSP1102	IP-15D	P-3.5
TPW13R050, 063M...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM10X30H	FSSP1102	IP-15D	P-3.5
TPW13R080M...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM12X30H	FSSP1102	IP-15D	P-3.5
TPW13R100M...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M16H	-	FSSP1102	IP-15D	P-3.5
TPW13R125M...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M20H	-	FSSP1102	IP-15D	P-3.5
TPW13R160, 200M...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSP1102	IP-15D	P-3.5

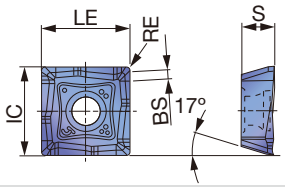
Recommended clamping torque：2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts → H196

INSERT

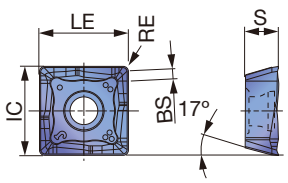
SWGT1304-MJ





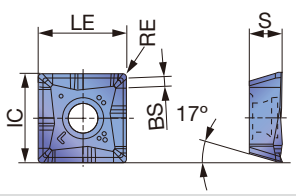
SWMT1304-MJ





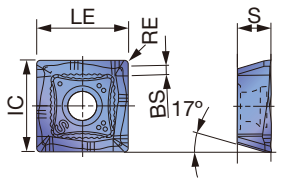
SWMT1304-ML





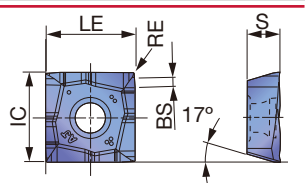
SWMT1304-MS





SWGT1304-AJ





P	Steel	☆			★			☆	☆		★			
M	Stainless		★	☆	★				☆					
K	Cast iron	★				☆	★							
N	Non-ferrous									★			★	
S	Superalloys	★	☆											
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated								Cermet	Uncoated			LE	IC	S	BS
			AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F							
SWGT1304PDPR-MJ	0.031	0.394	●									●				0.535	0.535	0.197	0.055
SWMT1304PDPR-MJ	0.031	0.394	●	●	●	●	●	●	●	●		●				0.535	0.535	0.197	0.055
SWMT1304PDER-ML	0.031	0.394	●			●										0.535	0.535	0.197	0.055
SWMT1304PDPR-MS	0.031	0.394		●	●											0.535	0.535	0.197	0.055
SWGT1304PDFR-AJ	0.000	0.394									●		●			0.535	0.535	0.197	0.063

● : Line up

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

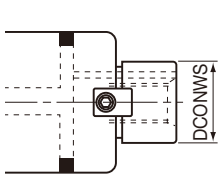
STANDARD CUTTING CONDITIONS

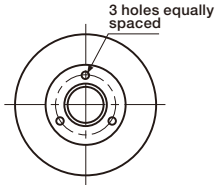
Please scan below.

e-catalog EPW13

e-catalog TPW13

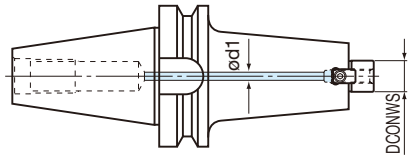
Face mill arbors with center through-coolant hole





Cutter diameter DC (in)	2.000	3.000	4.000 5.000	6.000
Nominal diameter DCONWS (in)	0.750	1.000	1.500	2.000

Notes on arbors: when using TAW13 or TPW13 type, use through center air.



Nominal diameter DCONWS (in)	0.750	1.000	1.500	2.000
Applicable arbor types	FMC SM1	FMA FMC	FMA	FMA
Through hole diameter ød1 (in)	0.20 ~ 0.30	0.25 ~ 0.35	0.40 ~ 0.60	0.40 ~ 0.60

When using the TAW13 or TPW13 type with through center air (coolant or mist), the correct arbor must be used with through center air supplying.

Cautionary notes in use

- In slotting or pocketing, when chips are likely to remain in the cutting zone, internal air supplying or air blow is recommended to prevent chip recutting.
- Use of inserts other than those specified, can result in poor cutting and cause damage to the cutter body. Therefore, specified inserts from the Tungaloy catalogue must be used.
- Before changing or indexing the inserts, remove chips or other foreign matter from the insert, insert pocket and cutter body by using an air blast or cloth.
- The inserts should be clamped by using the wrench supplied with the TAC Mill.
- After a long period of use, the clamping screws and wrench may become deformed or damaged. These elements must be replaced as soon as possible.

EPTC16

Square shoulder endmill, shank type, with screw clamp system

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°



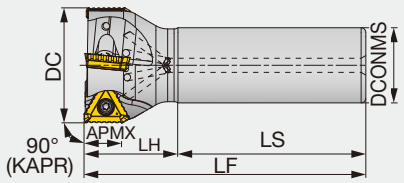


Fig. 1

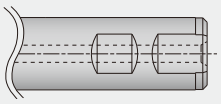


Fig. 2

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert	Fig.
EPTC16U2.00W1.25R04	0.630	2.000	4	1.250	2.250	2.250	4.500	1.700	With	TC*T16...	2

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert	Fig.
EPTC16M050C32.0R04	16	50	4	32	80	40	120	0.8	With	TC*T16...	1
EPTC16M050C42.0R02L	16	50	2	42	310	50	360	3.8	With	TC*T16...	1

SPARE PARTS






Designation	Clamping screw	Grip	Lubricant	Torx bit
EPTC16...	TS 40B100I	H-TB2W	M-1000	BT15S

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H200

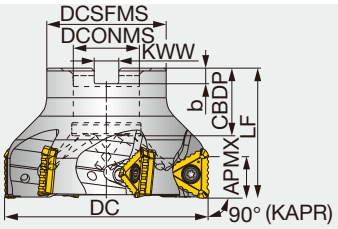
TUNGTSHRED

TPTC16

Square shoulder mill, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°



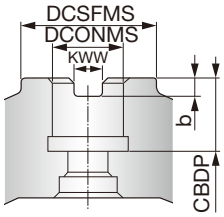


Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPTC16U2.00B0.75R04	0.630	2.000	4	1.625	1.570	0.750	0.750	0.315	0.197	0.710	With	TC*T16...	A
TPTC16U2.50B0.75R05	0.630	2.500	5	2.125	1.570	0.750	0.750	0.315	0.197	1.260	With	TC*T16...	A
TPTC16U3.00B1.00R06	0.630	3.000	6	2.250	1.752	1.000	1.024	0.374	0.236	1.810	With	TC*T16...	A
TPTC16U4.00B1.50R07	0.630	4.000	7	3.000	2.000	1.500	1.193	0.626	0.394	3.170	With	TC*T16...	B

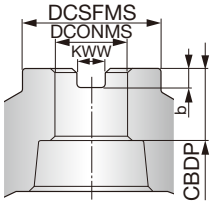
Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPTC16M050B22.0R04	16	50	4	41	40	22	20	10.4	6.3	0.29	With	TC*T16...
TPTC16M063B22.0R05	16	63	5	41	40	22	20	10.4	6.3	0.44	With	TC*T16...
TPTC16J080B25.4R06	16	80	6	46	50	25.4	26	9.5	6	0.88	With	TC*T16...
TPTC16M080B27.0R06	16	80	6	50	50	27	22	12.4	7	0.9	With	TC*T16...
TPTC16J100B31.7R07	16	100	7	60	50	31.75	32	12.7	8	1.38	With	TC*T16...
TPTC16M100B32.0R07	16	100	7	60	50	32	28.5	14.4	8	1.35	With	TC*T16...

Arbor type

Arbor type A



Arbor type B



SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit	Shell locking bolt 3 (Optional parts)
TPTC16U2.00B0.75R04	TS 40B100I	H-TB2W	M-1000	-	TCS9.525-35-I	BT15S	-
TPTC16U2.50B0.75R05	TS 40B100I	H-TB2W	M-1000	-	-	BT15S	(C0.375X1.125H)
TPTC16U3.00B1.00R06	TS 40B100I	H-TB2W	M-1000	-	-	BT15S	(C0.500X1.375H)
TPTC16U4.00B1.50R07	TS 40B100I	H-TB2W	M-1000	-	-	BT15S	(TMBA-0.750H)
TPTC16M050B22.0R04	TS 40B100I	H-TB2W	M-1000	-	FSHM10-40H	BT15S	-
TPTC16M063B22.0R05	TS 40B100I	H-TB2W	M-1000	-	CM10X30H	BT15S	-
TPTC16*080B...	TS 40B100I	H-TB2W	M-1000	-	CM12X30H	BT15S	-
TPTC16*100B...	TS 40B100I	H-TB2W	M-1000	TMBA-M16H	-	BT15S	-

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

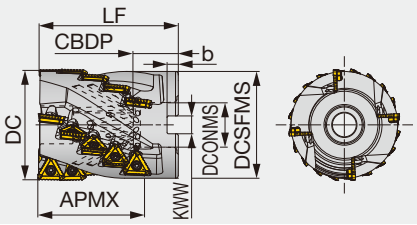
Reference pages: Inserts, Standard cutting conditions → H200

LPTC16

Square shoulder mill for roughing, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°





Inch	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
LPTC16U2.50B1.00L2.4R03	2.402	2.500	3	12	2.350	3.350	1.000	1.024	0.374	0.236	2.820	With	TC*T16...
LPTC16U3.00B1.25L3.0R04	2.992	3.000	4	20	2.839	4.000	1.250	1.260	0.500	0.315	4.670	With	TC*T16...

Metric	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
LPTC16J063B25.4L061R03	61	63	3	12	59	85	25.4	26	9.5	6	1.25	With	TC*T16...
LPTC16M063B27.0L061R03	61	63	3	12	59	85	27	22	12.4	7	1.24	With	TC*T16...
LPTC16J080B31.7L076R04	76	80	4	20	76	100	31.75	32	12.7	8	2.44	With	TC*T16...
LPTC16M080B32.0L076R04	76	80	4	20	76	100	32	25	14.4	8	2.46	With	TC*T16...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS







Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Torx bit
LPTC16U2.50B1.00L2.4R03	TS 40B100I	H-TB2W	M-1000	SD-08-C8	BT15S
LPTC16U3.00B1.25L3.0R04	TS 40B100I	H-TB2W	M-1000	SD-10-54	BT15S
LPTC16*063B...	TS 40B100I	H-TB2W	M-1000	CAP-CM12X1.75X50	BT15S
LPTC16*080B...	TS 40B100I	H-TB2W	M-1000	CM16X75	BT15S

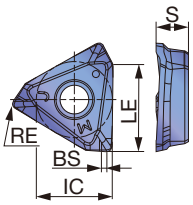
Recommended clamping torque：2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H200

INSERT

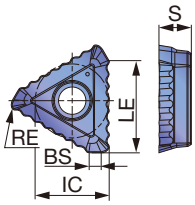
TCGT-MJ





TCMT-NMJ





P	Steel	☆	★		☆
M	Stainless		★		
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	LE	IC	S	BS
TCGT160608PDER-MJ	0.031	0.630	●	●			0.630	0.539	0.228	0.039
TCMT160620PDER-NMJ	0.079	0.630	●	●	●	●	0.630	0.524	0.228	0.079

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1015, 1020, etc.	- 300 HB	First choice	AH3135	NMJ*	330 - 820	0.003 - 0.006
			Wear resistance	T3225	NMJ*	330 - 990	0.003 - 0.006
			For finishing	AH3135	MJ	330 - 820	0.003 - 0.008
	Carbon steels, Alloy steels 1055, 4140, etc.	- 300 HB	First choice	AH3135	NMJ*	330 - 760	0.003 - 0.006
			Wear resistance	T3225	NMJ*	330 - 920	0.003 - 0.006
			For finishing	AH3135	MJ	330 - 760	0.003 - 0.008
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3135	NMJ*	330 - 590	0.003 - 0.006
			Wear resistance	T3225	NMJ*	330 - 200	0.003 - 0.006
			For finishing	AH3135	MJ	330 - 590	0.003 - 0.008
M	Stainless steels 304, 316, etc.	- 250 HB	First choice	AH3135	NMJ*	300 - 660	0.003 - 0.006
			Wear resistance	T3225	NMJ*	300 - 820	0.003 - 0.006
			For finishing	AH3135	MJ	300 - 660	0.003 - 0.008
K	Gray cast irons No.25, No.30, etc.	150 - 250 HB	First choice	AH120	NMJ*	460 - 820	0.003 - 0.006
			Wear resistance	T1215	NMJ*	490 - 980	0.003 - 0.006
			For finishing	AH120	MJ	460 - 820	0.003 - 0.010
	Ductile cast irons 60-40-18, 80-55-06, etc.	150 - 250 HB	First choice	AH120	NMJ*	460 - 820	0.003 - 0.006
			Wear resistance	T1215	NMJ*	490 - 980	0.003 - 0.006
			For finishing	AH120	MJ	460 - 820	0.003 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH120	NMJ*	70 - 200	0.003 - 0.006
			For finishing	AH120	MJ	70 - 200	0.003 - 0.007
	Heat-resistant alloys Inconel718, etc.	-	First choice	AH120	NMJ*	70 - 130	0.003 - 0.005
			For finishing	AH120	MJ	70 - 130	0.003 - 0.006

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

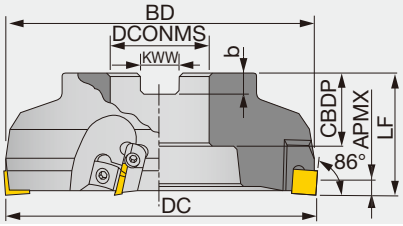
* When using the -NMJ chipbreaker, do not feed higher than 0.006 ipt.

THE4000RIA

86° face mill for aluminum machining, with wedge clamp system, for positive square inserts

GAMP = 13°, GAMF = +7° ~ +9°





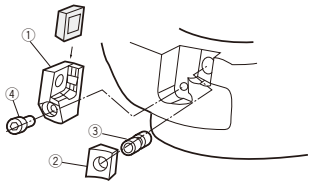
Right hand (R) shown.

Metric	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
THE4003RIA	6	80	4	80	50	25.4	26	9.5	6	1.5	S/WE*N42...
THE4004RIA	6	100	5	99	63	31.75	32	12.7	8	2.1	S/WE*N42...
THE4005RIA	6	125	6	124	63	38.1	38	15.9	10	3.2	S/WE*N42...

SPARE PARTS

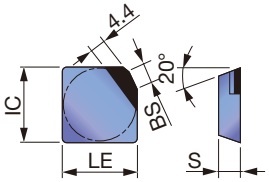
Designation	①Locator	②Wedge	③Wedge fixing screw	④Locator fixing screw	Wrench
THE4003RIA	LE413R	WP440R	FDS-8SS	CM4X0.7X14	TP-4
THE400*RIA	LE413R	WP440R	FDS-8S	CM4X0.7X14	TP-4

Recommended clamping torque：8 N·m

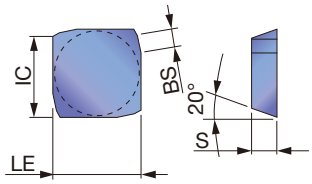


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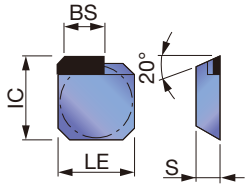
SECN42ZFR-DIA



SEEN/SECN 42Z



WECN42ZFR-DIA



P	Steel					
M	Stainless					
K	Cast iron					
N	Non-ferrous	★		★		
S	Superalloys					
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	APMX	Uncoated	PCD				
		TH10	DX140	LE	IC	S	BS
SECN42ZFR-DIA	0.138		●	0.500	0.500	0.125	0.098
SECN42ZFR	0.236	●		0.500	0.500	0.125	0.098
SEEN42ZFR	0.236	●		0.500	0.500	0.125	0.098
WECN42ZFR-DIA	0.020		●	0.488	0.509	0.125	0.236

T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

● : Line up

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog

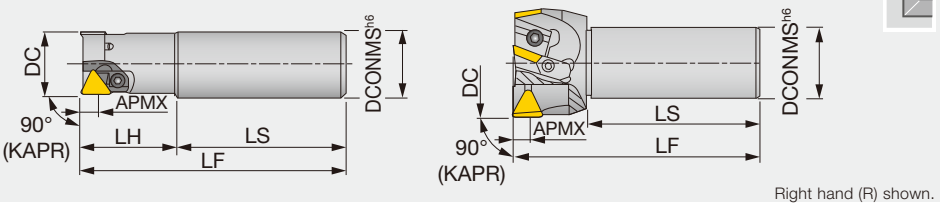
EPO07

ESE3000R

Square shoulder endmill, shank type, with wedge clamp system

GAMP = +17°, GAMP = +5°





Right hand (R) shown.

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	Insert
ESE3020R	8	20	1	20	70	30	100	TE*N32/TEKR1603...
ESE3025R	8	25	1	25	80	35	115	TE*N32/TEKR1603...
ESE3030R	8	30	2	32	80	45	125	TE*N32/TEKR1603...
ESE3035R	8	35	2	32	80	45	125	TE*N32/TEKR1603...
ESE3040R	8	40	2	32	80	45	125	TE*N32/TEKR1603...
ESE3050R	8	50	3	32	80	-	115	TE*N32/TEKR1603...
ESE3063R	8	63	4	32	80	-	115	TE*N32/TEKR1603...

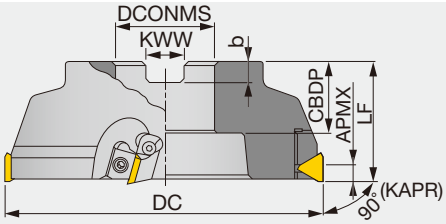
Note: The items do not have variable pitch.

TSE3000R

Square shoulder mill, with wedge clamp system

GAMP = +17°, GAMP = +5°





Right hand (R) shown.

Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TSE3050R	8	50	3	40	22	20	10	6	0.3	TE*N32/TEKR1603...
TSE3050R-E	8	50	3	40	22	20	10.4	6.3	0.3	TE*N32/TEKR1603...
TSE3063R	8	63	3	40	22	20	10	6	0.5	TE*N32/TEKR1603...
TSE3063RE	8	63	3	40	22	20	10.4	6.3	0.5	TE*N32/TEKR1603...
TSE3003RIA	8	80	4	50	25.4	26	9.5	6	1	TE*N32/TEKR1603...
TSE3003RIAE	8	80	4	50	27	26	12.4	7	1	TE*N32/TEKR1603...
TSE3004RIA	8	100	6	63	31.75	32	12.7	8	2	TE*N32/TEKR1603...
TSE3004RIA-E	8	100	6	63	32	32	14.4	8	2	TE*N32/TEKR1603...
TSE3005RIA	8	125	6	63	38.1	38	15.9	10	3.1	TE*N32/TEKR1603...
TSE3006RIA	8	160	8	63	50.8	38	19	11	5.2	TE*N32/TEKR1603...

TSE3050R/L and TSE3063R/L do not have variable pitch.

SPARE PARTS



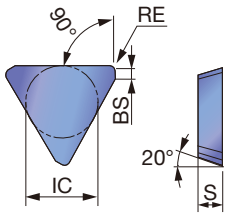
Designation	Clamp set	Locator	Wedge fixing screw	Locator fixing screw	Wedge1	Wedge 2	Wrench 1	Wrench 2
TSE3050R..., 63R... ESE3020R - ESE3040R	CSL-4	-	-	-	-	-	-	P-3
TSE300*RIA (E/-E)	-	LE303R	FDS-8S	CM4X0.7X12	WF330R	-	TP-4	-
ESE3050R, ESE3063R	-	LE302R	DS-8S	SHCM4-10	-	WP302R	TP-4	-

Recommended clamping torque：8 N·m

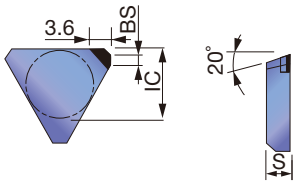
Reference pages: Inserts → H174

INSERT

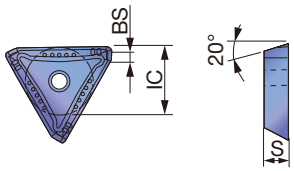
TECN/TEEN 32Z



TECN32ZFR-DIA



TEKR16-MS



P	Steel	★			☆	☆		☆	★		☆	★	☆	☆			
M	Stainless		★	☆					★		☆						
K	Cast iron	★					☆			★							
N	Non-ferrous														★	★	
S	Superalloys	★	☆														
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet		Uncoated		PCD	IC	S	BS
			AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140			
TECN32ZFR	-	0.315														●		0.375	0.125	0.054
TECN32ZTR	0.031	0.315											●	●	●			0.375	0.125	0.039
TEEN32ZFR	-	0.315														●		0.375	0.125	0.054
TEEN32ZTR	0.031	0.315	●	●	●	●	●	●	●	●	●	●	●	●	●			0.375	0.125	0.039
TECN32ZFR-DIA	-	0.098															●	0.375	0.125	0.054
TEKR1603PEPR-MS	-	0.315			●													0.375	0.125	0.059

Note: T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

● : Line up

DX140: 1 piece per package

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
ESE3000R

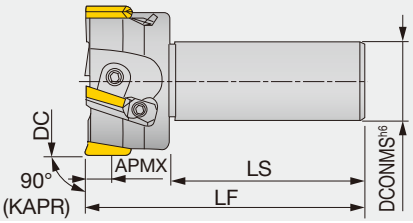
e-catalog
TSE3000R

ESE4000R

Square shoulder endmill, shank type, with wedge clamp system

GAMP = +17°, GAMF = +1° ~ +4°





Right hand (R) shown.

Metric	APMX	DC	CICT	DCONMS	LS	LF	Insert
ESE4050RA	10	50	3	32	80	115	TE*N43/TEKR2204...
ESE4063RA	10	63	4	32	80	115	TE*N43/TEKR2204...
ESE4003RIA-S32	10	80	4	32	80	120	TE*N43/TEKR2204...

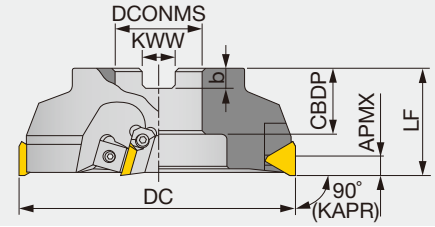
ESE4050RA and ESE4063RA do not have variable pitch.

TSE4000RIAU

Square shoulder mill, with wedge clamp system

GAMP = +17°, GAMF = +5°





Right hand (R) shown.

Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)
TSE4003RIAU	0.394	3.150	4	1.970	1.000	1.020	0.375	0.236	2.20
TSE4004RIAU	0.394	4.000	6	2.480	1.500	1.260	0.500	0.394	4.19
TSE4005RIAU	0.394	4.920	6	2.480	1.500	1.500	0.625	0.394	6.39
TSE4006RIAU	0.394	6.300	8	2.480	2.000	1.500	0.750	0.433	10.80
TSE4008RIA	0.394	7.870	10	2.480	2.500	1.500	1.000	0.551	16.31
TSE4010RIA	0.394	9.840	12	2.480	2.500	1.500	1.000	0.551	30.42
TSE4012RIA	0.394	12.400	14	2.480	2.500	1.500	1.000	0.551	48.72

SPARE PARTS









Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench	Shell locking bolt	Shell locking bolt (Optional parts)
ESE4050RA	LE402AR	DS-8S	-	WT402R	TP-4	SHCM4-10	-
ESE4063RA	LE402AR	DS-8	-	WT402R	TP-4	SHCM4-10	-
ESE4003RIA-S32	LE403R	FDS-8S	CM4X0.7X14	WF330N	TP-4	-	-
TSE4003RIAU	LE403R	FDS-8S	CM4X0.7X14	WF330N	TP-4	-	(C0.500X1.375H)
TSE4004RIAU	LE403R	FDS-8S	CM4X0.7X14	WF330N	TP-4	-	(TMBA-0.750H)
TSE4005RIAU	LE405R	FDS-8S	CM4X0.7X14	WF500R	TP-4	-	(TMBA-0.750H)
TSE4006 - 4012...	LE405R	FDS-8S	CM4X0.7X14	WF500R	TP-4	-	-

Recommended clamping torque : 5.9 lbs·ft, 8 N·m

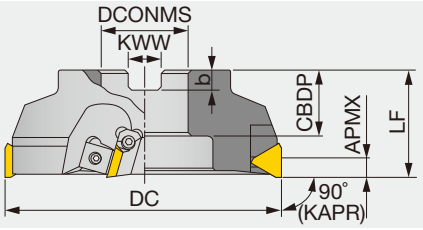
Reference pages: Inserts → H206

TSE4000RIA

Square shoulder mill, with wedge clamp system

GAMP = +17°, GAMF = +5°



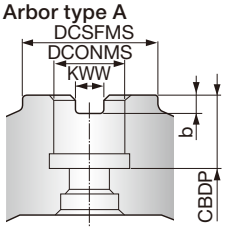


Right hand (R) shown.

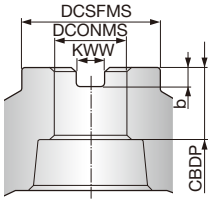
Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Arbor type
TSE4003RIA	10	80	4	50	25.4	22	9.5	60	1	A
TSE4004RIA	10	100	6	63	31.75	32	12.7	80	1.9	A
TSE4005RIA	10	125	6	63	38.1	38	15.9	100	2.9	B
TSE4006RIA	10	160	8	63	50.8	38	19	110	4.9	B
TSE4008RIA	10	200	10	63	47.625	38	25.4	140	7.4	C
TSE4010RIA	10	250	12	63	47.625	38	25.4	140	13.8	C
TSE4012RIA	10	315	14	63	47.625	38	25.4	140	22.1	D
TSE4003RIAE	10	80	4	50	27	26	12.4	70	1	A
TSE4004RIAE	10	100	6	63	32	32	14.4	80	1.9	A
TSE4005RIAE	10	125	6	63	40	32	16.4	90	2.9	B
TSE4006RIAE	10	160	8	63	40	29	16.4	90	4.9	B

Arbor type

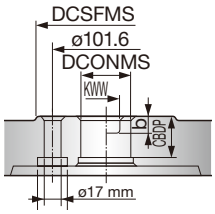
Arbor type A



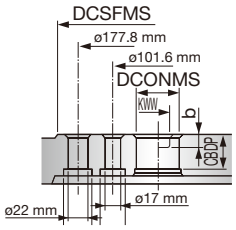
Arbor type B



Arbor type C



Arbor type D



SPARE PARTS







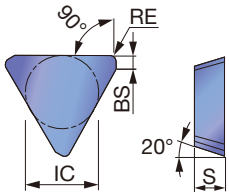

Designation	Locator	Wedge fixing screw	Locator fixing screw	Shell locking bolt	Wedge	Wrench
TSE4003RIA	LE403R	FDS-8SS	CM4X0.7X14	CAP-CM12X1.75X30	WF330N	TP-4
TSE4004RIA	LE403R	FDS-8S	CM4X0.7X14	CAP-CM16X2.0X40	WF330N	TP-4
TSE4005 - 12...	LE405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4
TSE4003RIAE, TSE4004RIAE	LE403R	FDS-8S	CM4X0.7X14	-	WF330N	TP-4
TSE4005RIAE, TSE4006RIAE	LE405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4

Recommended clamping torque：8 N·m

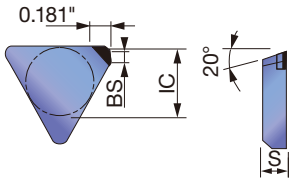
Reference pages: Inserts → H206

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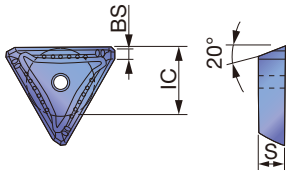
TECN/TEEN 43Z



TECN43ZFR-DIA



TEKR22-MS



		Coated										Cermet		Uncoated		PCD			
	Designation	RE	APMX	AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140	IC	S	BS
P	Steel			☆		☆	☆	☆		☆	★		☆	★	☆	☆					
M	Stainless			☆	★	☆					★		☆								
K	Cast iron			★					☆			★					☆				
N	Non-ferrous																★	★			
S	Superalloys			☆	☆																
H	Hard materials																				
	TECN43ZFR	C0.020	0.394														●		0.500	0.187	0.079
	TECN43ZTR	0.039	0.394											●	●	●			0.500	0.187	0.052
	TEEN43ZFR	C0.020	0.394														●		0.500	0.187	0.079
	TEEN43ZTR	0.039	0.394	●	●	●	●	●	●	●	●	●	●	●	●	●			0.500	0.187	0.052
	TECN43ZFR-DIA	-	0.138															●	0.500	0.187	0.079
	TEKR2204PEPR-MS	-	0.394			●													0.500	0.187	0.071

★ : First choice
☆ : Second choice

Note: T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

● : Line up
DX140: 1 piece per package

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
ESE4000R

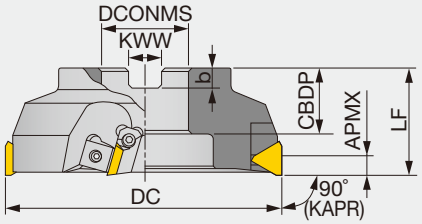
e-catalog
TSE4000RIA

TSP4000RIA-U

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +5°, GAMF = 0°





Right hand (R) shown.

Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)	Insert
TSP4003RIA-U	0.394	3.150	4	1.970	1.000	1.020	0.375	0.236	2.43	TP*N43 / TP*R...
TSP4004RIA-U	0.394	4.000	6	2.480	1.500	1.260	0.625	0.394	4.41	TP*N43 / TP*R...
TSP4005RIA-U	0.394	4.920	6	2.480	1.500	1.500	0.625	0.394	6.83	TP*N43 / TP*R...
TSP4006RIA-U	0.394	6.300	8	2.480	2.000	1.500	0.750	0.433	11.24	TP*N43 / TP*R...
TSP4008RIA-U	0.394	7.870	10	2.480	2.500	1.500	1.000	0.551	16.98	TP*N43 / TP*R...
TSP4010RIA	0.394	9.840	12	2.480	2.500	1.500	1.000	0.551	31.08	TP*N43 / TP*R...
TSP4012RIA	0.394	12.400	14	2.480	2.500	1.500	1.000	0.551	49.82	TP*N43 / TP*R...

SPARE PARTS








Designation	Locator	Wedge	Wedge fixing screw	Locator fixing screw	Wrench	Shell locking bolt (Optional parts)
TSP4003RIA-U	LP403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(C0.500X1.375H)
TSP4004RIA-U	LP403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSP4005RIA-U	LP405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSP4006 - 4012...	LP405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	-

Recommended clamping torque：5.9 lbs·ft

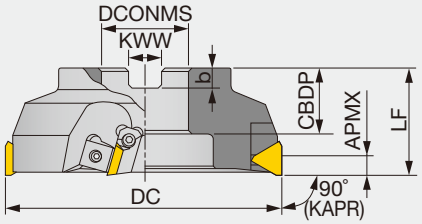
Reference pages: Inserts → H209

TSP4000IA

Square shoulder mill, with wedge clamp system

GAMP = +5°, GAMF = 0°





Right hand (R) shown.

Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TSP4003RIA	10	80	4	50	25.4	26	9.5	6	1.1	TP*N43 / TP*R...
TSP4004RIA	10	100	6	63	31.75	32	12.7	8	2	TP*N43 / TP*R...
TSP4005RIA	10	125	6	63	38.1	38	15.9	10	3.1	TP*N43 / TP*R...
TSP4006RIA	10	160	8	63	50.8	38	19	11	5.1	TP*N43 / TP*R...
TSP4008RIA	10	200	10	63	47.625	38	25.4	14	7.7	TP*N43 / TP*R...
TSP4010RIA	10	250	12	63	47.625	38	25.4	14	14.1	TP*N43 / TP*R...
TSP4012RIA	10	315	14	63	47.625	38	25.4	14	22.6	TP*N43 / TP*R...

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Shell locking bolt	Wedge	Wrench
TSP4003RIA	LP403R	FDS-8S	CM4X0.7X14	CAP-CM12X1.75X30	WF330N	TP-4
TSP4004RIA	LP403R	FDS-8S	CM4X0.7X14	CAP-CM16X2.0X40	WF330N	TP-4
TSP40**RIA	LP405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4

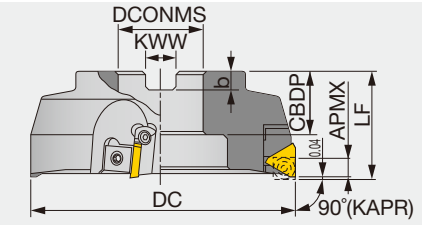
Recommended clamping torque：8 N·m

TFP4000IA

Square shoulder mill with finisher

GAMP = +5°, GAMF = 0°





Right hand (R) shown.

Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TFP4004RIA	10	100	5	63	31.75	32	12.7	8	2	TP*N43 / TP*R...
TFP4005RIA	10	125	6	63	38.1	38	15.9	10	3.1	TP*N43 / TP*R...
TFP4006RIA	10	160	8	63	50.8	38	19	11	5.2	TP*N43 / TP*R...
TFP4008RIA	10	200	10	63	47.625	38	25.4	14	7.9	TP*N43 / TP*R...

A SPARE PARTS FOR FINISHING INSERT

Designation	Clamping screw	Locator	Wedge fixing screw	Locator fixing screw1	Locator fixing screw2	Wedge	Wrench 1	Wrench 2
TFP40...	CSTA-5S	LW400R	FDS-8S	CM4X0.7X14	CM5X0.8X16	FW-305	T-15D	TP-4

Recommended clamping torque：8 N·m

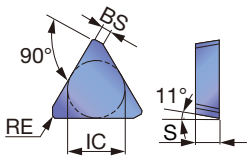
B SPARE PARTS FOR REGULAR INSERT

Designation	Clamping screw	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TFP4004RIA	LP403R	FDS-8S	CM4X0.7X14	WF330N	TP-4
TFP4005 - 08...	LP405R	FDS-8S	CM4X0.7X14	WF500R	TP-4

Recommended clamping torque：8 N·m

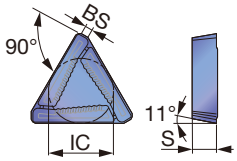
INSERT

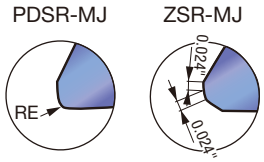
TPCN/TPEN/TPKN 43Z



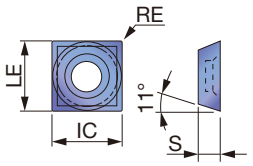
Right hand (R) shown.

TPKR/TPMR-MJ





SPHA-FNW



		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10
P	Steel	★			☆		★	★	☆	☆	
M	Stainless		★	★							
K	Cast iron	★				★					
N	Non-ferrous										★
S	Superalloys	★	☆								
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						Cermet		Uncoated		IC	LE	S	BS
			AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10				
TPCN43ZFR	C0.020	0.394										●	0.500	-	0.187	0.079
TPCN43ZTR	C0.020	0.394							●	●	●		0.500	-	0.187	0.079
TPEN43ZTR	C0.020	0.394							●				0.500	-	0.187	0.079
TPEN43ZTRCR	0.039	0.394						●					0.500	-	0.187	0.079
TPKN43ZFR	C0.020	0.394										●	0.500	-	0.187	0.079
TPKN43ZTR	C0.020	0.394	●	●	●	●	●	●	●	●	●		0.500	-	0.187	0.079
TPKR43ZSR-MJ	-	0.394				●		●					0.500	-	0.187	0.059
TPMR2204PDSR-MJ	0.031	0.394				●		●					0.500	-	0.187	0.047
TPKN43ZFL	C0.020	0.394										●	0.500	-	0.187	0.079
SPHA431FNW	0.016	-								●		●	0.500	0.500	0.187	-

● : Line up

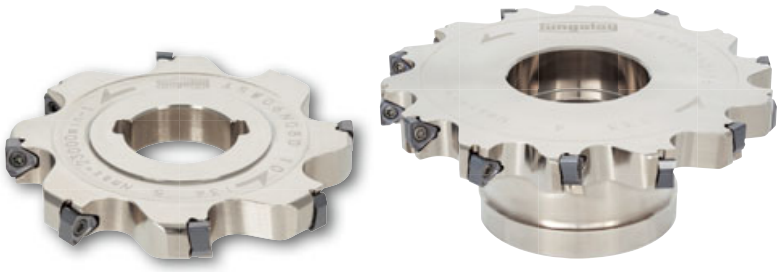
STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
TSP4000IA

e-catalog
TFP4000IA

TUNGUSLOT UNIVERSAL

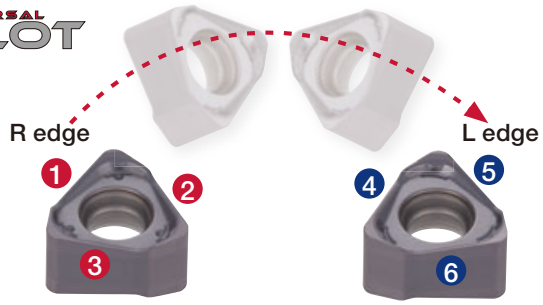


High economy by 6-corner insert with wiper
Machining stability with the cutter design for optimum chip evacuation

High economy by 6-corner insert

6-corner insert provides economical advantage. Self-wiper edge delivers good surface quality.

TUNGUSLOT UNIVERSAL
6 corners
with wiper



ASW / TSW
CW = 0.394", 0.472", 0.551", 0.630"

Excellent chip evacuation even in deep slot milling - optimum pocket design

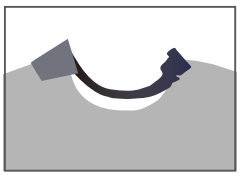
TUNGUSLOT UNIVERSAL

OK



Optimum chipbreaker and big gullets create compact chip formation and smooth evacuation!

Competitor



Unformed chip and narrow gullet cause chip packing.

TUNGUSLOT UNIVERSAL ASW / TSW type

P **Steel** 1055 (200HB)
Edge width: CW = 0.394", Dry
Corner radius: RE = 0.031"

Cutter	Depth of slot: *ae* (in)		
	0.394"	0.787"	1.181"
TUNGUSLOT UNIVERSAL	O	O	O
Competitor A	O	O	X

Chips at *ae* = 1.181" depth

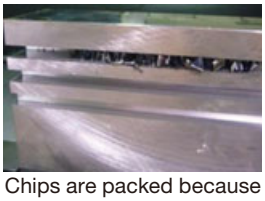
TUNGUSLOT UNIVERSAL



Competitor A



Packed chips



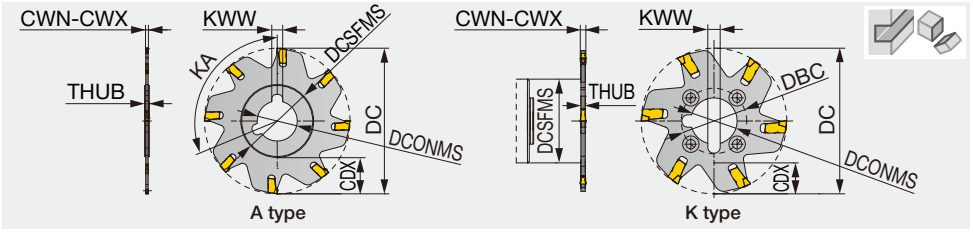
Chips are packed because of bad chip control and flow.

Reference pages: H217 - H219

S/ASG

Side cutter for thin slitting and cutting off





Metric	CW	CWN*	CWX	DC	CICT	Seat size	CDX	DCONMS	THUB	DCSFMS	DBC	KA	KWW	SS	SS	Drive flange	Key	Insert
SSG01R063-E1.6	1.6	1.5	1.79	63	6	1	14	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM1*N/ SSS1*N
SSG02R063-E2	2.2	1.8	2.69	63	6	2	15	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM2*N/ SSS2*N
SSG03R063-E3	3.1	2.7	3.53	63	5	3	15	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM3*N/ SSS3*N
SSG04R063-E4	4.1	3.54	4.52	63	5	4	15	10	3.2	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM4*N/ SSS4*N
ASG01N076-1.6	1.6	1.5	1.79	76.2	8	1	14	25.4	2.4	39	-	112.5	6.35	-	-	-	A	SSM1*N/ SSS1*N
ASG02N076-2	2.2	1.8	2.69	76.2	8	2	17	25.4	2.4	39	-	112.5	6.35	-	-	-	A	SSM2*N/ SSS2*N
ASG01N080-E1.6	1.6	1.5	1.79	80	8	1	16	22	2.4	39	-	112.5	6	-	-	-	A	SSM1*N/ SSS1*N
ASG02N080-E2	2.2	1.8	2.69	80	8	2	20	22	2.4	39	-	112.5	6	-	-	-	A	SSM2*N/ SSS2*N
SSG03R080-3	3.1	2.7	3.53	80	6	3	16	25.4	2.4	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM3*N/ SSS3*N
SSG03R080-E3	3.1	2.7	3.53	80	6	3	19(2)	22	2.4	40(1)	32	-	6	SW32-40	-	R 22-46	K	SSM3*N/ SSS3*N
SSG04R080-4	4.1	3.54	4.52	80	6	4	16	25.4	3.2	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM4*N/ SSS4*N
SSG04R080-E4	4.1	3.54	4.52	80	6	4	19(2)	22	3.2	40(1)	32	-	6	SW32-40	-	R 22-46	K	SSM4*N/ SSS4*N
ASG01N100-1.6	1.6	1.5	1.79	100	10	1	30	25.4	2.4	39	-	90	6.35	-	-	-	A	SSM1*N/ SSS1*N
ASG01N100-E1.6	1.6	1.5	1.79	100	10	1	30	22	2.4	39	-	90	6	-	-	-	A	SSM1*N/ SSS1*N
ASG02N100-2	2.2	1.8	2.69	100	10	2	30	25.4	2.4	39	-	90	6.35	-	-	-	A	SSM2*N/ SSS2*N
ASG02N100-E2	2.2	1.8	2.69	100	10	2	30	22	2.4	39	-	90	6	-	-	-	A	SSM2*N/ SSS2*N
SSG03R100-3	3.1	2.7	3.53	100	6	3	26	25.4	2.4	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM3*N/ SSS3*N
SSG03R100-E3	3.1	2.7	3.53	100	6	3	29(3)	22	2.4	40(1)	32	-	6	SW32-40	-	R 22-46	K	SSM3*N/ SSS3*N
SSG04R100-4	4.1	3.54	4.52	100	6	4	26	25.4	3.2	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM4*N/ SSS4*N
SSG04R100-E4	4.1	3.54	4.52	100	6	4	29(3)	22	3.2	40(1)	32	-	6	SW32-40	-	R 22-46	K	SSM4*N/ SSS4*N
ASG01N125-1.6(4)	1.6	1.5	1.79	125	12	1	30	31.75	2.4	64	-	75	7.92	-	-	-	A	SSM1*N/ SSS1*N
ASG01N125-E1.6(4)	1.6	1.5	1.79	125	12	1	30	27	2.4	64	-	75	7	-	-	-	A	SSM1*N/ SSS1*N
ASG02N125-2(4)	2.2	1.8	2.69	125	12	2	32	31.75	2.4	60	-	75	7.92	-	-	-	A	SSM2*N/ SSS2*N
ASG02N125-E2(4)	2.2	1.8	2.69	125	12	2	32	27	2.4	60	-	75	7	-	-	-	A	SSM2*N/ SSS2*N
SSG03R125-3(4)	3.1	2.7	3.53	125	8	3	34	31.75	2.4	55	45	-	7.92	-	-	R1.25-55	K	SSM3*N/ SSS3*N
SSG03R125-E3(4)	3.1	2.7	3.53	125	8	3	34	32	2.4	55	45	-	8	S32-55	-	R 32-55	K	SSM3*N/ SSS3*N
SSG04R125-4(4)	4.1	3.54	4.52	125	8	4	34	31.75	3.2	55	45	-	7.92	-	-	R1.25-55	K	SSM4*N/ SSS4*N
SSG04R125-E4(4)	4.1	3.54	4.52	125	8	4	34	32	3.2	55	45	-	8	S32-55	-	R 32-55	K	SSM4*N/ SSS4*N

(1) When using a drive flange, DCSFMS = 46 mm
(2) When using a drive flange, CDX = 16 mm
(3) When using a drive flange, CDX = 26 mm

(4) Cutters ø125 mm, only one keyway.
CW = When standard inserts are mounted. CWN, CWX = When special inserts are mounted.
Since a single insert cuts the full groove width, use the insert whose width is equal to the groove width in the application.
(5) CWN** and CWX** shows the min and Max width of insert that can be positioned on the cutter.
The CW dimension depends on the insert width chosen.

Tolerance of slot width*

±0.1

*Just for reference

SPARE PARTS

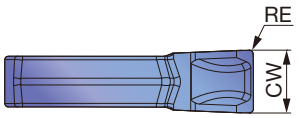
Designation	Grip	Extractor
SSG01/02..., ASG01/02...	ESG0.5	-
SSG03/04...	-	ESG1

Reference pages: Inserts, Standard cutting conditions → H212

INSERT

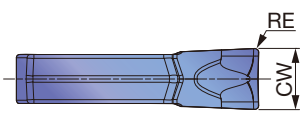
SSM





SSS





P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys				
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated										CW±0.0016"
		GH130										
SSM22N	0.008	●										0.087
SSM31N	0.008	●										0.122
SSM41N	0.010	●										0.161
SSS16N	0.006	●										0.063
SSS22N	0.008	●										0.087
SSS31N	0.008	●										0.122
SSS41N	0.010	●										0.161

● : Line up

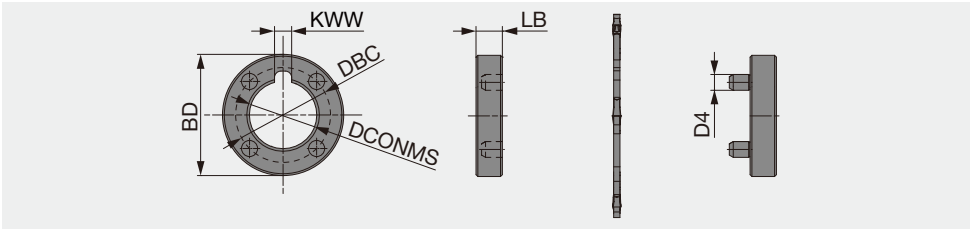
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Insert	Cutting speed *Vc* (sfm)	Chip thickness t (in)
P	Low carbon steel 1015, etc.	- 200	SSM...	490 - 760	0.0020 - 0.006
	High carbon steel 1045, etc.	200 - 300	SSM...	330 - 560	0.0016 - 0.005
	Alloy steel 4140, etc.	150 - 300	SSM...	300 - 530	0.0016 - 0.005
	Tool steel D2, etc.	- 300	SSM...	230 - 390	0.0016 - 0.005
M	Stainless steel 304, etc.	- 200	SSS...	300 - 660	0.0016 - 0.005
K	Gray cast iron No250B, etc.	150 - 250	SSM...	330 - 660	0.0020 - 0.006
	Ductile cast iron 65-45-12, etc.	150 - 250	SSM...	260 - 430	0.0020 - 0.006

R (drive flange set)

Drive flange set for side cutters





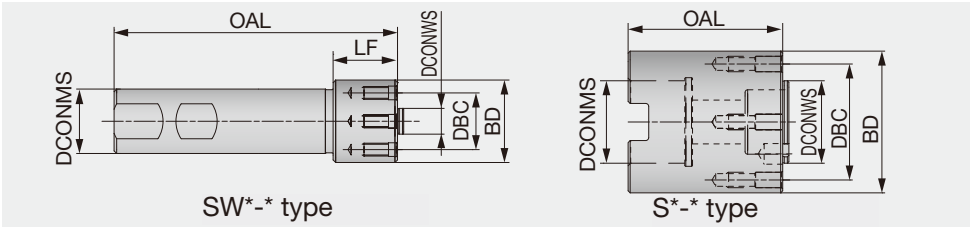
Inch	DCONMS	BD	D4	DBC	LB	KWW
R1.00-46	1.000	1.811	0.197	1.417	0.394	0.250
R1.25-55	1.250	2.165	0.236	1.772	0.394	0.236

Metric	DCONMS	BD	D4	DBC	LB	KWW
R22-46	22	46	6	32	10	6
R1.00-46	25.4	46	5	36	10	6.35
R1.25-55	31.75	55	6	45	10	7.92
R32-55	32	55	6	45	10	8

SW

Drive shank for side cutters





Inch	DCONMS	DCONMS	DCONWS	BD	DBC	LF	OAL
SW1.00-32	1.000	-	0.394	1.260	0.866	1.000	4.331
SW1.25-46	1.250	-	1.000	1.811	1.417	1.181	4.724
S1.25-55	-	1.250	1.250	2.165	1.772	-	2.362

Metric	DCONMS	DCONMS	DCONWS	BD	DBC	LF	OAL
SW25-32	25	-	10	32	22	25	110
SW1.00-32	25.4	-	10	32	22	25.4	110
SW1.25-46	31.75	-	25.4	46	36	30	120
SW32-40	32	-	22	40	32	30	120
SW32-25.4-46-J	32	-	25.4	46	36	30	120
S32-55	-	32	32	55	45	-	60

SPARE PARTS






Designation	Screw	Wrench		
		Mono block type	Torx bit	Grip
SW1.00-32	SR76-961	SETT-15/5	-	-
SW1.25-46	SR76-963	SETT-15/5	-	-
S1.25-55	SR76-943	-	BT20M	H-TB
SW25-32, SW1.00-32	SR76-961	SETT-15/5	-	-
SW32-40, SW32-25.4-46-J, SW1.25-46	SR76-963	SETT-15/5	-	-
S32-55	SR76-943	-	BT20M	H-TB

COMBINATION OF ARBORS / ATTACHMENTS

Cutter bodies : “A” type

A-type disk cutters are without clamping holes on the hub and can be mounted only by using axial drive arbors.





Axial drive arbor

Cutter bodies : “K” type

K-type disk cutters are with clamping holes on the hub and can be mounted by using intermediate shanks or shell adaptors, making it possible to use endmills / shell mill arbors.





Drive flange



Axial drive arbor



Shank adaptor



Shell adaptor



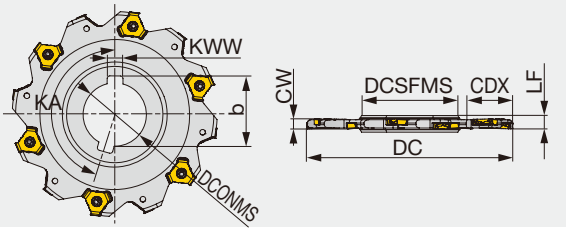
Shell mill / Endmill arbor

Tool dia.	ø2.480"	ø3.150"	ø3.937"	ø4.921"
Drive flange	-	✔	✔	✔
Shank / Shell adaptor	✔	✔	✔	✔

ASV 02/03/04/05

Axial drive slot mill, for tangentially mounted inserts





Inch	CW*	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASV04N300-U025	0.250	3.000	4/8	1.614	1.000	0.394	1.102	0.250	0.595	157.5	TVKX04H3...
ASV05N300-U031	0.313	3.000	4/8	1.614	1.000	0.472	1.102	0.250	0.595	157.5	TVKX0504...
ASV04N400-U025	0.250	4.000	5/10	1.890	1.250	0.394	1.386	0.312	0.957	162	TVKX04H3...
ASV05N400-U031	0.313	4.000	5/10	1.890	1.250	0.472	1.386	0.312	0.957	162	TVKX0504...
ASV04N500-U025	0.250	5.000	6/12	2.283	1.500	0.394	1.665	0.375	1.260	165	TVKX04H3...
ASV05N500-U031	0.313	5.000	6/12	2.283	1.500	0.472	1.665	0.375	1.260	165	TVKX0504...
ASV04N600-U025	0.250	6.000	8/16	2.283	1.500	0.394	1.665	0.375	1.760	168.75	TVKX04H3...
ASV05N600-U031	0.313	6.000	8/16	2.283	1.500	0.472	1.665	0.375	1.760	168.75	TVKX0504...
ASV04N800-U025	0.250	8.000	10/20	2.717	2.000	0.394	2.197	0.500	2.543	171	TVKX04H3...
ASV05N800-U031	0.313	8.000	10/20	2.717	2.000	0.472	2.197	0.500	2.543	171	TVKX0504...

Metric	CW*	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASV02N080-4	4	80	5/10	41	25.4	6	28	6.35	15	162	TVKX0202...
ASV02N080-E4	4	80	5/10	41	27	6	29.8	7	15	162	TVKX0202...
ASV03N080-5	5	80	5/10	41	25.4	6.5	28	6.35	15	162	TVKX03X3...
ASV03N080-E5	5	80	5/10	41	27	6.5	29.8	7	15	162	TVKX03X3...
ASV04N080-6	6	80	4/8	41	25.4	8	28	6.35	17	157.5	TVKX04H3...
ASV04N080-E6	6	80	4/8	41	27	8	29.8	7	17	157.5	TVKX04H3...
ASV05N080-8	8	80	4/8	41	25.4	10	28	6.35	17	157.5	TVKX0504...
ASV05N080-E8	8	80	4/8	41	27	10	29.8	7	17	157.5	TVKX0504...
ASV02N100-4	4	100	6/12	48	31.75	6	35.2	7.92	20	165	TVKX0202...
ASV02N100-E4	4	100	6/12	47	32	6	34.8	8	20	165	TVKX0202...
ASV03N100-5	5	100	6/12	48	31.75	6.5	35.2	7.92	20	165	TVKX03X3...
ASV03N100-E5	5	100	6/12	47	32	6.5	34.8	8	20	165	TVKX03X3...
ASV04N100-6	6	100	5/10	48	31.75	8	35.2	7.92	23.5	162	TVKX04H3...
ASV04N100-E6	6	100	5/10	47	32	8	34.8	8	23.5	162	TVKX04H3...
ASV05N100-8	8	100	5/10	48	31.75	10	35.2	7.92	23.5	162	TVKX0504...
ASV05N100-E8	8	100	5/10	47	32	10	34.8	8	23.5	162	TVKX0504...
ASV02N125-4	4	125	8/16	58	38.1	6	42.3	9.52	30	168.75	TVKX0202...
ASV02N125-E4	4	125	8/16	55	40	6	43.5	10	30	168.75	TVKX0202...
ASV03N125-5	5	125	8/16	58	38.1	6.5	42.3	9.52	30	168.75	TVKX03X3...
ASV03N125-E5	5	125	8/16	55	40	6.5	43.5	10	30	168.75	TVKX03X3...
ASV04N125-6	6	125	6/12	58	38.1	8	42.3	9.52	31	165	TVKX04H3...
ASV04N125-E6	6	125	6/12	55	40	8	43.5	10	32.5	165	TVKX04H3...
ASV05N125-8	8	125	6/12	58	38.1	10	42.3	9.52	31	165	TVKX0504...
ASV05N125-E8	8	125	6/12	55	40	10	43.5	10	32.5	165	TVKX0504...
ASV02N160-4	4	160	10/20	58	38.1	6	42.3	9.52	45	171	TVKX0202...
ASV02N160-E4	4	160	10/20	55	40	6	43.5	10	45	171	TVKX0202...
ASV03N160-5	5	160	10/20	58	38.1	6.5	42.3	9.52	45	171	TVKX03X3...
ASV03N160-E5	5	160	10/20	55	40	6.5	43.5	10	45	171	TVKX03X3...
ASV04N160-6	6	160	8/16	58	38.1	8	42.3	9.52	48.5	168.75	TVKX04H3...
ASV04N160-E6	6	160	8/16	55	40	8	43.5	10	50	168.75	TVKX04H3...
ASV05N160-8	8	160	8/16	58	38.1	10	42.3	9.52	48.5	168.75	TVKX0504...
ASV05N160-E8	8	160	8/16	55	40	10	43.5	10	50	168.75	TVKX0504...
ASV04N200-6	6	200	10/20	69	50.8	8	55.8	12.7	63	171	TVKX04H3...
ASV04N200-E6	6	200	10/20	69	50	8	53.5	12	63	171	TVKX04H3...
ASV05N200-8	8	200	10/20	69	50.8	10	55.8	12.7	63	171	TVKX0504...
ASV05N200-E8	8	200	10/20	69	50	10	53.5	12	63	171	TVKX0504...

CW*: CW of the cutter can be altered by using a special Insert in the same pocket. with in a range

SPARE PARTS

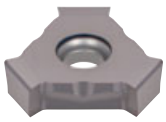
Designation	Clamping screw	Grip	Lubricant	Torx bit	Mono block type Torx bit
ASV02/03N...	SR114-018-L3.40	-	M-1000	-	T-6D
ASV04N...	SR14-500-L5.1	H-TB2W	M-1000	BT15S	-
ASV05N...	SR14-500-L7.0	H-TB2W	M-1000	BT15S	-

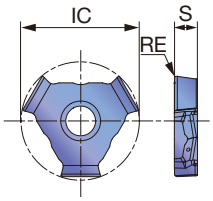
Recommended clamping torque : SR114-018-L3.40 = 0.52 lbs·ft, 0.7 N·m, SR14-500/L5.1, SR14-500-L7.0 = 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H216

INSERT

TVKX-MJ





P	Steel	☆		★	★	
M	Stainless		★	☆	☆	
K	Cast iron	★		☆	☆	
N	Non-ferrous					
S	Superalloys	★	☆	★	★	
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	Coated				S	IC
		AH120	AH130	AH725	SH725		
TVKX020202TN-MJ	0.008	●		●		0.094	0.370
TVKX020202FN-MJ	0.008				●	0.094	0.370
TVKX020204TN-MJ	0.016	●		●		0.094	0.370
TVKX03X302TN-MJ	0.008	●		●		0.126	0.370
TVKX03X302FN-MJ	0.008				●	0.126	0.370
TVKX03X304TN-MJ	0.016	●		●		0.126	0.370
TVKX04H302FN-MJ	0.008				●	0.138	0.665
TVKX04H304TN-MJ	0.016	●	●	●		0.138	0.665
TVKX04H308TN-MJ	0.031	●	●	●		0.138	0.665
TVKX050402FN-MJ	0.008				●	0.177	0.665
TVKX050404TN-MJ	0.016	●	●	●		0.177	0.665
TVKX050408TN-MJ	0.031	●	●	●		0.177	0.665

● : Line up

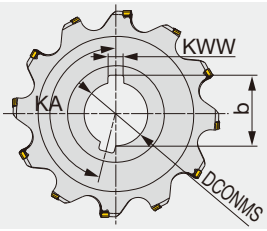
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) ASV *ae* / DC (in) 10%	20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200 HB	First choice	AH725	300 - 590	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
			Fracture resistance	AH130	300 - 590	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
	High carbon steels 1045, etc.	200 - 300 HB	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
			Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
	Alloy steels 4140, etc.	150 - 300 HB	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
			Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
	Tool steels D2, etc.	- 300 HB	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
			Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
M	Stainless steel 304, etc.	- 200 HB	-	AH130	300 - 660	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
K	Gray cast irons No250B, etc.	150 - 250 HB	-	AH120	390 - 760	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
	Ductile cast irons 65-45-12, etc.	150 - 250 HB	-	AH120	300 - 490	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH725	100 - 130	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
			Fracture resistance	AH130	100 - 130	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
	Nickel-based alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	70 - 120	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
			Fracture resistance	AH130	70 - 120	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028

ASW 06/07/09

Axial drive slot mill





Inch	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASW06N300-U037	0.375	3.000	4/8	1.614	1.000	0.375	1.102	0.250	0.654	157.5	WNGU0603...
ASW06N400-U037	0.375	4.000	5/10	1.890	1.250	0.375	1.386	0.312	1.016	162	WNGU0603...
ASW07N400-U050	0.500	4.000	5/10	1.890	1.250	0.500	1.386	0.312	1.016	162	WNGU07T3...
ASW06N500-U037	0.375	5.000	6/12	2.283	1.500	0.375	1.665	0.375	1.319	165	WNGU0603...
ASW07N500-U050	0.500	5.000	6/12	2.283	1.500	0.500	1.665	0.375	1.319	165	WNGU07T3...
ASW06N600-U037	0.375	6.000	7/14	2.283	1.500	0.375	1.665	0.375	1.819	167.14	WNGU0603...
ASW07N600-U050	0.500	6.000	7/14	2.283	1.500	0.500	1.665	0.375	1.819	167.14	WNGU07T3...
ASW09N600-U062	0.625	6.000	7/14	2.283	1.500	0.625	1.665	0.375	1.819	167.14	WNGU0904...

Metric	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASW06N080-10	10	80	4/8	41	25.4	10	28	6.35	18.5	157.5	WNGU0603...
ASW06N080-E10	10	80	4/8	41	27	10	29.8	7	18.5	157.5	WNGU0603...
ASW06N100-10	10	100	5/10	48	31.75	10	35.2	7.92	25	162	WNGU0603...
ASW06N100-E10	10	100	5/10	47	32	10	34.8	8	25.5	162	WNGU0603...
ASW07N100-12	12	100	5/10	48	31.75	12	35.2	7.92	25	162	WNGU07T3...
ASW07N100-E12	12	100	5/10	47	32	12	34.8	8	25.5	162	WNGU07T3...
ASW09N100-14	14	100	5/10	48	31.75	14	35.2	7.92	25	162	WNGU0904...
ASW09N100-E14	14	100	5/10	47	32	14	34.8	8	25.5	162	WNGU0904...
ASW07N125-12	12	125	6/12	58	38.1	12	42.3	9.52	32.5	165	WNGU07T3...
ASW07N125-E12	12	125	6/12	55	40	12	43.5	10	34	165	WNGU07T3...
ASW06N125-10	10	125	6/12	58	38.1	10	42.3	9.52	32.5	165	WNGU0603...
ASW06N125-E10	10	125	6/12	55	40	10	43.5	10	34	165	WNGU0603...
ASW06N160-10	10	160	7/14	58	38.1	10	42.3	9.52	50	167.14	WNGU0603...
ASW06N160-E10	10	160	7/14	55	40	10	43.5	10	51.5	167.14	WNGU0603...
ASW07N160-12	12	160	7/14	58	38.1	12	42.3	9.52	50	167.14	WNGU07T3...
ASW07N160-E12	12	160	7/14	55	40	12	43.5	10	51.5	167.14	WNGU07T3...
ASW09N160-14	14	160	7/14	58	38.1	14	42.3	9.52	50	167.14	WNGU0904...
ASW09N160-E14	14	160	7/14	55	40	14	43.5	10	51.5	167.14	WNGU0904...
ASW09N160-16	16	160	7/14	58	38.1	16	42.3	9.52	50	167.14	WNGU0904...
ASW09N160-E16	16	160	7/14	55	40	16	43.5	10	51.5	167.14	WNGU0904...

SPARE PARTS



Designation	Clamping screw1	Clamping screw2	Grip 1	Grip 2	Lubricant	Torx bit	Wrench
ASW06N...	-	CSPB-2.5	-	-	M-1000	-	IP-8D
ASW07N400, 500-U..., ASW07N100/125-...	-	CSPD-3	-	SW6-SD	M-1000	BLD IP10/S7	-
ASW07N600-U..., ASW07N160-...	-	CSPD-3	-	-	M-1000	-	IP-10D
ASW09N100-...	CSPB-3.5	-	H-TB2W	-	M-1000	BLDIP15/S7	-
ASW09N600-U..., ASW09N160-...	CSPB-3.5	-	-	-	M-1000	-	IP-15D

Recommended clamping torque: CSPB-2.5 = 0.96 lbs·ft, 1.3 N·m, CSPB-3.5 = 2.58 lbs·ft, 3.5 N·m, CSPD-3 = 1.84 lbs·ft, 2.5 N·m

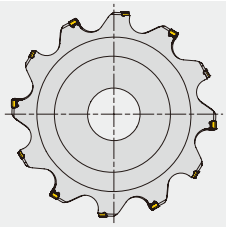
Reference pages: Inserts, Standard cutting conditions → H219

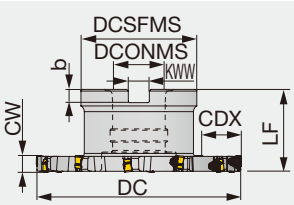
TUNGUSLOT UNIVERSAL

TSW 06/07/09

Radial drive slot mill







Inch	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	Insert
TSW06R400-U037	0.375	4.000	5/10	1.969	1.000	1.969	0.236	0.374	0.976	WNGU0603...
TSW07R400-U050	0.500	4.000	5/10	1.969	1.000	1.969	0.236	0.374	0.976	WNGU07T3...
TSW06R500-U037	0.375	5.000	6/12	2.756	1.250	1.969	0.315	0.500	1.083	WNGU0603...
TSW07R500-U050	0.500	5.000	6/12	2.756	1.250	1.969	0.315	0.500	1.083	WNGU07T3...
TSW06R600-U037	0.375	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU0603...
TSW07R600-U050	0.500	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU07T3...
TSW09R600-U062	0.625	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU0904...

Metric	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	Insert
TSW06R100-10	10	100	5/10	50	25.4	50	6	9.5	24	WNGU0603...
TSW06R100-E10	10	100	5/10	58	27	50	7	12.4	20	WNGU0603...
TSW07R100-12	12	100	5/10	50	25.4	50	6	9.5	24	WNGU07T3...
TSW07R100-E12	12	100	5/10	58	27	50	7	12.4	20	WNGU07T3...
TSW06R125-10	10	125	6/12	70	31.75	50	8	12.7	26.5	WNGU0603...
TSW06R125-E10	10	125	6/12	66	32	50	8	14.4	28.5	WNGU0603...
TSW07R125-12	12	125	6/12	70	31.75	50	8	12.7	26.5	WNGU07T3...
TSW07R125-E12	12	125	6/12	66	32	50	8	14.4	28.5	WNGU07T3...
TSW06R160-10	10	160	7/14	100	38.1	63	10	15.9	29	WNGU0603...
TSW06R160-E10	10	160	7/14	82	40	63	9	16.4	38	WNGU0603...
TSW07R160-12	12	160	7/14	100	38.1	63	10	15.9	29	WNGU07T3...
TSW07R160-E12	12	160	7/14	82	40	63	9	16.4	38	WNGU07T3...
TSW09R160-16	16	160	7/14	100	38.1	63	10	15.9	29	WNGU0904...
TSW09R160-E16	16	160	7/14	82	40	63	9	16.4	38	WNGU0904...

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

INCH SPARE PARTS



Designation	Clamping screw1	Clamping screw2	Grip	Lubricant	Torx bit	Mono block type Torx bit	Shell locking bolt (Optional parts)
TSW06R400-U037	-	CSPB-2.5	-	M-1000	-	IP-8D	(C0.500X1.375H)
TSW07R400-U050	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-	(C0.500X1.375H)
TSW06R500-U037	-	CSPD-3	-	M-1000	-	IP-8D	-
TSW07R500-U050	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-	-
TSW06R600-U037	-	CSPD-3	-	M-1000	-	IP-8D	(TMBA-0.750H)
TSW07R600-U050	-	CSPD-3	-	M-1000	-	IP-10D	(TMBA-0.750H)
TSW09R600-U062	CSPB-3.5	-	-	M-1000	-	IP-15D	(TMBA-0.750H)

Recommended clamping torque: CSPB-2.5 = 0.96 lbs·ft, CSPB-3.5 = 2.58 lbs·ft, CSPD-3 = 1.84 lbs·ft

METRIC SPARE PARTS



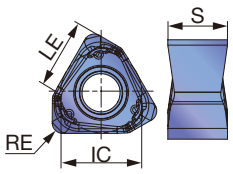
Designation	Clamping screw1	Clamping screw2	Grip	Lubricant	Torx bit	Mono block type Torx bit
TSW06R...	-	CSPB-2.5	-	M-1000	-	IP-8D
TSW07R100/125-...	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-
TSW07R160-...	-	CSPD-3	-	M-1000	-	IP-10D
TSW09R160-...	CSPB-3.5	-	-	M-1000	-	IP-15D

Recommended clamping torque: CSPB-2.5 = 1.3 N·m, CSPB-3.5 = 3.5 N·m, CSPD-3 = 2.5 N·m

INSERT

WNGU-MJ





P	Steel	☆		★	★
M	Stainless		★	☆	★
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆	★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated				LE	IC	S
		AH120	AH130	AH725	AH3135			
WNGU060304TN-MJ	0.016	●			●	0.220	0.240	0.173
WNGU060308TN-MJ	0.031	●	●	●	●	0.220	0.240	0.173
WNGU060310TN-MJ	0.039	●			●	0.220	0.240	0.173
WNGU060316TN-MJ	0.063	●	●	●		0.220	0.240	0.173
WNGU060320TN-MJ	0.079	●			●	0.220	0.240	0.173
WNGU07T304TN-MJ	0.016	●			●	0.268	0.291	0.217
WNGU07T308TN-MJ	0.031	●	●	●		0.268	0.291	0.217
WNGU07T310TN-MJ	0.039	●			●	0.268	0.291	0.217
WNGU07T316TN-MJ	0.063	●	●	●		0.268	0.291	0.217
WNGU07T320TN-MJ	0.079	●			●	0.268	0.291	0.217
WNGU090404TN-MJ	0.016	●			●	0.335	0.339	0.256
WNGU090408TN-MJ	0.031	●	●	●		0.335	0.339	0.256
WNGU090410TN-MJ	0.039	●			●	0.335	0.339	0.256
WNGU090416TN-MJ	0.063	●	●	●		0.335	0.339	0.256
WNGU090420TN-MJ	0.079	●			●	0.335	0.339	0.256

● : Line up

STANDARD CUTTING CONDITIONS

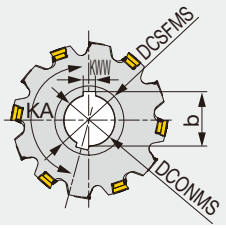
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) TSW / ASW ae / DC (in) 10%	20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200 HB	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
			Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	High carbon steels 1045, etc.	200 - 300 HB	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
			Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	Alloy steels 4140, etc.	150 - 300 HB	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
			Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	Tool steels D2, etc.	- 300 HB	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
			Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
M	Stainless steel 304, etc.	- 200 HB	-	AH130	300 - 660	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
K	Gray cast irons No250B, etc.	150 - 250 HB	-	AH120	390 - 760	0.0047 - 0.0165	0.0035 - 0.0122	0.0028 - 0.0106	0.0028 - 0.0098
	Ductile cast irons 65-45-12, etc.	150 - 250 HB	-	AH120	300 - 490	0.0047 - 0.0165	0.0035 - 0.0122	0.0028 - 0.0106	0.0028 - 0.0098
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH725	100 - 130	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
			Fracture resistance	AH130	100 - 130	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
	Nickel-based alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	70 - 120	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
			Fracture resistance	AH130	70 - 120	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039

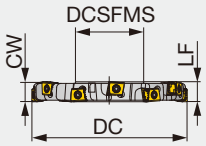
TANGENTIAL TECTSLOT

ASN 10/12/15

Axial drive slot mill, for tangentially mounted inserts







Metric	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASN10R100M31.7-16-05	16	100	5	10	48	31.75	16	35.2	7.92	25	162	LMEU1008**ZNEN-MJ
ASN10R100M32.0E16-05	16	100	5	10	47	32	16	34.8	8	25.5	162	LMEU1008**ZNEN-MJ
ASN12R100M31.7-19-05	19	100	5	10	48	31.75	19	35.2	7.92	25	162	LMEU1206**ZNEN-MJ
ASN12R100M32.0E19-05	19	100	5	10	47	32	19	34.8	8	25.5	162	LMEU1208**ZNEN-MJ
ASN10R125M38.1-16-06	16	125	6	12	58	38.1	16	42.3	9.52	32.5	165	LMEU1008**ZNEN-MJ
ASN10R125M40.0E16-06	16	125	6	12	55	40	16	43.5	10	34	165	LMEU1008**ZNEN-MJ
ASN12R125M38.1-19-06	19	125	6	12	58	38.1	19	42.3	9.52	32.5	165	LMEU1206**ZNEN-MJ
ASN12R125M40.0E19-06	19	125	6	12	55	40	19	43.5	10	34	165	LMEU1208**ZNEN-MJ
ASN15R125M38.1-25-05	25	125	5	10	58	38.1	25	42.3	9.52	32.5	162	LMEU1509**ZNEN-MJ
ASN15R125M40.0E25-05	25	125	5	10	55	40	25	43.5	10	34	165	LMEU1509**ZNEN-MJ
ASN10R160M38.1-16-07	16	160	7	14	58	38.1	16	42.3	9.52	50	167.14	LMEU1008**ZNEN-MJ
ASN10R160M40.0E16-07	16	160	7	14	55	40	16	43.5	10	51.5	167.14	LMEU1008**ZNEN-MJ
ASN12R160M38.1-19-07	19	160	7	14	58	38.1	19	42.3	9.52	50	167.14	LMEU1206**ZNEN-MJ
ASN12R160M40.0E19-07	19	160	7	14	55	40	19	43.5	10	51.5	167.14	LMEU1208**ZNEN-MJ
ASN15R160M38.1-25-06	25	160	6	12	58	38.1	25	42.3	9.52	50	165	LMEU1509**ZNEN-MJ
ASN15R160M40.0E25-06	25	160	6	12	55	40	25	43.5	10	51.5	167.14	LMEU1509**ZNEN-MJ
ASN10R200M50.0E16-08	16	200	8	16	69	50	16	53.6	12	64.5	168.75	LMEU1008**ZNEN-MJ
ASN12R200M50.0E19-08	19	200	8	16	69	50	19	53.6	12	64.5	168.75	LMEU1208**ZNEN-MJ
ASN12R250M50.0E19-09	19	250	9	18	84	50	19	53.6	12	82	170	LMEU1208**ZNEN-MJ
ASN15R200M50.0E25-07	25	200	7	14	69	50	25	53.6	12	64.5	168.75	LMEU1509**ZNEN-MJ
ASN15R250M50.0E25-08	25	250	8	16	84	50	25	53.6	12	82	170	LMEU1509**ZNEN-MJ

SPARE PARTS





Designation	Clamping screw	Grip	Torx bit
ASN10/12R...	SM40-143-H0	H-TB	BT15S
ASN15R...	CSTB-5L159	H-TB	BT20S

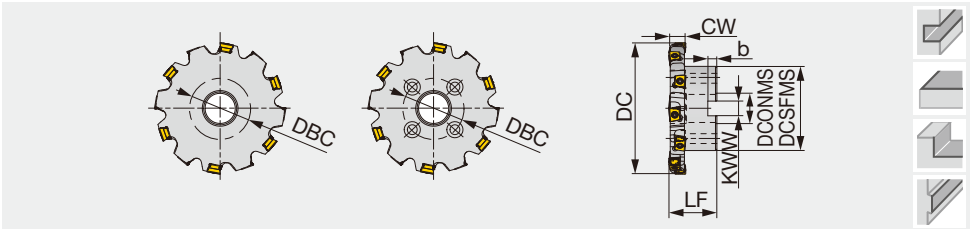
Recommended clamping torque：SM40-143-H0 = 2.58 lbs･ft, 3.5 N･m, CSTB-5L159 = 3.69 lbs･ft, 5 N･m

Reference pages: Inserts, Standard cutting conditions → H222

TSN

Radial drive slot mill, for tangentially mounted inserts





Metric	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	DBC	Insert
TSN10R100M25.4-16-05	16	100	5	10	50	25.4	50	6	9.5	24	-	LMEU1008**ZNEN-MJ
TSN10R100M27.0E16-05	16	100	5	10	58	27	50	7	12.4	20	-	LMEU1008**ZNEN-MJ
TSN12R100M25.4-19-05	19	100	5	10	50	25.4	50	6	9.5	24	-	LMEU1208**ZNEN-MJ
TSN12R100M27.0E19-05	19	100	5	10	58	27	50	7	12.4	20	-	LMEU1208**ZNEN-MJ
TSN10R125M31.7-16-06	16	125	6	12	70	31.75	50	8	12.7	26.5	-	LMEU1008**ZNEN-MJ
TSN10R125M32.0E16-06	16	125	6	12	66	32	50	8	14.4	28.5	-	LMEU1008**ZNEN-MJ
TSN12R125M31.7-19-06	19	125	6	12	70	31.75	50	8	12.7	26.5	-	LMEU1208**ZNEN-MJ
TSN12R125M32.0E19-06	19	125	6	12	66	32	50	8	14.4	28.5	-	LMEU1208**ZNEN-MJ
TSN15R125M31.7-25-05	25	125	5	10	70	31.75	50	8	12.7	26.5	-	LMEU1509**ZNEN-MJ
TSN15R125M32.0E25-05	25	125	5	10	66	32	50	8	14.4	28.5	-	LMEU1509**ZNEN-MJ
TSN10R160M38.1-16-07	16	160	7	14	100	38.1	63	10	15.9	29	-	LMEU1008**ZNEN-MJ
TSN10R160M40.0E16-07	16	160	7	14	82	40	63	9	16.4	38	-	LMEU1008**ZNEN-MJ
TSN12R160M38.1-19-07	19	160	7	14	100	38.1	63	10	15.9	29	-	LMEU1208**ZNEN-MJ
TSN12R160M40.0E19-07	19	160	7	14	82	40	63	9	16.4	38	-	LMEU1208**ZNEN-MJ
TSN15R160M38.1-25-06	25	160	6	12	100	38.1	63	10	15.9	29	-	LMEU1509**ZNEN-MJ
TSN15R160M40.0E25-06	25	160	6	12	82	40	63	9	16.4	38	-	LMEU1509**ZNEN-MJ
TSN10R200M40.0E16-08	16	200	8	16	95	40	63	9	16.4	55	66.7	LMEU1008**ZNEN-MJ
TSN10R200M47.6-16-08	16	200	8	16	135	47.625	63	14	25.4	31.5	101.6	LMEU1008**ZNEN-MJ
TSN12R200M40.0E19-08	19	200	8	16	95	40	63	9	16.4	55	66.7	LMEU1208**ZNEN-MJ
TSN12R200M47.6-19-08	19	200	8	16	135	47.625	63	14	25.4	31.5	101.6	LMEU1208**ZNEN-MJ
TSN15R200M40.0E25-07	25	200	7	14	95	40	63	9	16.4	55	66.7	LMEU1509**ZNEN-MJ
TSN15R200M47.6-25-07	25	200	7	14	135	47.625	63	14	25.4	31.5	101.6	LMEU1509**ZNEN-MJ
TSN15R200M50.8-25-07	25	200	7	14	135	50.8	63	14	25.4	31.5	101.6	LMEU1509**ZNEN-MJ
TSN12R250M47.6-19-09	19	250	9	18	140	47.625	63	14	25.4	54	101.6	LMEU1208**ZNEN-MJ
TSN12R250M60.0E19-09	19	250	9	18	135	60	63	14	25.7	60	101.6	LMEU1208**ZNEN-MJ
TSN15R250M47.6-25-08	25	250	8	16	140	47.625	63	14	25.4	54	101.6	LMEU1509**ZNEN-MJ
TSN15R250M60.0E25-08	25	250	8	16	135	60	63	14	25.7	60	101.6	LMEU1509**ZNEN-MJ
TSN15R250M63.5-25-08	25	250	8	16	140	63.5	63	14	25.4	54	101.6	LMEU1509**ZNEN-MJ

SPARE PARTS






Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)
TSN10R100M25.4-16-05	SM40-143-H0	H-TB	BT15S	(C0.500X1.375H)
TSN10/12R125, 200M..., TSN12R125, 250M...	SM40-143-H0	H-TB	BT15S	-
TSN10/12R160M...	SM40-143-H0	H-TB	BT15S	(TMBA-0.750H)
TSN15R125, 200, 250M...	CSTB-5L159	H-TB	BT20S	-
TSN15R160M38.1-25-06	CSTB-5L159	H-TB	BT20S	(TMBA-0.750H)

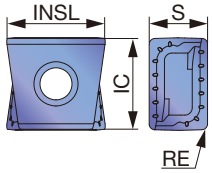
Recommended clamping torque: SM40-143-H0 = 3.5 N·m, CSTB-5L159 = 5 N·m

Reference pages: Inserts, Standard cutting conditions → H222

INSERT

LMEU-MJ





P	Steel	☆		☆	★	
M	Stainless		☆	☆	★	
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★		★		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	Coated				INSL	IC	S
		AH120	AH140	AH725	AH3135			
LMEU100808ZNEN-MJ	0.031	●	●	●	●	0.500	0.413	0.315
LMEU100810ZNEN-MJ	0.039	●			●	0.500	0.413	0.315
LMEU100816ZNEN-MJ	0.063	●	●	●	●	0.492	0.413	0.315
LMEU100820ZNEN-MJ	0.079	●			●	0.488	0.413	0.315
LMEU100824ZNEN-MJ	0.094	●	●	●	●	0.488	0.413	0.315
LMEU100830ZNEN-MJ	0.118	●			●	0.480	0.413	0.315
LMEU100832ZNEN-MJ	0.126	●	●	●	●	0.480	0.413	0.315
LMEU120808ZNEN-MJ	0.031	●	●	●	●	0.535	0.500	0.315
LMEU120816ZNEN-MJ	0.063	●	●	●	●	0.528	0.500	0.315
LMEU120820ZNEN-MJ	0.079	●			●	0.524	0.500	0.315
LMEU120824ZNEN-MJ	0.094	●	●	●	●	0.520	0.500	0.315
LMEU120830ZNEN-MJ	0.118	●			●	0.516	0.500	0.315
LMEU120832ZNEN-MJ	0.126	●	●	●	●	0.516	0.500	0.315
LMEU150908ZNEN-MJ	0.031	●	●	●	●	0.614	0.591	0.374
LMEU150916ZNEN-MJ	0.063	●	●	●	●	0.606	0.591	0.374
LMEU150920ZNEN-MJ	0.079	●			●	0.606	0.591	0.374
LMEU150924ZNEN-MJ	0.094	●	●	●	●	0.602	0.591	0.374
LMEU150930ZNEN-MJ	0.118	●			●	0.598	0.591	0.374
LMEU150932ZNEN-MJ	0.126	●	●	●	●	0.594	0.591	0.374
LMEU150940ZNEN-MJ*	0.157	●			●	0.587	0.591	0.374
LMEU150950ZNEN-MJ*	0.197	●			●	0.579	0.591	0.374

* Please note that LMEU150940 and LMEU150950 inserts are for special cutter bodies only and do not fit standard versions.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) TSN / ASN ae / DC (in) 10%	20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200 HB	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
			Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	High carbon steels 1045, etc.	200 - 300 HB	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
			Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	Alloy steels 4140, etc.	150 - 300 HB	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
			Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	Tool steels D2, etc.	- 300 HB	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
			Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
M	Stainless steel 304, etc.	- 200 HB	-	AH3135	300 - 660	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
K	Gray cast irons No250B, etc.	150 - 250 HB	-	AH120	390 - 760	0.0087 - 0.0200	0.0063 - 0.0150	0.0055 - 0.0126	0.0051 - 0.0118
	Ductile cast irons 65-45-12, etc.	150 - 250 HB	-	AH120	300 - 490	0.0087 - 0.0130	0.0063 - 0.0098	0.0055 - 0.0083	0.0051 - 0.0079
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH725	100 - 130	0.0047 - 0.0087	0.0035 - 0.0063	0.0028 - 0.0055	0.0028 - 0.0051
	Nickel-based alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	70 - 120	0.0047 - 0.0087	0.0035 - 0.0063	0.0028 - 0.0055	0.0028 - 0.0051

MEMO

AddForceBarrel



Barrel-shaped inserts for profile milling with productivity boost!

Large R cutting edge and multi-flute design for unparalleled productivity



Large R for small cusp height



Close pitch design

AddForceBarrel

DCX = 20 mm (0.787"),
PRFRAD = 30 mm (1.181")



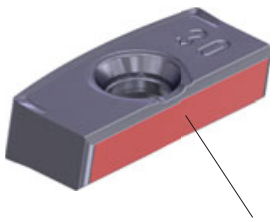
Ball endmill

DCX = 20 mm (0.787"),
R = 10 mm (0.394")



AddForceBarrel reduces the number of passes by 40% compared to ball endmill with 10 mm (0.394") radius without compromising the surface quality (cusp height).

Excellent clamping reliability with dove-tail back support



Wide contact surface



High clamping rigidity



Dove-tail clamping

Reference pages: H231 - H232

BALL FINISH NOSE

EBFU, EBFM

High precision finishing endmill, shank type, with screw clamp system



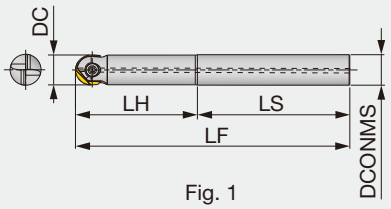


Fig. 1

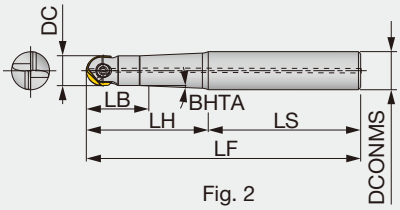
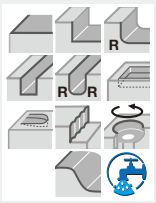


Fig. 2



Inch	DC	DCONMS	LS	LH	LF	LB	BHTA	Air hole	Fig.	Shank material	Insert
EBFU037T050S0400	0.375	0.500	3.000	1.000	4.000	0.625	9.0°	With	2	Steel	ZF*U037
EBFU037S037C0550	0.375	0.375	2.500	3.000	5.500	-	-	Without	1	Carbide	ZF*U037
EBFU037T062S0600	0.375	0.625	3.500	2.500	6.000	0.625	3.5°	With	2	Steel	ZF*U037
EBFU037S037C0875	0.375	0.375	3.250	5.500	8.750	-	-	Without	1	Carbide	ZF*U037
EBFU050S050S0437	0.500	0.500	3.187	1.188	4.375	-	-	With	1	Steel	ZF*U050
EBFU050S050C0637	0.500	0.500	2.750	3.625	6.375	-		Without	1	Carbide	ZF*U050
EBFU050T062S0637	0.500	0.625	4.000	2.375	6.375	1.000	2.5°	With	2	Steel	ZF*U050
EBFU050S050C0875	0.500	0.500	2.750	6.000	8.750	-	-	Without	1	Carbide	ZF*U050
EBFU062T075S0500	0.625	0.750	3.000	2.000	5.000	0.563	2.0°	With	2	Steel	ZF*U062
EBFU062S062C0637	0.625	0.625	3.375	3.000	6.375	-	-	Without	1	Carbide	ZF*U062
EBFU062T075S0637	0.625	0.750	3.625	2.750	6.375	0.563	1.5°	With	2	Steel	ZF*U062
EBFU062S062C0875	0.625	0.625	2.750	6.000	8.750	-	-	Without	1	Carbide	ZF*U062
EBFU075T100S0700	0.750	1.000	4.000	3.000	7.000	1.563	4.5°	With	2	Steel	ZF*U075
EBFU075S075C0875	0.750	0.750	4.000	4.750	8.750	-	-	Without	1	Carbide	ZF*U075
EBFU075T100S0875	0.750	1.000	4.000	4.750	8.750	1.000	1.5°	With	2	Steel	ZF*U075
EBFU075S075C1200	0.750	0.750	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U075
EBFU100T125S0800	1.000	1.250	4.000	4.000	8.000	1.250	2.5°	With	2	Steel	ZF*U100
EBFU100S100C0875	1.000	1.000	4.000	4.750	8.750	-	-	Without	1	Carbide	ZF*U100
EBFU100T125S1000	1.000	1.250	4.000	6.000	10.000	1.188	1.4°	With	2	Steel	ZF*U100
EBFU100S100C1200	1.000	1.000	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U100
EBFU125S125S1000	1.250	1.250	6.000	4.000	10.000	-	-	With	1	Steel	ZF*U125
EBFU125S125C1200	1.250	1.250	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U125

Metric	DC	DCONMS	LS	LH	LF	LB	BHTA	Air hole	Fig.	Shank material	Insert
EBFM08T12S100	8	12	80	20	100	10	9.5°	With	2	Steel	ZFBM080...
EBFM08S08C100	8	8	70	30	100	-	-	Without	1	Carbide	ZFBM080...
EBFM08S08C140	8	8	75	65	140	-	-	Without	1	Carbide	ZFBM080...
EBFM10T12S100	10	12	75	25	100	15	5°	With	2	Steel	ZFBM100...
EBFM10S10C140	10	10	65	75	140	-	-	Without	1	Carbide	ZFBM100...
EBFM10S10C220	10	10	80	140	220	-	-	Without	1	Carbide	ZFBM100...
EBFM12S12S110	12	12	80	30	110	-	-	With	1	Steel	ZF*M120..., ZFCBM120...
EBFM12S12C160	12	12	70	90	160	-	-	Without	1	Carbide	ZF*M120..., ZFCBM120...
EBFM12S12C220	12	12	70	150	220	-	-	Without	1	Carbide	ZF*M120..., ZFCBM120...
EBFM16T20S130	16	20	80	50	130	15.5	1.5°	With	2	Steel	ZF*M160..., ZFCBM160...
EBFM16S16C160	16	16	80	80	160	-	-	Without	1	Carbide	ZF*M160..., ZFCBM160...
EBFM16S16C220	16	16	70	150	220	-	-	Without	1	Carbide	ZF*M160..., ZFCBM160...
EBFM20T25S180	20	25	100	80	180	24	2.5°	With	2	Steel	ZF*M200..., ZFCBM200...
EBFM20S20C220	20	20	100	120	220	-	-	Without	1	Carbide	ZF*M200..., ZFCBM200...
EBFM20S20C300	20	20	80	220	300	-	-	Without	1	Carbide	ZF*M200..., ZFCBM200...
EBFM25T32S200	25	32	100	100	200	32	1.5°	With	2	Steel	ZFBM250..., ZFCBM250...
EBFM25S25C220	25	25	100	120	220	-	-	Without	1	Carbide	ZFBM250..., ZFCBM250...
EBFM25S25C300	25	25	80	220	300	-	-	Without	1	Carbide	ZFBM250..., ZFCBM250...
EBFM30T32S220	30	32	120	100	220	35	0.5°	With	2	Steel	ZFBM300..., ZFCBM300...
EBFM30S32C250	30	32	100	150	250	-	-	Without	1	Carbide	ZFBM300..., ZFCBM300...
EBFM30S32C350	30	32	100	250	350	-	-	Without	1	Carbide	ZFBM300..., ZFCBM300...
EBFM32S32S250	32	32	150	100	250	-	-	With	1	Steel	ZFBM320...
EBFM32S32C300	32	32	80	220	300	-	-	Without	1	Carbide	ZFBM320...

Metric dimension heads can fit the imperial bodies and vice-versa, but body projections causing interference need to be checked before using.

Reference pages: Inserts → H227 - H228, Standard cutting conditions → H229 - H230

INCH SPARE PARTS

Designation	Clamping screw	Torx bit	Grip	Wrench
EBFU037...	TS30F100A	-	-	T10D
EBFU050...	TS40F120A	-	-	T15D
EBFU062...	TS50F160A	-	-	T-T20
EBFU075...	TS60F200A	BLDT25/M7	SW6-T	-
EBFU100...	TS70F250A	BLDT25/M7	SW6-T	-
EBFU125...	TS70F300A	-	-	T-T30

Recommended clamping torque: TS 30F100A = 1.84 lbs·ft, TS 40F120A = 2.58 lbs·ft, TS 50F160A = 3.69 lbs·ft, TS 60F200A = 5.16 lbs·ft, TS 70F250A = 5.16 lbs·ft

METRIC SPARE PARTS

Designation	Clamping screw	Torx bit	Grip	Wrench
EBFM08...	TS 25F080A	-	-	T-8D
EBFM10...	TS 30F100A	-	-	T-10D
EBFM12...	TS 40F120A	-	-	T-15D
EBFM16...	TS 50F160A	BT20S	H-TB2W	-
EBFM20...	TS 60F200A	BLDT25/M7	H-TB2W	-
EBFM25...	TS 70F250A	BLDT25/M7	H-TB2W	-
EBFM30...	TS 80F300A	-	-	T-T30
EBFM32...	TS 80F300A	-	-	T-T30

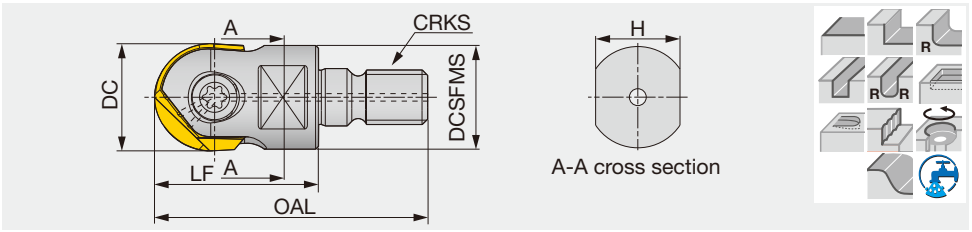
Recommended clamping torque: TS 25F080A = 1.3 N·m, TS 30F100A = 2.5 N·m, TS 40F120A = 3.5 N·m, TS 50F160A = 5 N·m, TS 60F200A, TS 70F250A = 7 N·m, TS 80F300A = 10 N·m

BALL NOSE FINISH

HBFM

High precision finishing endmill, modular type (TungFlex), with screw clamp system





Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90°

Metric	DC	OAL	LF	H	DCSFMS	CRKS	Air hole	Insert
HBFM10M06	10	34.5	20	7	9.7	M6	With	ZFBM100...
HBFM12M06	12	37.5	23	7	11.5	M6	With	ZF*M120..., ZFCBM120...
HBFM12M08	12	40	23	10	13	M8	With	ZF*M120..., ZFCBM120...
HBFM16M08	16	47	30	10	13	M8	With	ZF*M160..., ZFCBM160...
HBFM20M10	20	49	30	15	19	M10	With	ZF*M200..., ZFCBM200...
HBFM25M12	25	57	35	17	24	M12	With	ZFBM250..., ZFCBM250...
HBFM30M16	30	66	43	22	29	M16	With	ZFBM300..., ZFCBM300...
HBFM32M16	32	66	43	22	29.5	M16	With	ZFBM320...

Others

SPARE PARTS

Designation	Clamping screw	Torx bit	Grip	Wrench
HBFM10...	TS 30F100A	-	-	T-10D
HBFM12...	TS 40F120A	-	-	T-15D
HBFM16...	TS 50F160A	BT20S	H-TB2W	-
HBFM20...	TS 60F200A	BLDT25/M7	H-TB2W	-
HBFM25...	TS 70F250A	BLDT25/M7	H-TB2W	-
HBFM30..., HBFM32...	TS 80F300A	-	-	T-T30

Recommended clamping torque: TS 25F080A = 1.3 N·m, TS 30F100A = 2.5 N·m, TS 40F120A = 3.5 N·m, TS 50F160A = 5 N·m, TS 60F200A, TS 70F250A = 7 N·m, TS 80F300A = 10 N·m

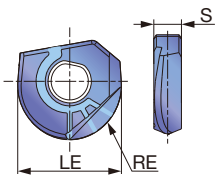
Metric dimension heads can fit the imperial bodies and vice-versa, but body projections causing interference need to be checked before using.

Reference pages: Inserts → H227 - H228, Standard cutting conditions → H229 - H230, TungFlex → H038 - H039

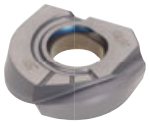
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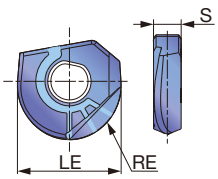
ZFBU-MJ



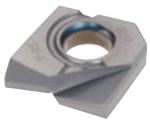


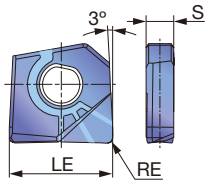
ZFBU-ML





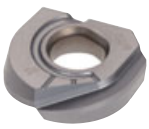
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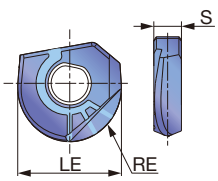




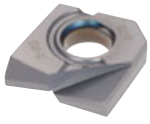
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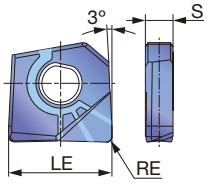
ZFBM-MJ





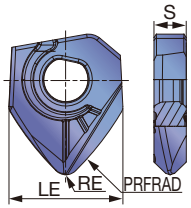
ZFRM-MJ





ZFCBM-MM





P	Steel	★	☆	★
M	Stainless	★		☆
K	Cast iron	★	★	☆
N	Non-ferrous	☆		☆
S	Superalloys	★		★
H	Hard materials	★	★	☆

★ : First choice
☆ : Second choice

Metric

Designation	PRFRAD	RE	Coated CH315	Coated AH710	Coated AH725	LE	S
ZFBM080R00-MJ	-	4		●	●	8	2.4
ZFBM100R00-MJ	-	5		●	●	10	2.9
ZFBM120R00-MJ	-	6		●	●	12	3.4
ZFBM160R00-MJ	-	8		●	●	16	4.4
ZFBM200R00-MJ	-	10		●	●	20	5.4
ZFBM250R00-MJ	-	12.5		●	●	25	6.4
ZFBM300R00-MJ	-	15		●	●	30	7.4
ZFBM320R00-MJ	-	16		●	●	32	7.4
ZFRM120R05-MJ	-	0.5		●	●	12	3.4
ZFRM120R10-MJ	-	1		●	●	12	3.4
ZFRM160R05-MJ	-	0.5		●	●	16	4.4
ZFRM160R10-MJ	-	1		●	●	16	4.4
ZFRM160R15-MJ	-	1.5		●	●	16	4.4
ZFRM200R10-MJ	-	1		●	●	20	5.4
ZFRM200R15-MJ	-	1.5		●	●	20	5.4
ZFCBM120R300-MM	30	1.5	●			12	3.4
ZFCBM160R400-MM	40	2	●			16	4.4
ZFCBM200R500-MM	50	2.5	●			20	5.4
ZFCBM250R625-MM	62.5	3	●			25	6.4
ZFCBM300R750-MM	75	3.5	●			30	7.4

With ZFCBM insert, the functional length (LF) of the EBFM and HBFM cutters becomes longer for the amount as indicated below:
For E/HBFM12, +2.6 mm; E/HBFM16, +4 mm; E/HBFM20, +4.4 mm; E/HBFM25, +5.8 mm; and E/HBFM30, +5.9 mm.
ZFBM080/100/120/160... : 5 piece per package, ZFBM200/250/300/320... : 1 piece per package
ZFRM120/160... : 5 piece per package, ZFRM200... : 1 piece per package

●: Line up

STANDARD CUTTING CONDITIONS

ZF*M-MJ

ISO	Workpiece materials	Hardness	Priority	Grades	Max. depth of cut (in)	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)							
							D0.315	D0.394	D0.490	D0.653	D0.816	D0.984	D1.181	D1.260
P	Low carbon steel, alloy steel	85 - 180 HB	First choice	AH725	≤0.04D	590 - 850	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
		85 - 180 HB	Wear resistance	AH710	≤0.04D	590 - 850	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
	High carbon steel, alloy steel	180 - 280 HB	First choice	AH725	≤0.03D	490 - 750	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
		180 - 280 HB	Wear resistance	AH710	≤0.03D	490 - 750	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
	Prehardened steel Die & mold tool steel	40 - 48 HRC	First choice	AH710	≤0.03D	590 - 980	0.006	0.006	0.008	0.008	0.010	0.010	0.012	0.012
		40 - 48 HRC	Fracture resistance	AH725	≤0.03D	590 - 980	0.006	0.006	0.008	0.008	0.010	0.010	0.012	0.012
M	Stainless steel	135 - 200 HB	First choice	AH725	≤0.03D	330 - 820	0.004	0.006	0.008	0.008	0.010	0.010	0.012	0.012
K	Cast iron	150 - 240 HB	First choice	AH710	≤0.04D	300 - 1150	0.008	0.008	0.010	0.012	0.012	0.014	0.016	0.016
		150 - 240 HB	Fracture resistance	AH725	≤0.04D	300 - 1150	0.008	0.008	0.010	0.012	0.012	0.014	0.016	0.016
N	Aluminum	-	First choice	AH725	≤0.03D	660 - 1310	0.010	0.010	0.014	0.014	0.014	0.016	0.016	0.018
S	Titanium alloy	- 40 HRC	First choice	AH725	≤ 0.03D	98 - 262	0.003	0.003	0.004	0.005	0.006	0.007	0.008	0.008
	Heat-resistant alloys	- 40 HRC	First choice	AH725	≤ 0.03D	98 - 328	0.003	0.003	0.004	0.005	0.006	0.007	0.008	0.008
H	High hardened steel	48 - 65 HRC	First choice	AH710	≤0.02D	330 - 720	0.003	0.003	0.004	0.005	0.006	0.008	0.008	0.010

· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

How to clamp the insert

1. Clear chips and dust from the pocket.
2. Place the insert in the pocket. The insert can be placed only in one direction.
3. Tighten the screw while pressing the insert into the pocket.

How to check the run-out

1. Clamp the insert on the shank.
2. Clamp the shank on a high-precision arbor.
3. Measure the run-out on tool presetter or by dial gauge.

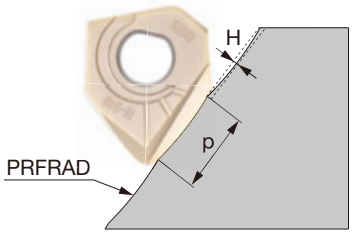
Notes:

1. Due to the helical cutting edge, it is important that the run-out is inspected with the insert clamped on the shank.
2. Do not use micrometer or caliper to inspect the insert diameter as inaccurate dimensions may be provided.

ZFCBM-MM

ISO	Workpiece materials	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Width of cut *ae* (in)
P	Low carbon steel 1020, etc.	- 200HB	328 - 1969	0.002 - 0.012	< 0.012
P	Carbon steel 1045, etc.	- 300HB	328 - 1969	0.002 - 0.012	< 0.012
P	Prehardened steel NAK80, PX5, etc.	30 - 40HRC	328 - 1969	0.002 - 0.012	< 0.012
M	Austenitic stainless steel 304SS, etc.	- 200HB	328 - 1969	0.002 - 0.012	< 0.012
M	Precipitation hardening stainless steel 17-4 PH, etc.	- 45HRC	328 - 984	0.002 - 0.01	< 0.008
K	Gray cast iron Class 25, etc.	150 - 250HB	328 - 1969	0.002 - 0.012	< 0.012
K	Ductile cast iron 60-40-18, etc.	150 - 250HB	328 - 1969	0.002 - 0.012	< 0.012
S	Titanium alloys Ti-6Al-4V, etc.	- 45HRC	131 - 394	0.002 - 0.008	< 0.008
S	Superalloys Inconel718, etc.	- 45HRC	66 - 262	0.002 - 0.008	< 0.008
H	Hardened steel H-13, etc.	40 - 55HRC	164 - 984	0.002 - 0.008	< 0.008

■ Cusp height and pitch



H: Cusp height
p: Pitch
PRFRAD: Radius of barrel-shaped cutting edge

To obtain the pitch (p) from the given cusp height (H)

PRFRAD (in) \ H (in)	0.00004	0.00008	0.00012	0.00016	0.00020	0.00039	0.00059	0.00079
30 (ZFCBM120R300...)	0.019	0.027	0.033	0.039	0.043	0.061	0.075	0.086
40 (ZFCBM160R400...)	0.022	0.031	0.039	0.044	0.050	0.070	0.086	0.100
50 (ZFCBM200R500...)	0.025	0.035	0.043	0.050	0.056	0.079	0.096	0.111
62.5 (ZFCBM250R625...)	0.028	0.039	0.048	0.056	0.062	0.088	0.108	0.124
75 (ZFCBM300R750...)	0.030	0.043	0.053	0.061	0.068	0.096	0.118	0.136

$$p = \sqrt{8 \times H \times PRFRAD} \quad \text{(mm)}$$

To obtain the cusp height (H) from the given pitch (p)

PRFRAD (in) \ p (in)	0.020	0.030	0.039	0.049	0.059	0.069	0.079
30 (ZFCBM120R300...)	0.00004	0.00008	0.00016	0.00028	0.00035	0.00051	0.00067
40 (ZFCBM160R400...)	0.00004	0.00008	0.00010	0.00020	0.00028	0.00039	0.00051
50 (ZFCBM200R500...)	0.00004	0.00004	0.00010	0.00016	0.00024	0.00032	0.00039
62.5 (ZFCBM250R625...)	0.00004	0.00004	0.00008	0.00010	0.00020	0.00024	0.00032
75 (ZFCBM300R750...)	< 0.00004	0.00004	0.00008	0.00010	0.00016	0.00020	0.00028

$$H = \frac{p^2}{8 \times PRFRAD} \quad \text{(mm)}$$

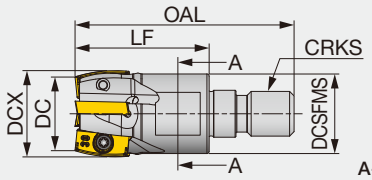
HFZN10-M

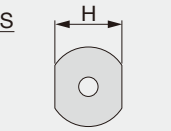
Profiling endmill, modular type (TungFlex)

GAMP = +7.1° ~ +9.2°, GAMF = -20.8° ~ -17.9°



with ZNHU1003R30-MM





A-A cross section

with ZNHU1003R20-MM



Metric	DCX	CICT	DC	DC2	OAL	LF	DCSFMS	CRKS	H	WT(kg)	Air hole	Insert
HFZN10M016M08R03	16	3	13	12.5	42	25	14.5	M8	10	0.02	With	ZNHU1003...
HFZN10M020M10R04	20	4	17	16.5	49	30	17.8	M10	15	0.05	With	ZNHU1003...
HFZN10M025M12R05	25	5	22	21.5	57	35	23	M12	17	0.1	With	ZNHU1003...
HFZN10M035M16R07	35	7	31.9	31.4	63	40	28.8	M16	22	0.22	With	ZNHU1003...
HFZN10M040M16R08	40	8	36.9	36.4	63	40	28.8	M16	22	0.25	With	ZNHU1003...

SPARE PARTS



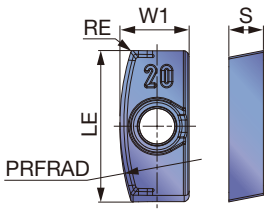

Designation	Clamping screw	Wrench
HFZN10...	SR-M2.5X0.45-L6IP7	IP-7D

Recommended clamping torque: 1 N·m

INSERTS

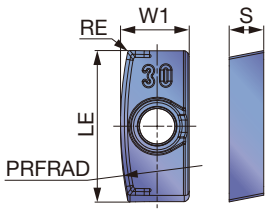
ZNHU1003R20-MM





ZNHU1003R30-MM





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloy	★
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	PRFRAD	RE	Coated AH9130	LE	W1	S
ZNHU1003R20-MM	0.787	0.008	●	0.453	0.221	0.110
ZNHU1003R30-MM	1.181	0.008	●	0.453	0.219	0.110

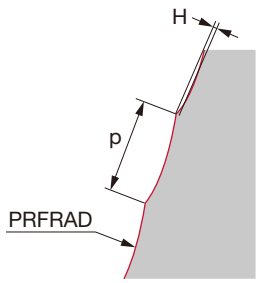
● : Line up

Reference pages: Standard cutting conditions → H232, TungFlex → H038 - H039

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Width of cut *ae* (in)
P	Low carbon steel 1020, etc.	- 200HB	328 - 1969	0.002 - 0.012	< 0.016
	Carbon steel 1045, etc.	- 300HB	328 - 1969	0.002 - 0.012	< 0.012
	Prehardened steel NAK80, PX5, etc.	30 - 40HRC	328 - 1969	0.002 - 0.012	< 0.012
M	Austenitic stainless steel 304SS, etc.	- 200HB	328 - 1640	0.002 - 0.012	< 0.012
	Precipitation hardening stainless steel 17-4 PH, etc.	- 45HRC	328 - 984	0.002 - 0.01	< 0.008
K	Gray cast iron Class 25, etc.	150 - 250HB	328 - 1969	0.002 - 0.012	< 0.012
	Ductile cast iron 60-40-18, etc.	150 - 250HB	328 - 1969	0.002 - 0.012	< 0.012
S	Titanium alloys Ti-6Al-4V, etc.	- 45HRC	131 - 394	0.002 - 0.008	< 0.008
	Superalloys Inconel718, etc.	- 45HRC	66 - 262	0.002 - 0.008	< 0.008
H	Hardened steel H-13, etc.	40 - 55HRC	164 - 984	0.002 - 0.008	< 0.008

Cusp height and pitch



H: Cusp height
p: Pitch
PRFRAD: Radius of barrel-shaped cutting edge

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

To obtain the pitch (p) from the given cusp height (H)

PRFRAD (in) \ H (in)	0.00004	0.00008	0.00012	0.00016	0.00020	0.00039	0.00059	0.00079
20 (ZNHU1003R20...)	0.016	0.022	0.027	0.031	0.035	0.050	0.061	0.070
30 (ZNHU1003R30...)	0.020	0.027	0.033	0.039	0.043	0.061	0.075	0.086

$$p = \sqrt{8 \times H \times PRFRAD} \quad \text{(mm)}$$

To obtain the cusp height (H) from the given pitch (p)

PRFRAD (in) \ p (in)	0.020	0.030	0.039	0.049	0.059	0.069	0.079
20 (ZNHU1003R20...)	0.00008	0.00016	0.00024	0.00039	0.00055	0.00075	0.00098
30 (ZNHU1003R30...)	0.00004	0.00008	0.00016	0.00028	0.00035	0.00051	0.00067

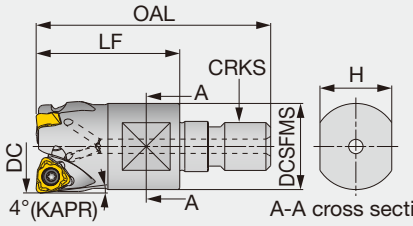
$$H = \frac{p^2}{8 \times PRFRAD} \quad \text{(mm)}$$

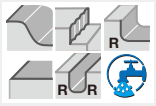
DOMINIMILL
HFWX04-M

Small-radius finishing endmill, modular type (TungFlex)

GAMP = 0°, GAMF = -14°







Metric	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HFWX04M016M08R02	16	2	42	25	10	13	M8	0.03	With	WXHU04...
HFWX04M020M10R03	20	3	49	30	15	18	M10	0.05	With	WXHU04...
HFWX04M025M12R04	25	4	52	30	17	21	M12	0.09	With	WXHU04...

SPARE PARTS

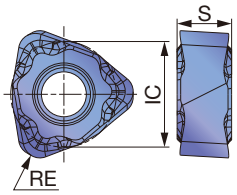
Designation	Clamping screw	Lubricant	Wrench
HFWX04M...	SR34-514	M-1000	T-7F

Recommended clamping torque: 0.9 N·m

INSERT

WXHU-MJ





P	Steel	★
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH110	IC	S
WXHU040305R-MJ	0.020	0.020	●	0.250	0.125
WXHU040310R-MJ	0.039	0.039	●	0.250	0.125

* For plunging, the maximum cutting width is 0.079".

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	High carbon steel 1045, 1055, etc.		200 - 300 HB	AH110	328 - 984	0.004 - 0.012
P	Alloy steel 4140, etc.		150 - 300 HB	AH110	328 - 984	0.004 - 0.012
P	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	AH110	328 - 984	0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50 HRC	AH110	262 - 427	0.004 - 0.012
H		D2, etc.	50 - 60 HRC	AH110	164 - 328	0.002 - 0.006

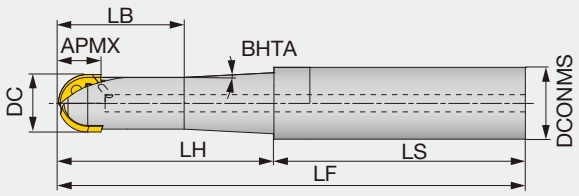
Reference pages: TungFlex → H038 - H039

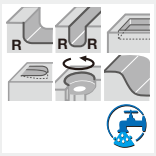
ROUGH BALL NOSE

EBRU..., EBRM...

Ball nose endmill for semi-roughing, shank type, with screw clamp system







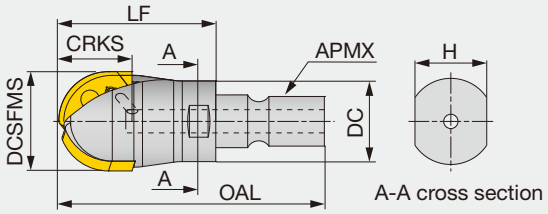
Inch	APMX	DC	CICT	DCONMS	LS	LF	LH	LB	BHTA	WT(lb)	Air hole	Insert
EBRU062SW062S0475	0.470	0.625	2	0.625	3.375	4.748	1.373	0.331	3.000	0.330	With	ZRBU062...
EBRU075SW075S0600	0.510	0.750	2	0.750	4.000	6.000	2.000	0.606	3.000	0.610	With	ZRBU075...
EBRU100SW100S0600	0.690	1.000	2	1.000	3.250	6.000	2.750	1.080	3.000	1.080	With	ZRBU100...

Metric	APMX	DC	CICT	DCONMS	LS	LF	LH	LB	BHTA	WT(kg)	Air hole	Insert
EBRM16T20S130	11.8	16	2	20	70	130	60	35	3	0.235	With	ZRBM160...
EBRM16T20S200	11.8	16	2	20	140	200	60	35	3	0.395	With	ZRBM160...
EBRM20T25S160	13.6	20	2	25	85	160	75	45	3	0.455	With	ZRBM200...
EBRM20T25S220	13.6	20	2	25	135	220	85	60	5	0.655	With	ZRBM200...
EBRM25T32S200	17.7	25	2	32	115	200	85	55	6	0.965	With	ZRBM250...
EBRM25T32S300	17.7	25	2	32	180	300	120	70	4	1.505	With	ZRBM250...

HBRM...

Ball nose endmill for semi-roughing, modular type (TungFlex), with screw clamp system







Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HBRM16M08	11.8	16	2	42.5	25	10	13	M8	0.025	With	ZRBM160...
HBRM20M10	13.6	20	2	50	30	15	18	M10	0.05	With	ZRBM200...
HBRM25M12	17.7	25	2	57	35	17	21	M12	0.08	With	ZRBM250...

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

SPARE PARTS



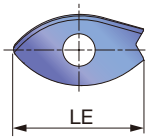

Designation	Clamping screw	Wrench
EBRU062..., EBRM16..., HBRM16...	TS25064I	T-8D
EBRU075...	TS30C72I	T-9D
EBRM20..., HBRM20...	TS30085I/HG	T-9D
EBRU100..., EBRM25..., HBRM25...	TS35085I/HG	T-15D

Recommended clamping torque: TS25064I = 0.96 lbs·ft, 1.3 N·m,
TS30C72I, TS30085I/HG = 1.70 lbs·ft, 2.3 N·m, TS35085I/HG = 2.58 lbs·ft, 3.5 N·m

INSERT

ZRBU...





Inch

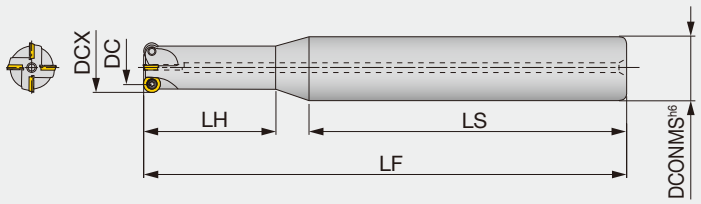
| | | |

EWD05/07/10

Endmill, shank type

GAMP = 0°, GAMF = -3°~ +0.5°





Inch	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	Air hole	Insert
EWD05050RU	0.098	0.500	2	0.304	0.750	3.250	0.750	5.000	With	RDMW05...
EWD05075RU	0.098	0.750	3	0.554	1.000	5.000	1.500	7.000	With	RDMW05...
EWD07075RU	0.138	0.750	4	0.475	1.000	5.000	1.500	7.000	With	RDMW07...
EWD07100RU	0.138	1.000	5	0.725	1.250	5.250	1.750	8.000	With	RDMW07...
EWD10100RU	0.196	1.000	3	0.606	1.250	5.250	1.750	8.000	With	RDMW10...
EWD07125RU	0.138	1.250	3	0.975	1.500	5.500	1.750	9.000	With	RDMW07...
EWD10125RU	0.196	1.250	5	0.856	1.500	5.500	1.750	9.000	With	RDMW10...

Metric	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	Air hole	Insert
EWD05010R	2.5	10	2	5	20	80	20	130	With	RDMW05...
EWD05012R	2.5	12	3	7	20	80	20	130	With	RDMW05...
EWD07015R	3.5	15	3	8	20	100	40	150	With	RDMW07...
EWD05015R	2.5	15	4	10	20	100	40	150	With	RDMW05...
EWD10020R	5.0	20	2	10	25	120	40	170	With	RDMW10...
EWD07020R	3.5	20	4	13	25	120	40	170	With	RDMW07...
EWD05020R	2.5	20	5	15	25	120	40	170	With	RDMW05...
EWD10025R	5.0	25	3	15	32	125	45	195	With	RDMW10...
EWD07025R	3.5	25	5	18	32	125	45	195	With	RDMW07...

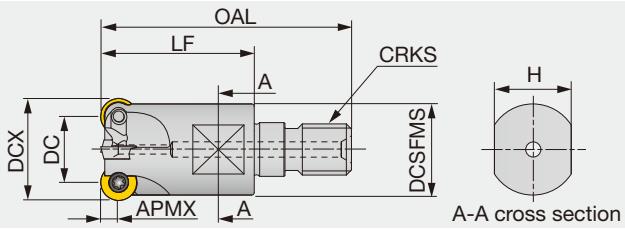
HWD07-M

Endmill, modular type (TungFlex)

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

GAMP = 0°, GAMF = -3°~ +0.5°





Metric	APMX	DCX	CICT	DC	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole
HWD07R015MM08-03	3.5	15	3	8	42	25	10	12.8	M8	0.03	With
HWD07R020MM10-04	3.5	20	4	13	49	30	15	17.8	M10	0.06	With
HWD07R025MM12-05	3.5	25	5	18	57	35	17	20.8	M12	0.1	With
HWD07R030MM16-05	3.5	30	5	23	63	40	22	28.8	M16	0.2	With

SPARE PARTS

Designation	Clamping screw	Lubricant	Wewnch
EWD05**RU	CSTD-1.8	-	T-6D
EWD07**RU	CSTB-2.5S	-	T-8D
EWD10**RU	CSTB-3.5H	-	T-15D
EWD050**R	CSTD-1.8	M-1000	T-6D
EWD070**R, HWD07**M...	CSTB-2.5S	M-1000	T-8D
EWD100**R	CSTB-3.5H	M-1000	T-15D

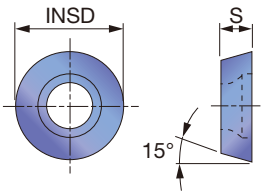
Recommended clamping torque: CSTD-1.8 = 0.52 lbs·ft, 0.7 N·m, CSTB-2.5S = 0.96 lbs·ft, 1.3 N·m, CSTB-3.5H = 2.58 lbs·ft, 3.5 N·m

Reference pages: TungFlex → H038 - H039

INSERT

RDMW05/07/10





P	Steel	★	
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	APMX	Coated AH120	INSD	S
RDMW0501M0	0.098	●	0.197	0.055
RDMW0702M0	0.138	●	0.276	0.094
RDMW1003M0	0.196	●	0.394	3.180

●: Line up

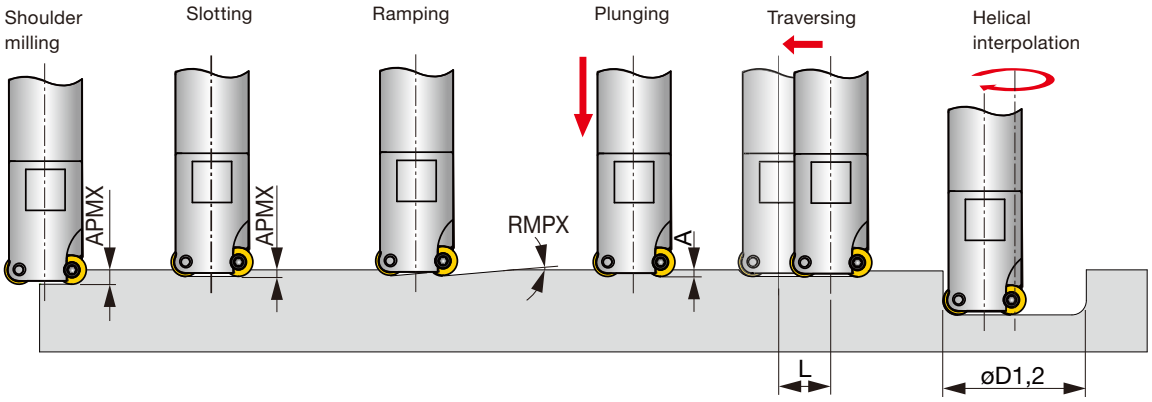
STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog
EWD05/07/10

e-catalog
HWD07-M

APPLICATION RANGE



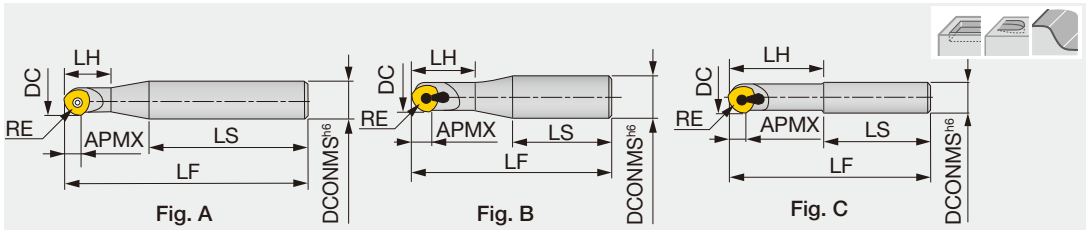
Inch	Tool-ø DCX	Max. depth of cut APMX	Max. ramping RMPX	Max. plunging depth A	Machining length for removing uncut portion L	Max. machining øD1	*Max. machining øD2
EWD05050RU	0.500	0.098	12.5°	0.060	0.342	0.804	0.921
EWD05075RU	0.750	0.098	4°	0.040	0.592	1.304	1.421
EWD07075RU	0.750	0.137	12°	0.080	0.513	1.225	1.421
EWD07100RU	1.000	0.137	7.5°	0.090	0.763	1.725	1.921
EWD07125RU	1.250	0.137	5°	0.080	1.013	2.225	2.421
EWD10100RU	1.000	0.196	15°	0.120	0.645	1.607	1.921
EWD10125RU	1.250	0.196	9.5°	0.120	0.895	2.107	2.421

*For flat bottom hole

TBN1000

Ball nose endmill for semi-finishing





Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	RE	Insert	Fig.
TBN1100S	5	10	1	16	60	15	90	5	ZNCA1002FN2	A
TBN1120S	6	12	1	16	70	20	110	6	ZNCA1203FN	A
TBN1160S	8	16	1	20	85	25	130	8	ZNCA1603FN	A
TBN1200S	10	20	1	25	100	35	160	10	ZN**2004...	A
TBN1250S	12.5	25	1	32	100	45	175	12.5	ZN**2505...	B
TBN1300S	15	30	1	32	100	90	190	15	ZN**3005...	C

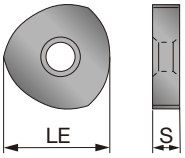
SPARE PARTS

Designation	Clamping screw	Clamp	Adjusting screw	Wewnch
TBN1100S	CSTB-2.5B	-	-	T-8D
TBN1120S	CSTB-3S	-	-	T-9D
TBN1160S	CSTB-4S	-	-	T-15D
TBN1200S	CSTA-5SS	-	-	T-15D
TBN1250S, 1300S	CSTA-5S	CP536	DS-6T	T-15D

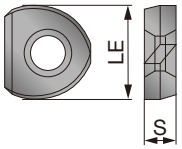
Recommended clamping torque: CSTB-2.5B = 1.3 N·m, CSTB-3S = 2.3 N·m, CSTB-4S/CSTA-5S/CSTA-5SS = 3.5 N·m

INSERT

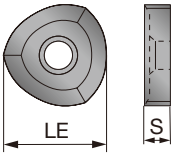
ZNCA-FN



ZNCA-FN2



ZNMM-EN



Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

P	Steel	★	
M	Stainless		
K	Cast iron		★
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	Uncoated			LE	S
	UX30	TH10			
ZNCA1002FN2	●	●		0.313	0.098
ZNCA1203FN	●	●		0.383	0.118
ZNCA1603FN	●	●		0.503	0.138
ZNCA2004FN	●	●		0.624	0.157
ZNCA2505FN	●	●		0.781	0.197
ZNCA3005FN	●	●		0.930	0.197
ZNMM2004EN	●			0.624	0.157
ZNMM2505EN	●			0.781	0.197
ZNMM3005EN	●			0.930	0.217

●: Line up

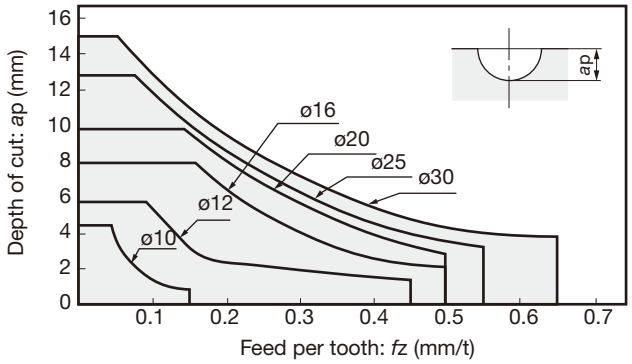
STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog

TBN1000

GUIDELINES FOR SELECTING DEPTH OF CUT AND FEED



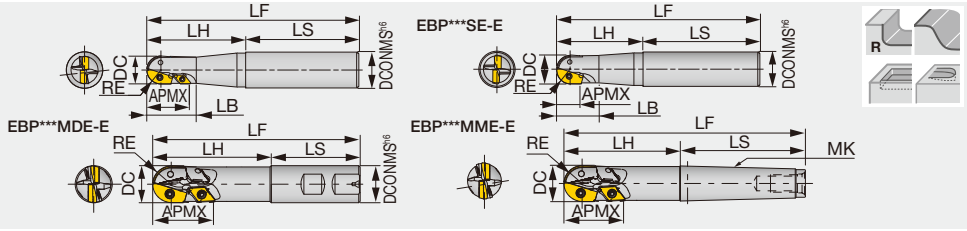
Workpiece material: Carbon steel (S55C, C55)
Insert grade: UX30
Machine power: ø10 - ø16: 7.5 kW
ø20 - ø30: 22.5 kW
No. of revolutions: ø10 - ø16: 2000 min-1
ø20 - ø30: 1500 min-1

(Unit: mm)

EBP

Ball nose endmill for semi-finishing





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	MK	Insert 1	Insert 2
EBP075MWU	0.625	0.750	2	1.000	2.280	2.750	5.030	1.250	0.375	-	ZPET075U-MJ	-
EBP075LWEU	1.140	0.750	2+2	1.000	2.280	3.750	6.030	1.250	0.375	MK2	ZPET075U-MJ	DCMW070204TN
EBP100MWU	0.827	1.000	2	1.000	2.280	3.250	5.530	-	0.500	-	ZPET100U-MJ	-
EBP100LWEU	1.610	1.000	2+2	1.000	2.280	4.250	6.530	-	0.500	-	ZPET100U-MJ	DCMW11T304TN
EBP125MWU	1.000	1.250	2	1.250	2.280	3.750	6.030	-	0.625	-	ZPET125U-MJ	-
EBP125LWEU	1.810	1.250	2+2	1.250	2.280	4.750	7.030	-	0.625	-	ZPET125U-MJ	DCMW11T304TN

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	MK	Insert 1	Insert 2
EBP020SD-E	16	20	2	20	56	60	116	-	10	-	ZPET2004-MJ	-
EBP020SS	16	20	2	25	80	60	140	30	10	-	ZPET2004-MJ	-
EBP020MDE-E	29.5	20	2 (4)	20	56	70	126	-	10	-	ZPET2004-MJ	DCMW070204TN
EBP020MME-E	29.5	20	2 (4)	-	69	70	139	-	10	MK2	ZPET2004-MJ	DCMW070204TN
EBP020MSE	29.5	20	2 (4)	25	80	70	150	35	10	-	ZPET2004-MJ	DCMW070204TN
EBP020LSE	29.5	20	2 (4)	25	180	70	250	35	10	-	ZPET2004-MJ	DCMW070204TN
EBP025SD-E	21	25	2	25	60	70	130	-	12.5	-	ZPET2505-MJ	-
EBP025SS	21	25	2	32	80	70	150	35	12.5	-	ZPET2505-MJ	-
EBP025MDE-E	41	25	2 (4)	25	60	80	140	-	12.5	-	ZPET2505-MJ	DCMW11T304TN
EBP025MME-E	41	25	2 (4)	-	86	-	166	-	12.5	MK3	ZPET2505-MJ	DCMW11T304TN
EBP025MSE	41	25	2 (4)	32	100	80	180	50	12.5		ZPET2505-MJ	DCMW11T304TN
EBP025LSE	41	25	2 (4)	32	220	80	300	50	12.5	-	ZPET2505-MJ	DCMW11T304TN
EBP030SS	24	30	2	32	80	80	160	40	15	-	ZPET3006-MJ	-
EBP030MSE	45	30	2 (4)	32	100	100	200	55	15	-	ZPET3006-MJ	DCMW11T304TN
EBP030LSE	45	30	2 (4)	32	250	100	350	55	15	-	ZPET3006-MJ	DCMW11T304TN
EBP032SD-E	25	32	2	32	60		140	-	16	-	ZPET3206-MJ	-
EBP032MDE-E	46	32	2 (4)	32	60	100	160	-	16	-	ZPET3206-MJ	DCMW11T304TN
EBP032MME-E	46	32	2 (4)	-	109	100	209	-	16	MK4	ZPET3206-MJ	DCMW11T304TN

INCH SPARE PARTS



Designation	Clamping screw for Insert 1	Clamping screw for Insert 2	Lubricant	Wrench 1 for Insert 1	Wrench 2 for Insert 2
EBP075MWU	CSTD-3T	-	M-1000	T-10D	-
EBP075LWEU	CSTD-3T	CSTB-2.5S	M-1000	T-10D	T-8D
EBP100MWU	CSTB-4S	-	M-1000	T-15D	-
EBP100LWEU	CSTB-4S	CSTB-4S	M-1000	T-15D	T-15D
EBP125MWU	CSTB-5S	-	M-1000	T-20D	-
EBP125LWEU	CSTB-5S	CSTB-4S	M-1000	T-20D	T-15D

Recommended clamping torque: CSTB-2.5S = 0.96 lbs·ft, CSTD-3T = 1.84 lbs·ft, CSTB-4S = 2.58 lbs·ft, CSTB-5S = 3.69 lbs·ft

METRIC SPARE PARTS

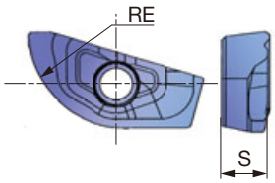


Designation	Clamping screw for Insert 1	Clamping screw for Insert 2	Lubricant	Wewnch 1 for Insert 1	Wewnch 2 for Insert 2
EBP020SS/SD-E	CSTD-3T	-	M-1000	T-10D	-
EBP020*SE/M*E-E	CSTD-3T	CSTB-2.5S	M-1000	T-10D	T-8D
EBP025SS/SD-E, EBP025*SE/M*E-E	CSTB-4S	-	M-1000	T-15D	-
EBP030SS/032SD-E	CSTB-5S	-	M-1000	T-20D	-
EBP030*SE/032M*E-E	CSTB-5S	CSTB-4S	M-1000	T-20D	T-15D

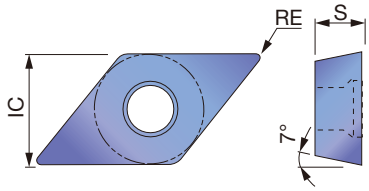
Recommended clamping torque: CSTB-2.5S = 1.3 N·m, CSTD-3T = 2.5 N·m, CSTB-4S = 3.5 N·m, CSTB-5S = 5 N·m

INSERT

ZPET-MJ (For R edge)



DCMW-TN (For P edge)



Inch

P	Steel	☆	★
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	RE	Coated		IC	S
		AH120	AH330		
ZPET075U-MJ	0.375	●	●	-	0.169
ZPET100U-MJ	0.500	●	●	-	0.228
ZPET125U-MJ	0.625	●	●	-	0.276
DCMW21.51TN	0.016	●	●	0.252	0.094
DCMW32.51TN	0.016	●	●	0.374	0.156

●: Line up
ZPET125U... : 5 piece per package

Metric

P	Steel	☆	★
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	RE	Coated		IC	S
		AH120	AH330		
ZPET2004-MJ	10	●	●	-	4.5
ZPET2505-MJ	12.5	●	●	-	5.63
ZPET3006-MJ	15	●	●	-	6.75
DCMW070204TN	0.4	●	●	6.4	2.4
DCMW11T304TN	0.4	●	●	9.5	4

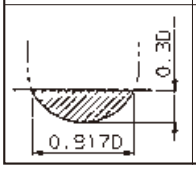
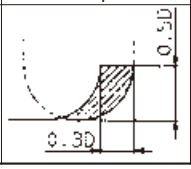
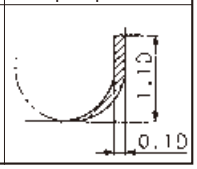
●: Line up
ZPET30... : 5 piece per package

STANDARD CUTTING CONDITIONS

Please scan below.

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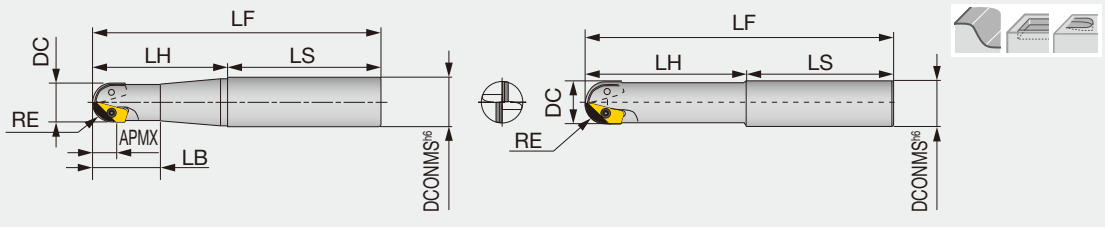
Machining types

(1) Grooving	(2) Shouldering at shallow depth of cut	(3) Shouldering at deep depth of cut
		

EBB

Ball nose endmill for semi-finishing, for CBN inserts





Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	Insert
EBB020MS	12	20	2	25	80	70	150	35	10	ZPCW2003-QBN
EBB025MS	15.5	25	2	32	100	80	180	50	12.5	ZPCW25H3-QBN
EBB030MS	18	30	2	32	100	100	200	-	15	ZPCW30T3-QBN
EBB040MS	23	40	2	42	100	150	250	-	20	ZPCW4004-QBN
EBB050MS	28	50	2	50	100	150	250	-	25	ZPCW5004-QBN

SPARE PARTS



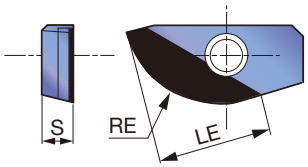


Designation	Clamping screw	Lubricant	Wewnch	Clamp set
EBB020MS	CSTB-3S	M-1000	T-9D	-
EBB025MS	CSTB-3.5	M-1000	T-15D	-
EBB030MS	CSTB-4S	M-1000	T-15D	-
EBB040MS, EBB050MS	CSTB-5	M-1000	T-20D	CSP22

Recommended clamping torque: CSTB-3S = 2.3 N·m, CSTB-3.5/CSTB-4S = 3.5 N·m, CSTB-5 = 5 N·m

INSERT

ZPCW-QBN



Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

P	Steel		
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	RE	CBN BX480	S	LE
ZPCW2003-QBN	0.394	●	0.125	0.472
ZPCW25H3-QBN	0.492	●	0.138	0.610
ZPCW30T3-QBN	0.591	●	0.156	0.709
ZPCW4004-QBN	0.787	●	0.187	0.906
ZPCW5004-QBN	0.984	●	0.187	1.102

●: Line up
BX480 : 1 piece per package

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog

EBB

EBD

Ball nose endmill for roughing



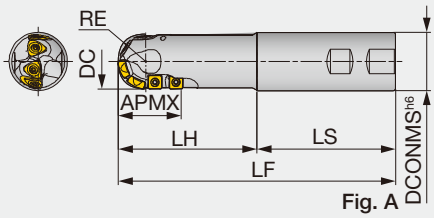


Fig. A

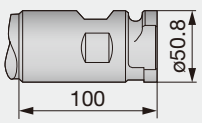
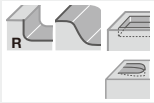


Fig. B



Combination shank

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	RE	Fig.	Insert R	Insert P
EBD040SSE	45	40	4 (7)	42	100	100	200	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD040MSE	45	40	4 (7)	42	100	150	250	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD050SSE	59	50	4 (7)	42	100	100	200	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050MSE	59	50	4 (7)	42	100	150	250	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050SCE	59	50	4 (7)	50.8	100	100	200	25	B	ZDMT5006-MJ	SCMT120408-23
EBD050MCE	59	50	4 (7)	50.8	100	150	250	25	B	ZDMT5006-MJ	SCMT120408-23

SPARE PARTS



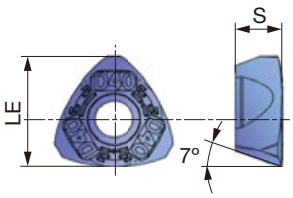


Designation	Clamping screw	Lubricant	Wewnch
EBD040*SE	CSTB-4M	M-1000	T-15T
EBD050**-E	CSTB-5	M-1000	T-20T

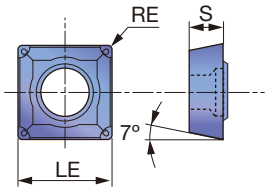
Recommended clamping torque：CSTB-4M = 3.5 N·m, CSTB-5 = 5 N·m

INSERT

ZDMT-MJ (For R edge)



SCMT-23 (For P edge)



P	Steel	☆
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated AH120	LE	S
ZDMT4005-MJ	-	●	0.512	0.217
ZDMT5006-MJ	-	●	0.638	0.256
SCMT09T308-23	0.031	●	0.375	0.156
SCMT120408-23	0.031	●	0.500	0.187

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

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EBD

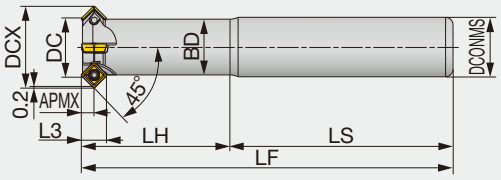
TUNGQUAD

EASD05

Chamfering endmill

GAMP = +5°, GAMF = -7° ~ +12°





Metric	DCX	CICT	DC*	BD	APMX	DCONMS	LH	L3	LS	LF	Air hole	Insert
EASD05M006C12.0R01	12	1	5.7	7.5	3	12	40	6.8	60	100	Without	SD*T0502...
EASD05M008C12.0R02	14	2	7.8	9.1	3	12	40	6.8	60	100	Without	SD*T0502...
EASD05M016C16.0R04	22	4	15.7	15	3	16	40	6.8	60	100	Without	SD*T0502...

The minimum chamfering diameter (DC) measures up to the point where the insert's nose radius ends.
This will offset the total tool length by shortening 0.012".

SPARE PARTS

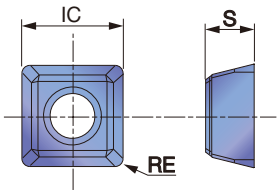



Designation	Clamping screw	Wrench
EASD05...	CSPB-2L043	IP-6DB

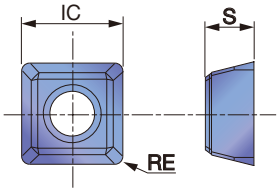
Recommended clamping torque: 0.7 N·m

INSERT

SDMT05-MJ

SDHT05-AJ

Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

		Coated		Uncoated
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

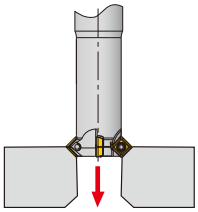
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated TH10	S	IC
SDMT050204PN-MJ	0.016	0.157	●	●		0.094	0.200
SDHT050204FN-AJ	0.016	0.157			●	0.094	0.200

● : Line up

CUTTING PERFORMANCE

Chamfering & countersinking

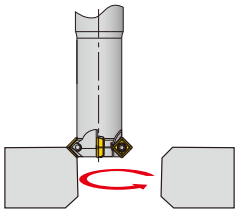


■ **C2.5 (45° x 0.098")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (ipt)
EASD05M006C12.0R01	262 - 394	0.001 - 0.003
EASD05M008C12.0R02	262 - 394	0.001 - 0.003
EASD05M016C16.0R04 (*z=2)	262 - 394	0.001 - 0.003

Interpolated chamfering

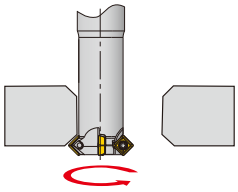


■ **C2.5 (45° x 0.098")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (ipt)
EASD05M006C12.0R01	262 - 394	0.003 - 0.005
EASD05M008C12.0R02	262 - 394	0.003 - 0.005
EASD05M016C16.0R04	262 - 394	0.003 - 0.005

Back chamfering



■ **C1.0 (45° x 0.039")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (ipt)
EASD05M006C12.0R01	262 - 394	0.003 - 0.005
EASD05M008C12.0R02	262 - 394	0.003 - 0.005
EASD05M016C16.0R04	262 - 394	0.003 - 0.005

STANDARD CUTTING CONDITIONS

■ Interpolated or back chamfering type

ISO	Workpiece material	Brinell hardness (HB)	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	- 200	AH725	755 - 1050	0.002 - 0.004
	High carbon steel 1045, 1055, etc.	200 - 300	AH725	492 - 755	0.002 - 0.004
	Alloyed steel 4140, 8620, etc.	150 - 300	AH725	492 - 755	0.002 - 0.004
	Tool steel W1-8, etc.	- 300	AH725	361 - 427	0.001 - 0.004
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	328 - 656	0.001 - 0.004
K	Gray cast iron Class 25, Class 30, etc.	150 - 250	AH725	492 - 820	0.002 - 0.005
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 - 250	AH725	328 - 591	0.002 - 0.005
N	Aluminum alloys Si < 13%	-	TH10	1148 - 1640	0.002 - 0.006
	Copper alloys	-	TH10	328 - 656	0.002 - 0.006

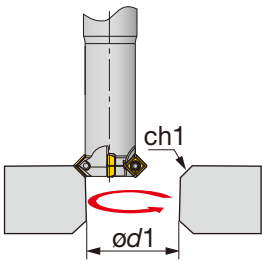
Front chamfering type

ISO	Workpiece material	Brinell hardness (HB)	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	- 200	AH725	525 - 722	0.002 - 0.004
	High carbon steel 1045, 1055, etc.	200 - 300	AH725	361 - 525	0.002 - 0.004
	Alloyed steel 4140, 8620, etc.	150 - 300	AH725	361 - 525	0.002 - 0.004
	Tool steel W1-8, etc.	- 300	AH725	262 - 295	0.001 - 0.004
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	230 - 459	0.001 - 0.004
K	Gray cast iron Class 25, Class 30, etc.	150 - 250	AH725	361 - 591	0.002 - 0.005
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 - 250	AH725	230 - 427	0.002 - 0.005
N	Aluminum alloys Si < 13%	-	TH10	820 - 1148	0.002 - 0.006
	Copper alloys	-	TH10	230 - 459	0.002 - 0.006

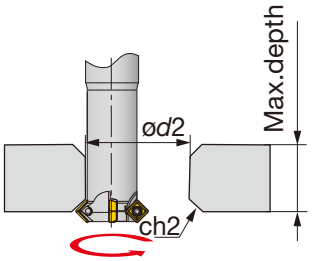
* When chamfering over C1.0 (45° x 0.039"), decrease the cutting parameters to 70% of the above parameters.

APPLICATION RANGE

Front chamfering



Back chamfering



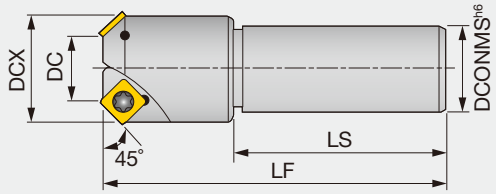
Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Designation	Minimum hole diameter to be chamfered (in)		Maximum chamfer dimension (at 45°) (in)		Maximum reachable hole distance when back chamfering (in)
	Front-chamfer ød1	Back-chamfer ød2	Front ch1	Back ch2	Max. depth
EASD05M006C12.0R01	0.224	0.492	0.114 x 0.114	0.079 x 0.079	0.717
EASD05M008C12.0R02	0.307	0.571	0.114 x 0.114	0.059 x 0.059	1.307
EASD05M016C16.0R04	0.622	0.886	0.114 x 0.114	0.110 x 0.110	1.701

ECP4400R

Chamfering endmill, screw clamp system, for square inserts





Inch	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR-U	0.394	1	1.083	1.250	4.500	2.480	SPMA422*N
ECP4423R-U	0.906	2	1.587	1.250	4.500	2.480	SPMA422*N
ECP4436R-U	1.417	3	2.098	1.250	4.500	2.480	SPMA422*N

Metric	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR	10	1	27.5	32	130	80	SPMA422*N
ECP4423R	23	2	40.3	32	130	80	SPMA422*N
ECP4436R	36	3	53.3	32	130	80	SPMA422*N

SPARE PARTS



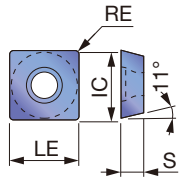


Designation	Clamping screw	Wrench
ECP44...	CSTA-4	T-15D

Recommended clamping torque: 2.58 lbs·ft, 3.5 N·m

INSERT

SPMA42

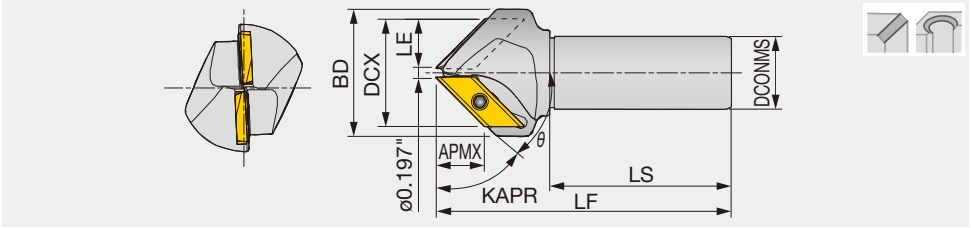


| | | Cermet | | Uncoated | | |

ECC31

Chamfering endmill, screw clamp system, for large parallelogram inserts





Inch	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005RU-30	1.338	1	60°	30°	1.575	0.197	1.004	1.000	2.281	4.250	XCET3104...
ECC31005RU-41	1.698	2	49°	41°	2.205	0.197	0.866	1.000	2.281	4.250	XCET3104...
ECC31005RU-45	1.846	2	45°	45°	2.205	0.197	0.827	1.000	2.281	4.250	XCET3104...
ECC31005RU-60	2.204	2	30°	60°	2.834	0.197	0.571	1.000	2.281	4.250	XCET3104...

Metric	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005R-30	34	1	60°	30°	40	14.5	25.5	32	80	130.2	XCET3104...
ECC31005R-45	46	2	45°	45°	56	20.5	20.5	32	80	130.1	XCET3104...
ECC31005R-60	55	2	30°	60°	72	25.5	14.5	32	80	130.1	XCET3104...

SPARE PARTS



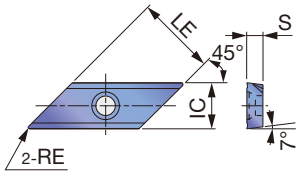


Designation	Clamping screw	Lubricant	Wrench
ECC31...	CSTB-5S	M-1000	T-20D

Recommended clamping torque: 3.69 lbs·ft, 5 N·m

INSERT

XCET31



Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90°

		Coated			Cermet	Un-coated			
		AH3135	AH330	AH120	NS740	UX30			
P	Steel	★	☆	☆	★	☆			
M	Stainless	★	★						
K	Cast iron		★	★					
N	Non-ferrous								
S	Superalloys								
H	Hard materials	☆							

★ : First choice
☆ : Second choice

Designation	RE	Coated AH3135	Coated AH330	Coated AH120	Cermet NS740	Un-coated UX30	LE	IC	S
XCET310404ER	0.016	●	●	●	●	●	0.866	0.500	0.177

●: Line up

STANDARD CUTTING CONDITIONS

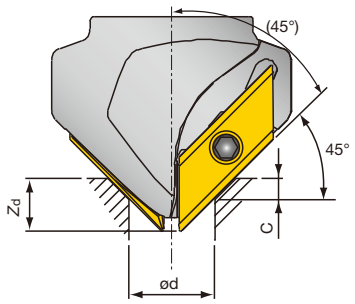
ISO	Workpiece material	Hardness (HB)	Grade	No. of revolutions: *n* (min-1)	Feed per tooth: *fz* (ipt)
P	Carbon steels 1055, etc. Alloy steels 4140, etc.	< 300	NS740	1000 - 3000 - 7000	0.004 - 0.010
			UX30	700 - 2000 - 4900	0.004 - 0.010
	Die steels H13, etc.	< 300	AH3135	1000 - 3000 - 7000	0.004 - 0.008
M	Stainless steels S30400, etc.	< 250	AH3135	1000 - 3000 - 7000	0.004 - 0.010
K	Cast irons No.250B, etc.	150 - 250	AH330	1000 - 3000 - 7000	0.004 - 0.010

- When the hole diameter to be chamfered is small or the cutting edges near the front end of tool are used, use at higher side of the revolution range shown in the Table.
  In contrast, when the hole diameter to be chamfered is large or the cutting edges far from the tool's front end are used, use the lower side of the revolution range shown in the Table.
- When chamfering a small diameter hole (smaller than ø0.400") in a plungemilling mode, peck-feeding should not be used.
- When the hole diameter to be chamfered is smaller than ø0.400" or the cutting edges near the tool's front end are used, the feed should be set within 0.006 ipt.

Guidelines for programming

Z-axis plunging depth Zd (in) in 45° chamfering of hole

Hole dia. ød (in)	Size of chamfering C (in)						
	0.020	0.039	0.059	0.079	0.118	0.157	0.197
0.197	0.028	0.047	0.067	0.087	0.126	-	-
0.236	0.047	0.067	0.087	0.106	0.146	-	-
0.268	0.063	0.083	0.102	0.122	0.161	-	-
0.315	0.087	0.106	0.126	0.146	0.185	-	-
0.335	0.094	0.114	0.134	0.154	0.193	-	-
0.394	0.126	0.146	0.165	0.185	0.224	0.264	0.303
0.402	0.130	0.150	0.169	0.189	0.228	0.268	0.307
0.472	0.165	0.185	0.205	0.224	0.264	0.303	0.343
0.551	0.205	0.224	0.244	0.264	0.303	0.343	0.382
0.630	0.244	0.264	0.283	0.303	0.343	0.382	0.421
0.689	0.272	0.291	0.311	0.331	0.370	0.408	0.449
0.787	0.323	0.343	0.362	0.382	0.421	0.461	0.500
0.827	0.343	0.362	0.382	0.402	0.441	0.480	0.520
0.945	0.402	0.421	0.441	0.461	0.500	0.539	0.579
1.181	0.520	0.539	0.559	0.579	0.618	0.657	0.697
1.299	0.579	0.598	0.618	0.638	0.677	0.717	0.756
1.417	0.638	0.657	0.677	0.697	0.736	0.776	-
1.654	0.756	0.776	0.795	-	-	-	-

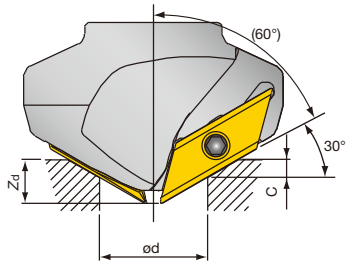


Tool: ECC31005R-45

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (in) in 30° chamfering of hole

Hole dia. ød (in)	Size of chamfering C (in)						
	0.020	0.039	0.059	0.079	0.098	0.118	0.138
0.197	0.024	0.043	0.063	0.083	-	-	-
0.236	0.035	0.055	0.075	0.094	-	-	-
0.268	0.043	0.063	0.083	0.102	-	-	-
0.315	0.055	0.075	0.094	0.114	-	-	-
0.335	0.063	0.083	0.102	0.122	-	-	-
0.394	0.079	0.098	0.118	0.138	0.157	0.177	0.197
0.402	0.083	0.102	0.122	0.142	0.161	0.181	0.201
0.472	0.102	0.122	0.142	0.161	0.181	0.201	0.220
0.551	0.146	0.165	0.185	0.205	0.224	0.244	0.264
0.630	0.165	0.185	0.205	0.224	0.244	0.264	0.283
0.689	0.193	0.213	0.232	0.252	0.272	0.291	0.311
0.787	0.205	0.224	0.244	0.264	0.283	0.303	0.323
0.827	0.240	0.260	0.280	0.299	0.319	0.339	0.358
0.945	0.307	0.327	0.346	0.366	0.386	0.406	0.45
1.181	0.343	0.362	0.382	0.402	0.421	0.441	0.461
1.299	0.374	0.394	0.413	0.433	0.453	0.472	0.492
1.417	0.398	0.417	0.437	0.457	0.476	0.496	0.516
1.654	0.441	0.461	0.480	0.500	0.520	0.539	0.559
1.811	0.488	0.508	0.528	0.547	0.567	-	-
1.890	0.512	0.531	0.551	0.571	-	-	-
2.047	0.555	-	-	-	-	-	-

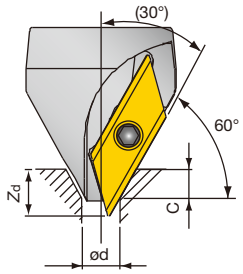


Tool: ECC31005R-60

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (in) in 60° chamfering of hole

Hole dia. ød (in)	Size of chamfering C (in)							
	0.020	0.039	0.059	0.079	0.098	0.118	0.138	0.157
0.197	0.031	0.051	0.071	0.091	0.110	-	-	-
0.236	0.067	0.087	0.106	0.126	0.146	-	-	-
0.268	0.094	0.114	0.134	0.154	0.173	-	-	-
0.315	0.134	0.154	0.173	0.193	0.213	-	-	-
0.335	0.150	0.169	0.189	0.209	0.228	-	-	-
0.394	0.201	0.220	0.240	0.260	0.280	0.299	0.319	0.339
0.402	0.209	0.228	0.248	0.268	0.287	0.307	0.327	0.346
0.472	0.272	0.291	0.311	0.331	0.350	0.370	0.390	0.409
0.551	0.406	0.425	0.445	0.465	0.484	0.504	0.524	0.543
0.630	0.457	0.476	0.496	0.516	0.535	0.555	0.575	0.594
0.689	0.539	0.559	0.579	0.598	0.618	0.638	0.657	0.677
0.787	0.575	0.594	0.614	0.634	0.654	0.673	0.693	0.713
0.827	0.677	0.697	0.717	0.736	0.756	0.776	0.795	0.815
0.945	0.882	0.902	0.921	0.941	0.961	0.980	1.000	-
1.181	0.980	1.000	-	-	-	-	-	-



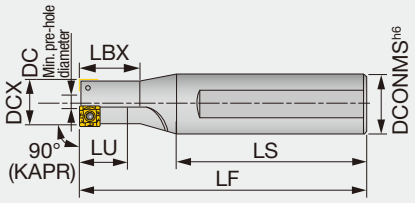
Tool: ECC31005R-30

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

TCB

Counterboring endmill, monoblock type



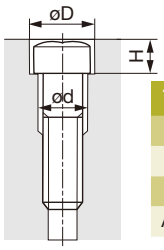


Metric	DCX	CICT	DC	LU	LBX	LF	LS	DCONMS	Insert
TCB100F16	10	1	2.8	13	17	86	60	16	SPMP771...
TCB110F16	11	1	2.8	14	18.7	87	60	16	SPMP771...
TCB120F20	12	1	3.6	15	20.5	89	60	20	SPMP771...
TCB130F20	13	2	4.5	16	22.2	91	60	20	SPMP771...
TCB-140	14	1	4	11	18	117	80	25	SPMP831...
TCB140F25	14	2	5.5	18	24	113	80	25	SPMP771...
TCB150F25	15	2	6.5	19	25.7	114	80	25	SPMP771...
TCB160F25	16	2	7.5	20	27.5	116	80	25	SPMP771...
TCB170F25	17	2	6.6	13	21	114	80	25	SPMP831...
TCB175F25	17.5	2	7.1	14	22	115	80	25	SPMP831...
TCB180F25	18	2	7.5	15	23	116	80	25	SPMP831...
TCB190F25	19	2	8.5	15	24	118	80	25	SPMP831...
TCB-200	20	2	8.2	16	25	120	80	25	SPMP042...
TCB200F25	20	2	8.2	16	25	120	80	25	SPMP042...
TCB210F25	21	2	9	17	26	122	80	25	SPMP042...
TCB220F25	22	2	10	18	28	124	80	25	SPMP042...
TCB-230	23	2	11	19	29	126	80	25	SPMP042...
TCB230F25	23	2	11	19	29	126	80	25	SPMP042...
TCB240F25	24	2	12	20	-	128	80	25	SPMP042...
TCB250F25	25	2	13	25	-	130	80	25	SPMP042...
TCB-260	26	2	14	21	33	132	80	32	SPMP042...
TCB-290	29	2	14	23	36	138	80	32	SPMM322...
TCB-320	32	2	16.9	40	-	144	80	32	SPMM322...
TCB-350	35	2	14	43	-	150	80	32	SPMM432...
TCB-390	39	2	17.9	48	-	158	80	32	SPMM432...
TCB-430	43	2	21.7	53	-	171	85	42	SPMM432...

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

Countersink dimensions of bolt hole



Thread size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
øD (mm)	11	14	17.5	20	23	26	29	32	35	39	43
H (mm)	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29
ød (mm)	6	9	11	14	16	18	20	22	24	26	30
Applicable tool	TCB110	TCB140	TCB175	TCB200	TCB230	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430

SPARE PARTS




Designation	Clamping screw	Wrench
TCB100... - TCB160...	CSTB-2L040	T-6D
TCB-140...	CSTB-2.2S	T-7D
TCB170... - TCB190...	CSTB-2.2	T-7D
TCB200... - TCB260...	CSTA-NO3	T-9D
TCB-290 - TCB-320	CSTA-NO5	T-9D
TCB-350 - TCB-430	CSTA-4	T-15D

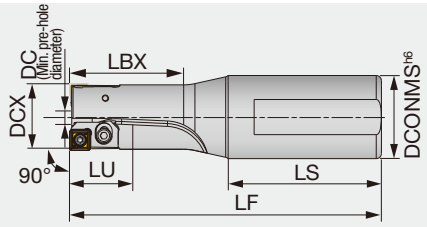
Recommended clamping torque: CSTB-2L040 = 0.7 N·m, CSTB-2.2S / CSTB-2.2 = 1 N·m, CSTA-NO3 / CSTA-NO5 = 2.3 N·m, CSTA-4 = 3.5 N·m

Reference pages: Inserts → H253, Standard cutting conditions → H253 - H254

TCB

Counterboring endmill, cartridge type





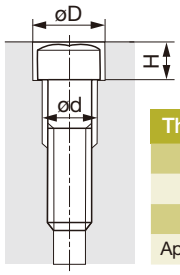
LU: Maximum hole depth

Metric	DCX*	DCONMS	DC*	LU	LS	LBX	LF	WT(kg)	Cartridge set Designation	Shim plate Designation	Shim plate Thickness	Insert
TCB260-290F32	26	32	13.2	40	59	43	120	0.6	TCB04CA-26-29	-	-	SPMP042...
TCB260-290F32	27	32	14.2	40	59	43	120	0.6	TCB04CA-26-29	AP16050	0.5	SPMP042...
TCB260-290F32	28	32	15.2	40	59	43	120	0.6	TCB04CA-26-29	AP16100	1	SPMP042...
TCB260-290F32	29	32	16.2	40	59	43	120	0.6	TCB04CA-26-29	AP16150	1.5	SPMP042...
TCB300-340F32	30	32	14.2	45	59	55	130	0.6	TCB32CA-30-39	-	-	SPMM322...
TCB300-340F32	31	32	15.2	45	59	55	130	0.6	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB300-340F32	32	32	16.2	45	59	55	130	0.6	TCB32CA-30-39	AP16100	1	SPMM322...
TCB300-340F32	33	32	17.2	45	59	55	130	0.6	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB300-340F32	34	32	18.2	45	59	55	130	0.6	TCB32CA-30-39	AP16200	2	SPMM322...
TCB350-390F32	35	32	19	50	59	70	140	0.7	TCB32CA-30-39	-	-	SPMM322...
TCB350-390F32	36	32	20	50	59	70	140	0.7	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB350-390F32	37	32	21	50	59	70	140	0.7	TCB32CA-30-39	AP16100	1	SPMM322...
TCB350-390F32	38	32	22	50	59	70	140	0.7	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB350-390F32	39	32	23	50	59	70	140	0.7	TCB32CA-30-39	AP16200	2	SPMM322...
TCB400-440F32	40	32	18	55	59	80	150	1	TCB43CA-40-59	-	-	SPMM432...
TCB400-440F32	41	32	19	55	59	80	150	1	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB400-440F32	42	32	20	55	59	80	150	1	TCB43CA-40-59	AP21100	1	SPMM432...
TCB400-440F32	43	32	21	55	59	80	150	1	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB400-440F32	44	32	22	55	59	80	150	1	TCB43CA-40-59	AP21200	2	SPMM432...
TCB450-490F32	45	32	23	65	59	90	160	1.2	TCB43CA-40-59	-	-	SPMM432...
TCB450-490F32	46	32	24	65	59	90	160	1.2	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB450-490F32	47	32	25	65	59	90	160	1.2	TCB43CA-40-59	AP21100	1	SPMM432...
TCB450-490F32	48	32	26	65	59	90	160	1.2	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB450-490F32	49	32	27	65	59	90	160	1.2	TCB43CA-40-59	AP21200	2	SPMM432...
TCB500-540F32	50	32	28	70	59	97	165	1.5	TCB43CA-40-59	-	-	SPMM432...
TCB500-540F32	51	32	29	70	59	97	165	1.5	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB500-540F32	52	32	30	70	59	97	165	1.5	TCB43CA-40-59	AP21100	1	SPMM432...
TCB500-540F32	53	32	31	70	59	97	165	1.5	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB500-540F32	54	32	32	70	59	97	165	1.5	TCB43CA-40-59	AP21200	2	SPMM432...
TCB550-590F32	55	32	33	75	59	105	175	1.9	TCB43CA-40-59	-	-	SPMM432...
TCB550-590F32	56	32	34	75	59	105	175	1.9	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB550-590F32	57	32	35	75	59	105	175	1.9	TCB43CA-40-59	AP21100	1	SPMM432...
TCB550-590F32	58	32	36	75	59	105	175	1.9	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB550-590F32	59	32	37	75	59	105	175	1.9	TCB43CA-40-59	AP21200	2	SPMM432...

* - Dimensions shown are for min diameter setting. DC dimension changes when shims are added for larger diameter counterboring.
The cartridge sets and shim plates are included.

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M16	M18	M20	M22	M24	M27	M30	M33	M36
øD (mm)	26	29	32	35	39	43	48	54	58
H (mm)	17.5	19.5	21.5	23.5	25.5	29	32	35	38
ød (mm)	18	20	22	24	26	30	33	36	39
Applicable tool	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430	TCB480	TCB540	TCB580

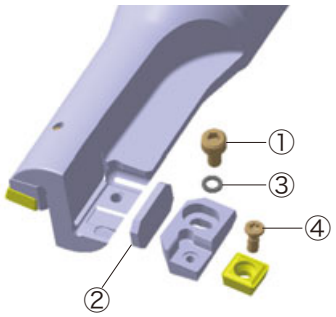
Reference pages: Inserts → H253, Standard cutting conditions → H253 - H254

Body
SPARE PARTS

Designation	① Cartridge screw	② Shim plate	② Shim plate	② Shim plate	② Shim plate	Wrench for cartridge	③ Washer
TCB260-290F32	CM3×0.5×6	AP16050	AP16100	AP16150		P-2.5	3.2X6X0.5
TCB300-340F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB350-390F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB400-440F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB450-490F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB500-540F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB550-590F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5

Cartridge set
SPARE PARTS

Designation	④ Insert screw	Wrench
TCB04CA-26-29	CSTA-NO3	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D



Recommended clamping torque: CSTA-NO3 / CSTA-NO5 = 2.3 N·m, CSTA-4 = 3.5 N·m

Fine adjustment shim plates (sold separately)
SPARE PARTS

Designation	Thickness
AP16005	0.05
AP16020	0.2
AP21005	0.05
AP21020	0.2

Cautions in preparing the cartridge type cutter

- Firmly press the cartridge in the arrowed direction while tightening the screw to install the cartridge on the cutter body. (Fig.1)
- Ensure that the shim plates thickness are always the same on both sides to equalize the tool diameter.
- Ensure to locate the shim plate fit within the cartridge pocket. (Fig.2)
- Use thin shim plates (not included) for fine diameter adjustments in ø0.1 mm increments.
- When using multiple shim plates in one pocket for a diameter adjustment, always use the thinnest shim plates at the bottom to prevent them from dislocating during machining. (Fig.3)
- Ensure that the top shim is always in contact with the rim of the cartridge pocket to prevent it from dislocation during machining. (Fig.4)


Fig.1


Fig.2

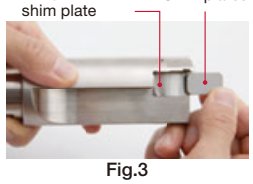


Fig.3



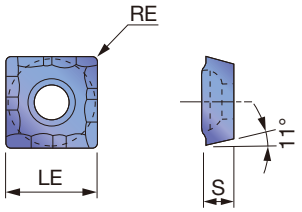
Fig.4

CUSTOM-BUILT TOOL SERVICE

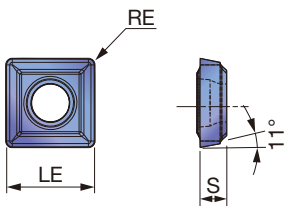
Tungaloy also designs and fabricates semi-standard or tailor-made tools with the TCB inserts according to the desired tool specifications. Contact your Tungaloy representative for further details.

INSERT

SPMP/SPMM



SPMP/SPMM-CG



P	Steel	☆	★	★
M	Stainless	☆	★	★
K	Cast iron	☆	★	★
N	Non-ferrous	☆	☆	☆
S	Superalloys	☆	☆	☆
H	Hard materials	☆	☆	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated			LE	S
		T313W	AH6030	AH6225		
SPMP771-CG	0.016		▲	●	0.213	0.063
SPMP831-CG	0.016		▲	●	0.250	0.094
SPMP831DS	0.016	●			0.250	0.094
SPMP832-CG	0.031			●	0.250	0.094
SPMP041ER-CG	0.016			●	0.313	0.125
SPMP042ER-CG	0.031		▲	●	0.313	0.125
SPMP042ERD	0.031	●			0.313	0.125
SPMM321ER-CG	0.016			●	0.375	0.125
SPMM322ER-CG	0.031		▲	●	0.375	0.125
SPMM322ERD	0.031	●			0.375	0.125
SPMM431ER-CG	0.016			●	0.500	0.187
SPMM432ER-CG	0.031		▲	●	0.500	0.187
SPMM432ERD	0.031	●			0.500	0.187

● : Line up
▲ : To be discontinued

STANDARD CUTTING CONDITIONS

Counterboring

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed : *f* (ipr)	
				ø10 - 12 mm (z = 1)	ø13 - 59 mm (z = 2)
P	Carbon steel	- 300 HB	260 - 660	0.001 - 0.003	0.004 - 0.012
M	Stainless steel	- 200 HB	260 - 490	0.001 - 0.002	0.002 - 0.006
K	Gray cast iron	150 - 250 HB	260 - 660	0.002 - 0.004	0.004 - 0.016
N	Non-ferrous	-	330 - 980	0.002 - 0.008	0.004 - 0.016
S	Superalloys	- 40 HRC	160 - 260	0.001 - 0.002	0.002 - 0.006
H	Hard materials	- 50 HRC	160 - 260	0.001 - 0.002	0.002 - 0.006

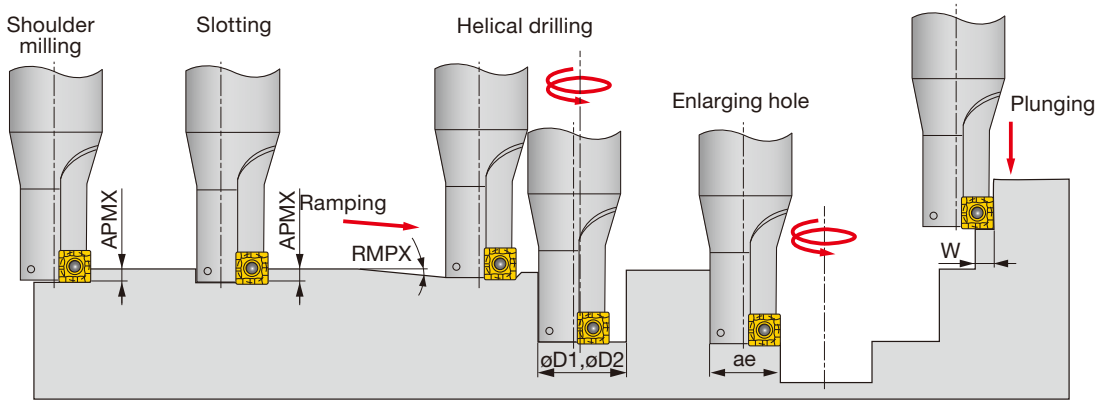
Milling

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel	- 300 HB	260 - 660	0.002 - 0.006
M	Stainless steel	- 200 HB	260 - 490	0.002 - 0.004
K	Gray cast iron	150 - 250 HB	260 - 660	0.002 - 0.008
N	Non-ferrous	-	330 - 980	0.004 - 0.008
S	Superalloys	- 40 HRC	160 - 260	0.002 - 0.003
H	Hard materials	- 50 HRC	160 - 260	0.002 - 0.003

Internal boring (With one cutting edge)

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed : *f* (ipr)
P	Carbon steel	- 300 HB	260 - 660	0.020 -	0.002 - 0.006
M	Stainless steel	- 200 HB	260 - 490	0.020 -	0.002 - 0.004
K	Gray cast iron	150 - 250 HB	260 - 660	0.020 -	0.002 - 0.008
N	Non-ferrous	-	330 - 980	0.020 -	0.004 - 0.008
S	Superalloys	- 40 HRC	160 - 260	0.020 -	0.002 - 0.003
H	Hard materials	- 50 HRC	160 - 260	0.020 -	0.002 - 0.003

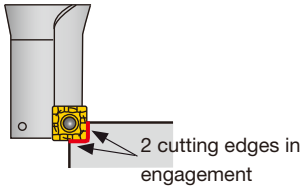
APPLICATION



Approach angle: 7°-25° | 41°-45° | 60°-70° | 85°-88° | 90° | Others

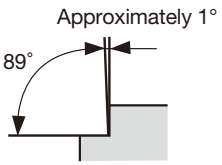
Metric	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max.cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarging hole ae
TCB100F16	10	4	-	4	-	-	-
TCB110F16	11	4	2.1°	4	12	20	10
TCB120F20	12	4	2.1°	4	14	22	11
TCB130F20	13	4	2.1°	4	17	24	12
TCB-140	14	5	3°	5	20	25	13
TCB140F25	14	4	1.9°	4	19	26	13
TCB150F25	15	4	1.6°	4	21	28	14
TCB160F25	16	4	1.3°	4	23	30	15
TCB170F25	17	5	2.5°	5	25	32	16
TCB175F25	17.5	5	2.2°	5	25.5	33	16.5
TCB180F25	18	5	2°	5	26	34	17
TCB190F25	19	5	1.5°	5	27	36	18
TCB200F25	20	6	3°	6	29	38	19
TCB210F25	21	6	2.5°	6	30	40	20
TCB220F25	22	6	2°	6	31	42	21
TCB230F25	23	6	1.6°	6	32	44	22
TCB240F25	24	6	1.3°	6	33	46	23
TCB250F25	25	6	1.1°	6	34	48	24.5
TCB-260	26	6	1°	6	35	50	25
TCB-290	29	8	3°	8	37	56	28
TCB-320	32	8	2.5°	8	40	62	31
TCB-350	35	10	2.5°	10	45	68	34
TCB-390	39	10	2°	10	49	76	38
TCB-430	43	10	1.5°	10	53	84	42

The insert can be used for a maximum 2 indexings.
(full 4 indexing for a plunging application.)



Cautions in shouldering operation

The cutter is design so that the insert provides 1° taper relief on the periphery. The wall, therefore, will be 89° when milled.

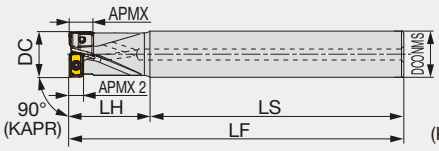


EVLX06/08/10/12/16/19

Multi-functional square shoulder milling cutter,
with screwed-on inserts and center cutting edge

GAMP: Center insert -2.6° ~ -4.4°, Peripheral insert +6.1° ~ +7.1°
GAMF: Center insert +0.2° ~ +1.3°, Peripheral insert -15.7° ~ -15°





Inch

Fig. 1

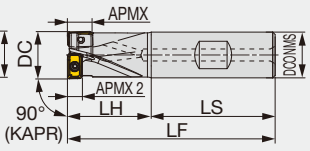
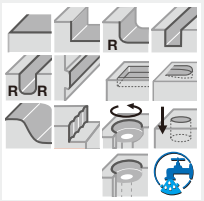


Fig. 2



Inch	APMX	APMX 2	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert	Fig.
EVLX06U0.50W0.50R02	0.197	0.110	0.500	2	0.500	1.781	0.756	2.537	0.110	With	LXMU06...	2
EVLX06U0.50C0.50R02L	0.197	0.110	0.500	2	0.500	3.000	1.500	4.500	0.220	With	LXMU06...	1
EVLX08U0.62W0.62R02	0.276	0.157	0.625	2	0.625	1.910	1.250	3.160	0.100	With	LXMU08...	2
EVLX08U0.62C0.62R02L	0.276	0.157	0.625	2	0.625	5.000	2.000	7.000	0.240	With	LXMU08...	1
EVLX10U0.787W0.75R02	0.354	0.157	0.787	2	0.750	2.030	1.380	3.410	0.160	With	LXMU10...	2
EVLX10U0.787C0.75R02L	0.354	0.157	0.787	2	0.750	5.000	2.380	7.380	0.370	With	LXMU10...	1
EVLX12U1.00W1.00R02	0.433	0.236	1.000	2	1.000	2.280	1.750	4.030	0.340	With	LXMU12...	2
EVLX12U1.00C1.00R02L	0.433	0.236	1.000	2	1.000	6.000	3.000	9.000	0.810	With	LXMU12...	1
EVLX16U1.25W1.25R02	0.571	0.276	1.250	2	1.250	2.281	2.000	4.281	1.210	With	LXMU16...	2
EVLX16U1.25C1.25R02L	0.571	0.276	1.250	2	1.250	6.500	3.500	10.000	3.060	With	LXMU16...	1
EVLX19U1.50W1.25R02	0.709	0.394	1.500	2	1.250	2.281	2.250	4.531	1.650	With	LXMU19...	2
EVLX19U1.50C1.25R02L	0.709	0.394	1.500	2	1.250	7.750	2.250	10.000	3.510	With	LXMU19...	1

Metric	APMX	APMX 2	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert	Fig.
EVLX06M012C12.0R02	5	2.8	12	2	12	60	20	80	0.06	With	LXM/GU06...	1
EVLX06M012C12.0R02L	5	2.8	12	2	12	85	35	120	0.09	With	LXM/GU06...	1
EVLX06M013C12.0R02L	5	2.8	13	2	12	95	25	120	0.09	With	LXM/GU06...	1
EVLX08M016C16.0R02	7	4	16	2	16	100	30	130	0.18	With	LXM/GU08...	1
EVLX08M016C16.0R02L	7	4	16	2	16	130	50	180	0.25	With	LXM/GU08...	1
EVLX08M017C16.0R02L	7	4	17	2	16	155	25	180	0.26	With	LXM/GU08...	1
EVLX10M020C20.0R02	9	4	20	2	20	110	35	145	0.31	With	LXM/GU10...	1
EVLX10M020C20.0R02L	9	4	20	2	20	130	60	190	0.41	With	LXM/GU10...	1
EVLX10M021C20.0R02L	9	4	21	2	20	160	30	190	0.42	With	LXM/GU10...	1
EVLX12M025C25.0R02	11	6	25	2	25	105	45	150	0.51	With	LXM/GU12...	1
EVLX12M025C25.0R02L	11	6	25	2	25	150	75	225	0.77	With	LXM/GU12...	1
EVLX12M026C25.0R02L	11	6	26	2	25	190	35	225	0.8	With	LXM/GU12...	1
EVLX16M032C32.0R02	14.5	7	32	2	32	100	50	150	0.83	With	LXM/GU16...	1
EVLX16M032C32.0R02L	14.5	7	32	2	32	165	90	255	1.45	With	LXM/GU16...	1
EVLX16M033C32.0R02L	14.5	7	33	2	32	205	50	255	1.5	With	LXM/GU16...	1
EVLX19M040C32.0R02	18	10	40	2	32	100	55	155	1.03	With	LXM/GU19...	1
EVLX19M040C32.0R02L	18	10	40	2	32	200	55	255	1.6	With	LXM/GU19...	1

SPARE PARTS





Designation	Clamping screw	Wrench
EVLX06...	CSPB-1.8FL4.3	IP-6DB
EVLX08...	CSPB-2.2	IP-7D
EVLX10...	SR M2.5X0.45-L6 IP7	IP-7D
EVLX12...	TS30100I/HG-P	IP-9D
EVLX16...	CSTB-4L090	T-15D
EVLX19...	CSTB-5	T-20D

Recommended clamping torque: CSPB-1.8FL4.3 = 0.37 lbs·ft, 0.5 N·m, CSPB-2.2, SR M2.5X0.45-L6 IP7 = 0.74 lbs·ft, 1 N·m, TS30100I/HG-P = 1.48 lbs·ft, 2 N·m, CSTB-4L090 = 2.58 lbs·ft, 3.5 N·m, CSTB-5 = 3.69 lbs·ft, 5 N·m

Reference pages: Inserts, Standard cutting conditions → H257, TungFlex → H038 - H039

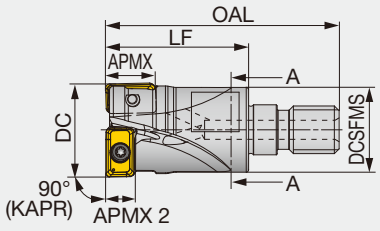
ULTI DOMREC

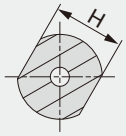
HVLX06/08/10/12/16-M

Multi-functional square shoulder modular milling cutter (TungFlex), with screwed-on inserts and center cutting edge

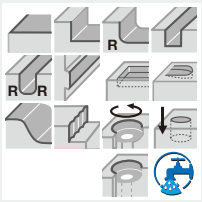
GAMP: Center insert -2.6° ~ -4.4°, Peripheral insert +6.1° ~ +7.1°
GAMF: Center insert +0.2° ~ +1.3°, Peripheral insert -15.7° ~ -15°







A-A cross section



Metric	APMX	APMX 2	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HVLX06M012M06R02	5	2.8	12	2	34.5	20	7	10	M6	0.02	With	LXM/GU06...
HVLX06M013M06R02	5	2.8	13	2	34.5	20	7	10	M6	0.02	With	LXM/GU06...
HVLX08M016M08R02	7	4	16	2	42	25	10	14.5	M8	0.03	With	LXM/GU08...
HVLX08M017M08R02	7	4	17	2	42	25	10	14.5	M8	0.04	With	LXM/GU08...
HVLX10M020M10R02	9	4	20	2	49	30	15	17.8	M10	0.05	With	LXM/GU10...
HVLX10M021M10R02	9	4	21	2	49	30	15	17.8	M10	0.06	With	LXM/GU10...
HVLX12M025M12R02	11	6	25	2	57	35	17	23	M12	0.1	With	LXM/GU12...
HVLX12M026M12R02	11	6	26	2	57	35	17	23	M12	0.1	With	LXM/GU12...
HVLX16M032M16R02	14.5	7	32	2	63	40	22	28.8	M16	0.21	With	LXM/GU16...
HVLX16M033M16R02	14.5	7	33	2	63	40	22	28.8	M16	0.21	With	LXM/GU16...

SPARE PARTS





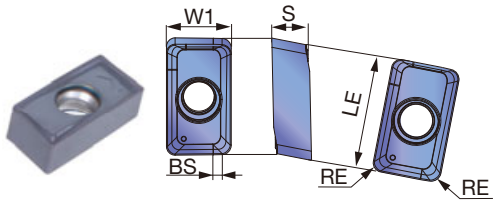
Designation	Clamping screw	Wrench
HVLX06...	CSPB-1.8FL4.3	IP-6DB
HVLX08...	CSPB-2.2	IP-7D
HVLX10...	SR M2.5X0.45-L6 IP7	IP-7D
HVLX12...	TS30100I/HG-P	IP-9D
HVLX16...	CSTB-4L090	T-15D

Recommended clamping torque: CSPB-1.8FL4.3 = 0.37 lbs·ft, 0.5 N·m, CSPB-2.2, SR M2.5X0.45-L6 IP7 = 0.74 lbs·ft, 1 N·m, TS30100I/HG-P = 1.48 lbs·ft, 2 N·m, CSTB-4L090 = 2.58 lbs·ft, 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H222, TungFlex → H036 - H037

INSERT

LXMU-MM



P	Steel	★	☆	
M	Stainless	★		
K	Cast iron		☆	★
N	Non-ferrous			
S	Superalloys	☆		★
H	Hard materials			★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH120	Coated AH8015	LE	W1	S	BS
LXMU060204PER-MM	0.0157	0.197	●		●	0.236	0.154	0.091	0.024
LXMU080304PER-MM	0.016	0.276	●	●	●	0.303	0.197	0.110	0.031
LXMU10T304PER-MM	0.016	0.354	●		●	0.394	0.236	0.126	0.047
LXMU10T308PER-MM	0.031	0.354	●	●	●	0.394	0.236	0.126	0.031
LXMU120404PER-MM	0.016	0.433	●		●	0.480	0.280	0.165	0.047
LXMU120408PER-MM	0.031	0.433	●	●	●	0.480	0.280	0.165	0.031
LXMU160504PER-MM	0.0157	0.591	●		●	0.618	0.370	0.206	0.063
LXMU160508PER-MM	0.0315	0.591	●		●	0.618	0.370	0.207	0.047
LXMU190608PER-MM	0.0315	0.709	●		●	0.748	0.492	0.269	0.047

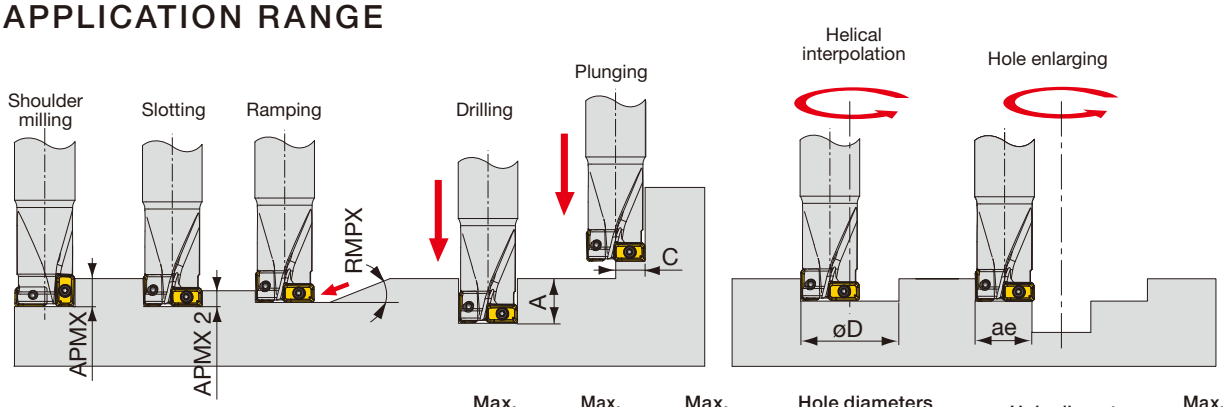
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Grades	Cutting speed *Vc* (sfm)	Drilling (ZEFP = 1)* Feed per revolution *f* (ipr)	Shouldering / Helical interpolation* Feed per tooth *fz* (ipt) 08	10 / 12
P	Low carbon steel 1015, etc.		- 200 HB	AH3225	328 - 984	0.001 - 0.003	0.002 - 0.010	0.002 - 0.012
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	AH3225	328 - 820	0.001 - 0.003	0.002 - 0.010	0.002 - 0.012
P	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	AH3225	328 - 656	0.001 - 0.002	0.002 - 0.008	0.002 - 0.010
M	Stainless steel 304SS, etc.		-	AH3225	262 - 591	0.001 - 0.003	0.002 - 0.008	0.002 - 0.009
K	Gray cast iron Class 25, Class 30, etc.		150 - 250 HB	AH8015	328 - 984	0.001 - 0.004	0.002 - 0.010	0.002 - 0.012
K	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	AH8015	328 - 820	0.001 - 0.003	0.002 - 0.008	0.002 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.		-	AH3225	66 - 197	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
S	Superalloys Inconel718, etc.		-	AH8015	66 - 131	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
H	Hardened steel	H-13, etc.	40 - 50 HRC	AH8015	164 - 492	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
H	Hardened steel	D2, etc.	50 - 60 HRC	AH8015	131 - 230	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006

*In the following cases, feed as if the cutter has a single effective cutting edge (ZEFP = 1):
- Hole making
- Helical interpolating for holes with a hole diameter (øD) ≤ 1.25x the tool diameter (DC)
- The axial D.O.C. exceeds APMX2 (See next page for APMX2)

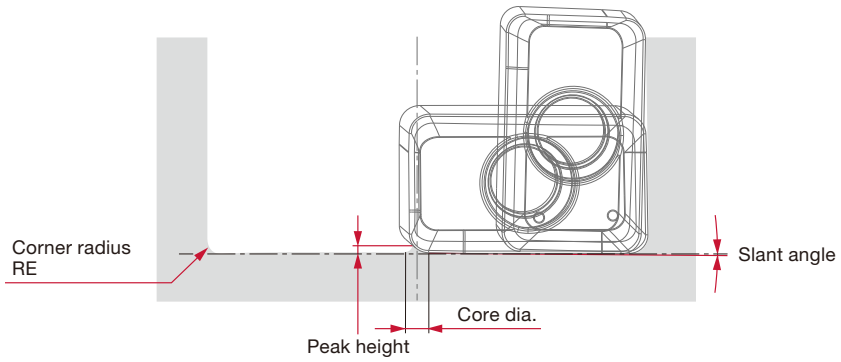
APPLICATION RANGE



		Max. depth of cut		Max. drilling depth*	Max. cutting width in plunging	Max. ramping angle	Hole diameters (w/ flat bottom) machinable		Hole diameters machinable		Max. cutting width engagement
Inch	DC	APMX	APMX 2	A	C	RMPX	øDmin	øDmax	øDmin	øDmax	ae
EVLX08U0.62…	0.625	0.276	0.157	0.469	0.313	3°	16.930	30.470	0.625	31.330	0.546
EVLX10U0.787…	0.780	0.354	0.157	0.590	0.394	3°	22.000	37.950	0.787	39.150	0.708
EVLX12U1.00…	1.000	0.433	0.236	0.750	0.500	3°	27.450	48.650	1.000	49.750	0.921

*Use pecking or dwelling method when drilling holes deeper than 0.197".

HOLE BOTTOM PROFILE AFTER DRILLING



Unit: mm

Unit: in

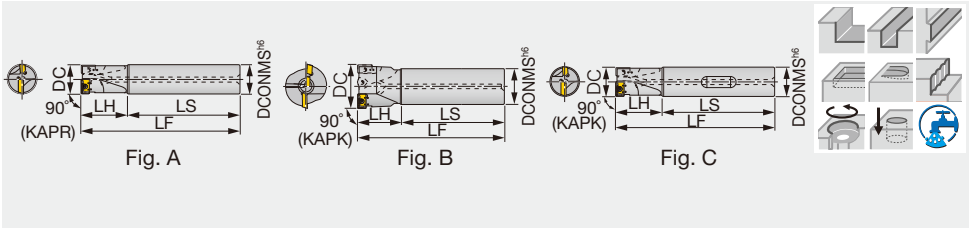
DC	D16	D17	D20		D21		D25		D26		0.625"	0.787"		1.000"	
Insert	LXMU08...		LXMU10...				LXMU12...				LXMU08...	LXMU10...		LXMU12...	
RE	0.4		0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.016"	0.016"	0.031"	0.016"	0.031"
Peak height	0.43	0.86	0.1	0.24	0.86	0.86	0.45	0.45	0.86	0.86	0.0134"	0.004"	0.009"	0.034"	0.034"
Core dia.	0.9	1.9	0.21	1.02	1.22	2.02	0.7	1.37	1.59	2.36	0.0307"	0.008"	0.04"	0.041"	0.07"
Slant angle	Conical shape with ≈ 0.3° slant angle														

EVX

Multi purpose endmill, shank type, with center cutting edge

Standard type GAMP = +2˚~ +5˚, GAMF = -10˚~ -3.5˚
Long type GAMP = +5˚, GAMF = -4˚~ -2˚





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08062RSU	0.276	0.625	2	0.625	1.906	1.250	3.156	Without	C	XXMU08...
EVX08062RLHU	0.276	0.625	2	0.625	5.375	1.625	7.000	With	A	XXMU08...
EVX10020RSU	0.276	0.787	2	0.750	2.031	1.250	3.281	Without	C	XXMU10...
EVX10020RLHU	0.276	0.787	2	0.750	5.500	2.000	7.500	With	A	XXMU10...
EVX12100RSU	0.276	1.000	2	1.000	2.281	1.625	3.906	Without	C	XXMU12...
EVX12100RLHU	0.354	1.000	2	1.000	6.000	2.750	8.750	With	A	XXMU12...
EVX16125RSU	0.276	1.250	2	1.250	2.281	2.000	4.281	Without	C	XXMU16...
EVX16125RLHU	0.354	1.250	2	1.250	6.750	3.250	10.000	With	A	XXMU16...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08016RSA	7	16	2	16	90	30	120	With	A	XXMU08...
EVX08016RS	7	16	2	16	90	30	120	Without	A	XXMU08...
EVX08016RLA	7	16	2	16	135	40	175	With	A	XXMU08...
EVX08016RL	7	16	2	16	135	40	175	Without	A	XXMU08...
EVX10020RSA	9	20	2	20	90	30	120	With	A	XXMU10...
EVX10020RS	9	20	2	20	90	30	120	Without	A	XXMU10...
EVX10020RLA	9	20	2	20	135	50	185	With	A	XXMU10...
EVX10020RL	9	20	2	20	135	50	185	Without	A	XXMU10...
EVX12025RSA	11.5	25	2	25	100	40	140	With	A	XXMU12...
EVX12025RS	11.5	25	2	25	100	40	140	Without	A	XXMU12...
EVX12025RLA	11.5	25	2	25	150	70	220	With	A	XXMU12...
EVX12025RL	11.5	25	2	25	150	70	220	Without	A	XXMU12...
EVX16032RSA	15	32	2	32	110	50	160	With	A	XXMU16...
EVX16032RS	15	32	2	32	110	50	160	Without	A	XXMU16...
EVX16032RLA	15	32	2	32	175	80	255	With	A	XXMU16...
EVX16032RL	15	32	2	32	175	80	255	Without	A	XXMU16...
EVX12040RSA	11.5	40	2	42	120	60	180	With	B	XXMU12, WCMT05...
EVX12040RS	11.5	40	2	42	120	60	180	Without	B	XXMU12, WCMT05...
EVX12040RLA	11.5	40	2	42	210	100	310	With	B	XXMU12, WCMT05...
EVX12040RL	11.5	40	2	42	210	100	310	Without	B	XXMU12, WCMT05...
EVX16050RSA	15	50	2	42	160	50	210	With	B	XXMU16, WCMT06...
EVX16050RS	15	50	2	42	160	50	210	Without	B	XXMU16, WCMT06...
EVX16050RLA	15	50	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16050RL	15	50	2	42	310	50	360	Without	B	XXMU16, WCMT06...
EVX16063RSA	15	63	2	42	190	50	240	With	B	XXMU16, WCMT06...
EVX16063RS	15	63	2	42	190	50	240	Without	B	XXMU16, WCMT06...
EVX16063RLA	15	63	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16063RL	15	63	2	42	310	50	360	Without	B	XXMU16, WCMT06...

SPARE PARTS



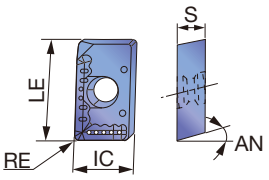
Designation	Clamping screw 1	Clamping screw 2	Lubricant	Wrench 1	Wrench 2
EVX08...	-	CSPB-2.2	M-1000	IP-7D	-
EVX10...	-	CSPB-2.5	M-1000	IP-8D	-
EVX12...	-	CSPD-3	M-1000	IP-10D	-
EVX16125R**U, EVX16032R...	CSPB-3.5	-	M-1000	IP-15D	-
EVX16050, 63R...	CSPB-3.5	CSTB-3.5D	M-1000	IP-15D	T-9D

Recommended clamping torque: CSPB-2.2 = 0.74 lbs·ft, 1 N·m, CSPB-2.5 = 0.96 lbs·ft, 1.3 N·m, CSPB-3.5 = 2.58 lbs·ft, 3.5 N·m, CSPD-3 = 1.84 lbs·ft, 2.5 N·m, CSTB-3.5D = 1.7 lbs·ft, 2.3 N·m

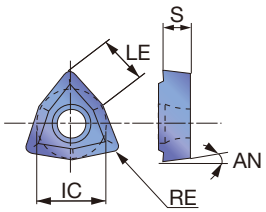
Reference pages: Inserts, Standard cutting conditions → H260

INSERT

XXMU-MJ



WCMT-D4



		AH3135	AH120	AH140
P	Steel	★	★	
M	Stainless	★		★
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys			
H	Hard materials	★		

★ : First choice
☆ : Second choice

Designation	RE	Coated AH3135	Coated AH120	Coated AH140	LE	IC	S	AN
XXMU08T204PR-MJ	0.016	●	●	●	0.323	0.220	0.109	10°
XXMU10H308PR-MJ	0.031	●	●	●	0.417	0.268	0.138	11°
XXMU12X408PR-MJ	0.031	●	●	●	0.520	0.311	0.165	11°
XXMU16X508PR-MJ	0.031	●	●	●	0.661	0.437	0.197	11°
WCMT050308-D4	0.031		●	●	0.213	0.313	0.125	7°
WCMT06T308-D4	0.031		●	●	0.256	0.375	0.156	7°

●: Line up

STANDARD CUTTING CONDITIONS

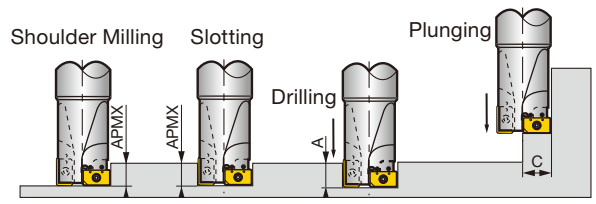
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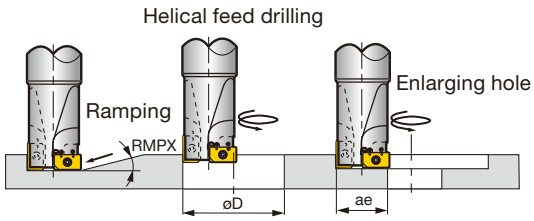
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EVX

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

APPLICATION RANGE





Inch	Tool dia. DC	Max. depth of cut APMX	Max. drilling depth A	Max. cutting width in plunging C	Max. ramping angle RMPX	Min. machining hole dia. øDmin	Max. machining hole dia. øDmax	Max. cutting width in enlarging hole ae
EVX08062RSU/RLHU	0.625	0.276	0.315	0.315	3°	0.756	1.250	0.551
EVX10020RSU/RLHU	0.750	0.354	0.394	0.394	3°	0.945	1.500	0.709
EVX12100RSU/RLHU	1.000	0.453	0.492	0.492	3°	1.250	1.890	0.906
EVX16125RSU/RLHU	1.250	0.591	0.630	0.630	3°	1.510	2.440	1.250

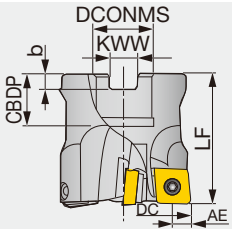
Z-FEEDMILL

TZP12

Plunge mill for roughing, with screw clamp system

GAMP = +26°, GAMF = -2°







Metric	DC	CICT	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZP12050R	50	3	22	20	50	6	10	0.38	APMT120416PR-MJ
TZP12050R-E	50	3	22	20	50	6.3	10.4	0.38	APMT120416PR-MJ
TZP12063R	63	3	22	20	50	6	10	0.72	APMT120416PR-MJ
TZP12063R-E	63	3	22	20	50	6.3	10.4	0.72	APMT120416PR-MJ
TZP12080R	80	4	31.75	32	63	8	12.7	1.51	APMT120416PR-MJ

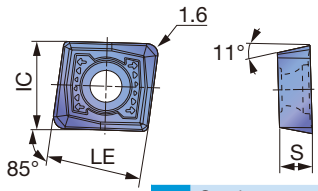
SPARE PARTS

Designation	Clamping screw	Lubricant	Shim screw	Shim	Wewnch1	Wewnch2
TZP12	CSTB-3.5T	M-1000	DTS5-3.5SS	ZSA1102	T-20D	P-3.5

Recommended clamping torque: 5 N·m

INSERT

APMT120416-MJ



P	Steel	☆	★		
M	Stainless				
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys				
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	AE	Coated			IC	LE	S
			AH120	T3130				
APMT120416PR-MJ	0.063	0.394	●	●		0.500	0.531	0.187

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog

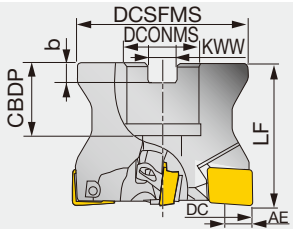
TZP12

TZP19

Plunge mill for roughing, with wedge clamp system

GAMP = +16°, GAMF = -2°





Metric	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZP19080R	80	4	76	31.75	32	63	8	12.7	1.32	APMR190616PR-MJ
TZP19100R	100	5	96	31.75	32	63	8	12.7	2.41	APMR190616PR-MJ
TZP19125R	125	6	98	38.1	38	63	10	15.9	3.17	APMR190616PR-MJ

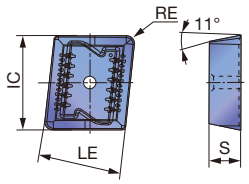
SPARE PARTS

Designation	Clamping screw	Adjusting screw	Shim	Wedge	Wewnch1	Wewnch 2
TZP19	CSTA-4	FDS-8ST	ZSA1502	WPP16R	T-15D	T-27T

Recommended clamping torque: 3.5 N·m

INSERT

APMR190616-MJ



P	Steel	☆	★	
M	Stainless			
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	AE	Coated AH120	Coated T3130	IC	LE	S
APMR190616PR-MJ	0.063	0.669	●	●	0.750	0.625	0.250

●: Line up

Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°

STANDARD CUTTING CONDITIONS

Please scan below.

e-catalog

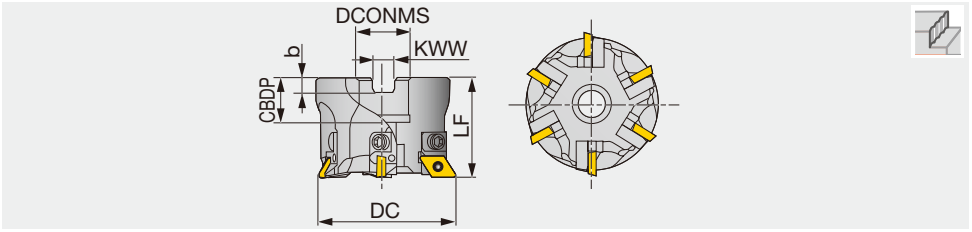
TZP19

TZF11

High precision plunge mill

GAMP = 0°, GAMF = -6°~ 0°





Metric	CICT	DC	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZF11050R	4	50	22	20	45	6	10	0.38	DPCW11T3ZFR
TZF11050R-E	4	50	22	20	45	6.3	10.4	0.38	DPCW11T3ZFR
TZF11063R	6	63	22	20	45	6	10	0.72	DPCW11T3ZFR
TZF11063R-E	6	63	22	20	45	6.3	10.4	0.72	DPCW11T3ZFR
TZF11080R	7	80	31.75	32	63	8	12.7	1.51	DPCW11T3ZFR

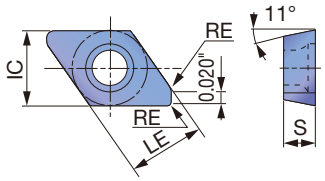
SPARE PARTS

Designation	Clamping screw	Cartridge	Lubricant	Cartridge fixing screw	Cartridge fixing screw	Shell locking bolt	Wewnch	Wewnch 1	Wewnch 2
TZF11050R*	CSTB-4S	SDUPR09CZ-11	M-1000	CM4X0.7X12	SSHM3-10	FSHM10-40	T-15D	P-1.5	P-3
TZF11063R*, TZF11080R	CSTB-4S	SDUPR09CZ-11	M-1000	CM4X0.7X12	SSHM3-10	-	T-15D	P-1.5	P-3

Recommended clamping torque：3.5 N·m

INSERT

DPCW11T3 (High precision ground insert for plunging)



P	Steel		☆		★	
M	Stainless					
K	Cast iron	★	☆			
N	Non-ferrous					
S	Superalloys					
H	Hard materials		☆			

★ : First choice
☆ : Second choice

Designation	RE	Coated		Cermet	LE	IC	S
		AH120	AH740	NS740			
DPCW11T3ZFR	0.039	●	●	●	0.375	0.375	0.156

●: Line up

STANDARD CUTTING CONDITIONS

Please scan below.

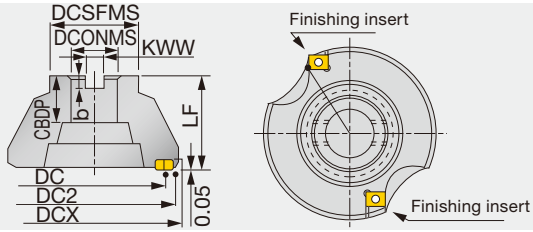
e-catalog

NMS09

High precision finishing face mill

GAMP = 10°, GAMF = -30°





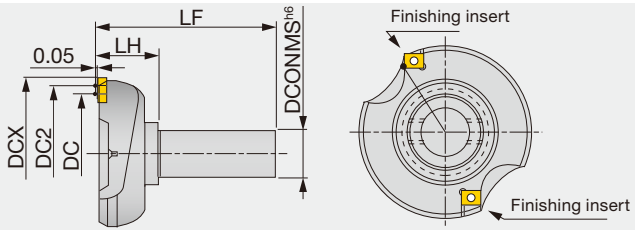
Metric	APMX	DC	CICT	DC2	DCX	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
NMS09080R	0.2	80	2	92	100.7	50	25.4	26	9.5	6	1.49	LNCQ0906...
NMS09100R	0.2	100	2	112	120.7	50	31.75	32	12.7	8	2.1	LNCQ0906...
NMS09125R	0.2	125	2	137	145.7	63	38.1	38	15.9	10	4.07	LNCQ0906...
NMS09160R	0.2	160	2	172	180.7	63	50.8	38	19	11	6.15	LNCQ0906...
NMS09200R	0.2	200	2	212	220.7	63	47.625	38	25.4	14	9.67	LNCQ0906...

EMS09

High precision finishing endmill, shank type

GAMP = +10°, GAMF = -30°





Metric	APMX	DC	CICT	DC2	DCX	DCONMS	LH	LF	Insert
EMS09080R	0.2	80	2	92	100.7	32	40	120	LNCQ0906...

Approach angle

7°-25°
41°-45°
60°-70°
85°-88°
90°

Others

SPARE PARTS




Designation	Clamping screw	Wedge
NMS09..., EMS09080R	CSTB-4	T-15D

Recommended clamping torque: 3.5 N·m

INSERT

LNCQ0906N-100(50)L

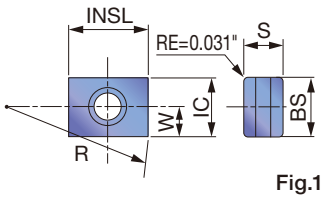


Fig.1

LNCQ0906-50S

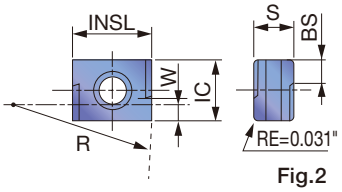


Fig.2

P	Steel	☆			★									
M	Stainless	★			★									
K	Cast iron	★	★											
N	Non-ferrous													
S	Superalloys													
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	APMX	Coated			Cermet										IC	INSL	S	R	W	BS	Fig.
		AH120	GH110		NS740																
LNCQ0906N-100L	0.008	●	●		●										0.375	0.500	0.250	3.937	0.188	0.311	1
LNCQ0906N-50L	0.008	●	●		●										0.375	0.500	0.250	1.969	0.188	0.311	1
LNCQ0906R-50S	0.008	●	●		●										-	0.500	0.250	1.969	0.091	0.157	2

●: Line up

STANDARD CUTTING CONDITIONS

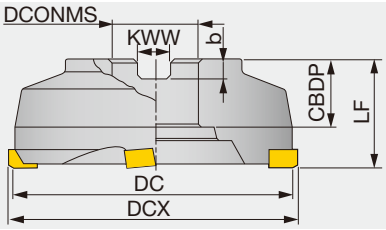
ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)	LNCQ0906N-100(50)L		LNCQ0906R-50S	
					Depth of cut APMX (in)	Feed per tooth *f* (ipr)	Depth of cut APMX (in)	Feed per tooth *f* (ipr)
P	Mild steels	< 180	NS740	656 - 984	< 0.008	0.079 - 0.236	≤ 0.008	0.039 - 0.098
	Carbon steels	< 300	NS740	492 - 820				
	Alloy steels	< 300	NS740	394 - 656				
	Die steels	< 300	NS740	328 - 492				
M	Stainless steels	< 250	AH120 NS740	492 - 722	< 0.008	0.079 - 0.236	≤ 0.008	0.039 - 0.098
K	Cast irons	150 - 250	GH110 AH120	394 - 656	< 0.008	0.079 - 0.236	≤ 0.008	0.039 - 0.098

MS

High precision finishing face mill

GAMP = -5°,GAMF = -30°





Right hand (R) shown.

Metric	APMX	DC	CICT	DCX	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
MS04R/L	0.1	100	2	105	55	31.75	32	12.7	8	3	SN**56...
MS05R/L	0.1	125	2	130	60	38.1	38	15.9	10	4	SN**56...
MS06R/L	0.1	150	4	155	60	50.8	38	19	11	5	SN**56...
MS08R/L	0.1	200	4	205	60	47.625	38	25.4	14	8.5	SN**56...
MS10R/L	0.1	250	4	255	60	47.625	38	25.4	14	14	SN**56...
MS12R/L	0.1	300	4	305	60	47.625	38	25.4	14	23	SN**56...

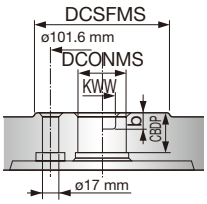
SPARE PARTS

Designation	Clamping screw	Locator	Pin	Locator fixing screw	Washer	Protector	Wrench
MS04R/L	CST-5	-	SP-8	-	-	PMS4R/L	T-25D
MS05R/L, MS06R/L	CST-5	-	SP-8	-	-	PMS5R/L	T-25D
MS08R/L - MS12R/L	CST-5	LMS56R/L	SP-8	CM6x25, CM6x16	VA6	PMS5R/L	T-25D

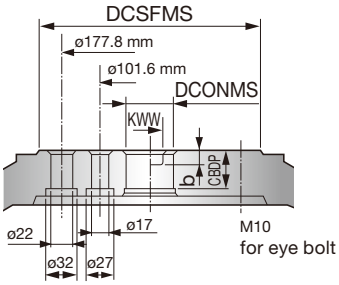
Recommended clamping torque: 3.5 N·m

Arbor type

MS08, 10R/L



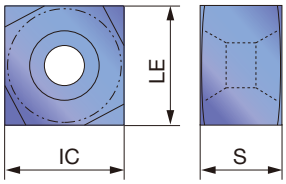
MS12R/L



Approach angle
7°-25°
41°-45°
60°-70°
85°-88°
90°
Others

INSERT

SNAA56FTR



P	Steel	★	
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	APMX	Cermet								LE	IC	S
		X407										
SNAA56FTR	0.004	●								0.309	0.625	0.375

●: Line up

STANDARD CUTTING CONDITIONS

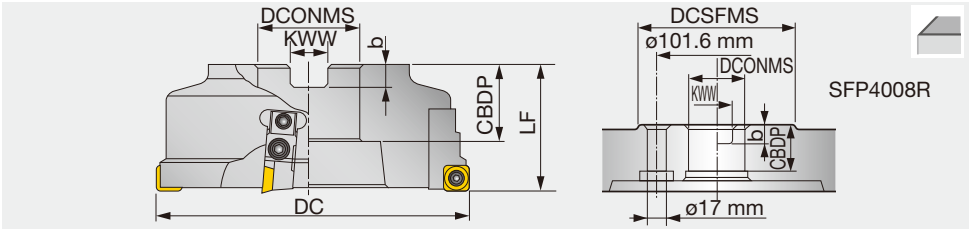
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Depth of cut APMX (in)
P	Mild steels	< 180 HB	X407	853 - 984	≤ 0.236	≤ 0.004
	Carbon steels	< 300 HB	X407	394 - 591	≤ 0.236	≤ 0.004
	Alloy steels	< 300 HB	X407	394 - 591	≤ 0.236	≤ 0.004
	Die steels	< 30 HRC	X407	394 - 591	≤ 0.236	≤ 0.004
H	Carbon steel	40 - 50 HRC	X407	492 - 656	≤ 0.118	≤ 0.002

SFP4000R

High precision finishing face mill, with adjustable structure

GAMP = +5°,GAMF = -20°

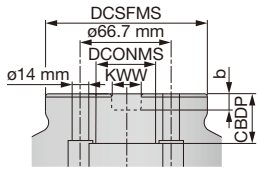




Metric	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
SFP4004R	0.1	100	2	63	31.75	32	12.7	8	2.3	SPHA435FNW
SFP4005R	0.1	125	2	63	38.1	38	15.9	10	3.5	SPHA435FNW
SFP4006R	0.1	160	4	63	50.8	38	19	11	5.8	SPHA435FNW
SFP4008R	0.1	200	4	63	47.625	38	25.4	14	9	SPHA435FNW
SFP4004R-E	0.1	100	2	63	32	32	14.4	8	2.3	SPHA435FNW
SFP4005R-E	0.1	125	2	63	40	32	16.4	9	3.5	SPHA435FNW
SFP4006R-E	0.1	160	4	63	40	29	16.4	9	5.8	SPHA435FNW

Arbor type

SFP4006R-E



SPARE PARTS

Designation	Clamping screw	Locator	Adjusting screw	Locator fixing screw1	Locator fixing screw2	Wedge	Wrench	Washer1	Washer2	Wrench
SFP40...	CSTA-5S	LW400R	FDS-8S	CM5X0.8X16	CM5X0.8X18	FW-305	T-15D	5S	L5	P-4

Recommended clamping torque: 3.5 N·m

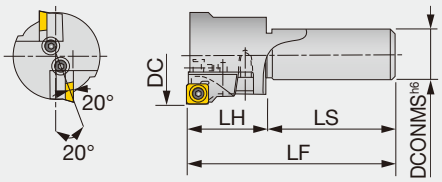
Reference pages: Inserts, Standard cutting conditions → H268

EFP4000R

High precision finishing endmill, shank type, with adjustable structure

GAMP = +5°, GAMF = -20°





Metric	APMX	DC	CICT	DCONMS	LS	LF	LH	Insert
EFP4050R	0.1	50	1	32	80	120	40	SPHA435FNW
EFP4063R	0.1	63	2	32	80	130	50	SPHA435FNW

Note: EFP4050R does not have the adjustable structure.

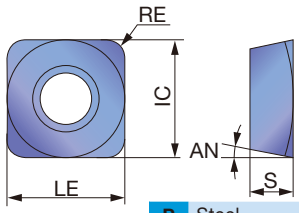
SPARE PARTS

Designation	Clamping screw	Locator	Adjusting screw	Locator fixing screw1	Locator fixing screw2	Wedge	Wrench	Washer1	Washer2	Wrench
EFP4050R	CSTA-5S	LW402R	-	CM5X0.8X16	-	-	T-15D	-	-	-
EFP4063R	CSTA-5S	LW400R	FDS-8S	CM5X0.8X16	CM5X0.8X18	FW-305	T-15D	5S	L5	P-4

Recommended clamping torque: 3.5 N·m

INSERT

SPHA435



Approach angle

		Cermet		Uncoated		
P	Steel	★				
M	Stainless	★				
K	Cast iron			★		
N	Non-ferrous			★		
S	Superalloys					
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	APMX	Cermet N308	Uncoated TH10	IC	LE	S	AN
SPHA435FNW	0.079	0.004	●	●	0.500	0.500	0.187	11°

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)	Feed per revolution: *f* (ipr) SFP	Feed per revolution: *f* (ipr) EFP	Depth of cut APMX (in)
P	Mild steels	< 180	N308	591 - 820	≤ 0.236	≤ 0.157	≤ 0.004
P	Carbon steels	< 300	N308	492 - 656	≤ 0.236	≤ 0.157	≤ 0.004
P	Alloy steels	< 300	N308	492 - 656	≤ 0.236	≤ 0.157	≤ 0.004
M	Stainless steels	< 250	N308	525 - 656	≤ 0.157	≤ 0.118	≤ 0.004
K	Cast irons	150 - 250	TH10	328 - 492	≤ 0.197	≤ 0.118	≤ 0.008
N	Non-ferrous metals	-	TH10	656 - 1640	≤ 0.236	≤ 0.157	≤ 0.004

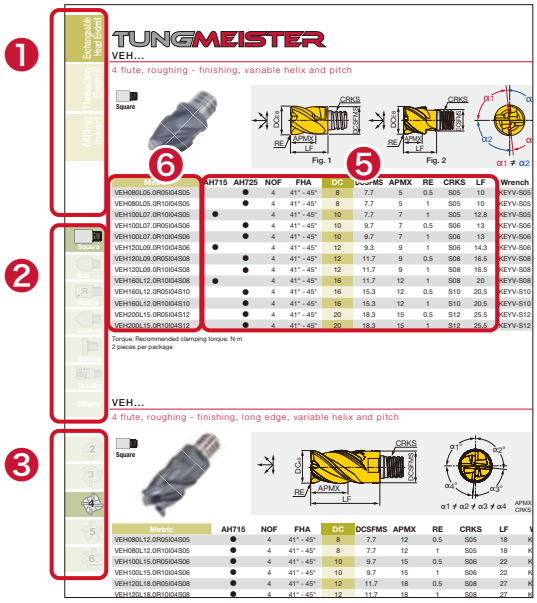
Under the above conditions, attainable surface roughness is 3 to 4 µm RzJIS for steel and 6 to 12 µm RzJIS for cast iron.

Endmill



EndMill - Content structure

- Products are listed by application.
- Endmills in the catalog are our standard items.



How to use the page

Method 1.

Select the tool type at the index on the right page, choose the application (❶), cutting edge shape (❷), and the number of cutting edges (❸), and check the designation you need (❻) in the dimension table (❺).

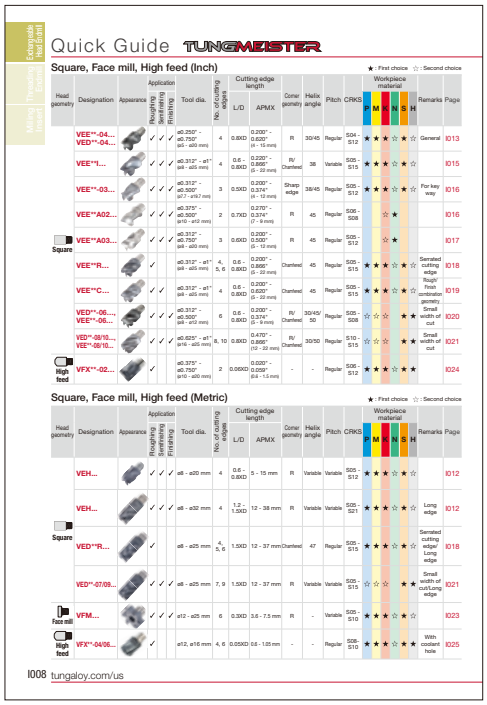
Method 2.

Select the tool series name on I004 – I005 and check the details on the product page.



Method 3.

Select the application and the cutting edge shape from Quick Guide on I008 - I011 , and see the details on each page.



Icon

Head geometry

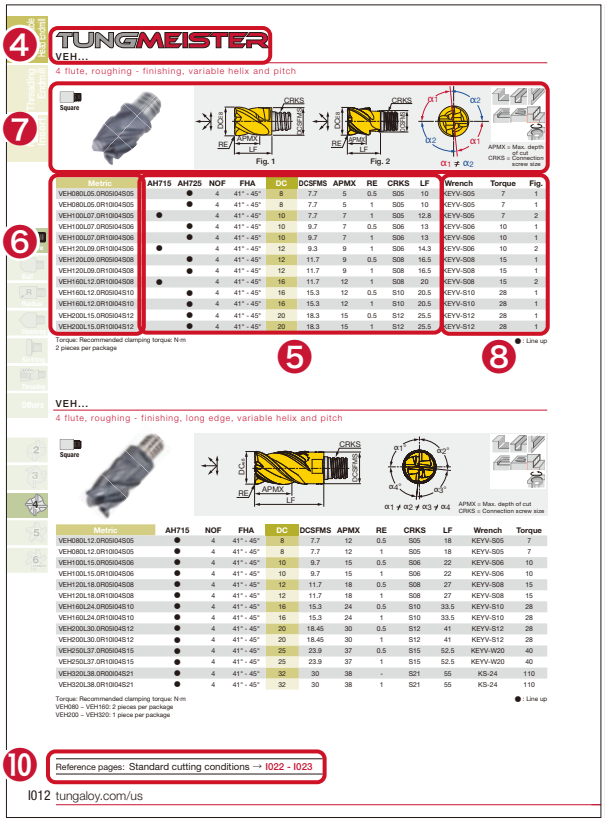
	Square
	Ball nose
R	Radius
	Chamfering
	Slotting
	Threading

No. of cutting edges

2	2
3	3
4	4
5	5
6 or more	6 or more

Application

Shoulder milling	Side slotting	Hole enlarging
Deep shoulder milling	Side milling	Holemaking
Shoulder milling (with radius)	Pocketing	Counterboring
Face milling	Ramping	Hole chamfering
Slotting	Profiling	Chamfering
Slotting (with radius)	Plunging	Cutting-off



4 TUNGMEISTER

VEH...

4 flute, roughing - finishing, variable helix and pitch

7

Square

Fig. 1 Fig. 2

APMX = Max. depth of cut
CRKS = Connection screw size

6

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque	Fig.
VEH080L05.0R05I04S05		●	4	41° - 45°	8	7.7	5	0.5	S05	10	KEYV-S05	7	1
VEH080L05.0R10I04S05		●	4	41° - 45°	8	7.7	5	1	S05	10	KEYV-S05	7	1
VEH100L07.0R10I04S05	●		4	41° - 45°	10	7.7	7	1	S05	12.8	KEYV-S05	7	2
VEH100L07.0R05I04S06		●	4	41° - 45°	10	9.7	7	0.5	S06	13	KEYV-S06	10	1
VEH100L07.0R10I04S06		●	4	41° - 45°	10	9.7	7	1	S06	13	KEYV-S06	10	1
VEH120L09.0R10I04S06	●		4	41° - 45°	12	9.3	9	1	S06	14.3	KEYV-S06	10	2
VEH120L09.0R05I04S08		●	4	41° - 45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15	1
VEH120L09.0R10I04S08		●	4	41° - 45°	12	11.7	9	1	S08	16.5	KEYV-S08	15	1
VEH160L12.0R10I04S08	●		4	41° - 45°	16	11.7	12	1	S08	20	KEYV-S08	15	2
VEH160L12.0R05I04S10		●	4	41° - 45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28	1
VEH160L12.0R10I04S10		●	4	41° - 45°	16	15.3	12	1	S10	20.5	KEYV-S10	28	1
VEH200L15.0R05I04S12		●	4	41° - 45°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28	1
VEH200L15.0R10I04S12		●	4	41° - 45°	20	18.3	15	1	S12	25.5	KEYV-S12	28	1

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

5 8

VEH...

4 flute, roughing - finishing, long edge, variable helix and pitch

Square

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VEH080L12.0R05I04S05	●	4	41° - 45°	8	7.7	12	0.5	S05	18	KEYV-S05	7
VEH080L12.0R10I04S05	●	4	41° - 45°	8	7.7	12	1	S05	18	KEYV-S05	7
VEH100L15.0R05I04S06	●	4	41° - 45°	10	9.7	15	0.5	S06	22	KEYV-S06	10
VEH100L15.0R10I04S06	●	4	41° - 45°	10	9.7	15	1	S06	22	KEYV-S06	10
VEH120L18.0R05I04S08	●	4	41° - 45°	12	11.7	18	0.5	S08	27	KEYV-S08	15
VEH120L18.0R10I04S08	●	4	41° - 45°	12	11.7	18	1	S08	27	KEYV-S08	15
VEH160L24.0R05I04S10	●	4	41° - 45°	16	15.3	24	0.5	S10	33.5	KEYV-S10	28
VEH160L24.0R10I04S10	●	4	41° - 45°	16	15.3	24	1	S10	33.5	KEYV-S10	28
VEH200L30.0R05I04S12	●	4	41° - 45°	20	18.45	30	0.5	S12	41	KEYV-S12	28
VEH200L30.0R10I04S12	●	4	41° - 45°	20	18.45	30	1	S12	41	KEYV-S12	28
VEH250L37.0R05I04S15	●	4	41° - 45°	25	23.9	37	0.5	S15	52.5	KEYV-W20	40
VEH250L37.0R10I04S15	●	4	41° - 45°	25	23.9	37	1	S15	52.5	KEYV-W20	40
VEH320L38.0R05I04S21	●	4	41° - 45°	32	30	38	-	S21	55	KS-24	110
VEH320L38.0R10I04S21	●	4	41° - 45°	32	30	38	1	S21	55	KS-24	110

Torque: Recommended clamping torque: N·m
VEH080 – VEH160: 2 pieces per package
VEH200 – VEH320: 1 piece per package

● : Line up

10 Reference pages: Standard cutting conditions → I022 - I023

I012 tungaloy.com/us

9 STANDARD CUTTING CONDITIONS

Shoulder milling

VEH, VEE: 3 flutes, VED / VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VED-R, VEE-C

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed per tooth: fz (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut ap (in)	Width of cut ae (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
P	Prehardened steel P45, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si ≤ 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC

VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes, VED: 7, 9 flutes

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed per tooth: fz (ipt) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut ap (in)	Width of cut ae (in)
S	Titanium alloys Ti-6Al-4V, etc.	-	200 - 400	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	100 - 200	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	260 - 530	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	130 - 300	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC

I022 tungaloy.com/us

❶ : Application
❷ : Cutting edge shape
❸ : Number of cutting edges
❹ : Endmill series name
❺ : Dimension table
❻ : Endmill designation
❼ : Dimension drawing (conforming to ISO13399)
❽ : Spare parts
❾ : Standard cutting conditions
❿ : Reference page

Coolant hole

Workpiece material

- P Steel
- M Stainless steel
- K Cast iron
- N Non-ferrous metal
- S Superalloy
- H Hard material

When ordering
- Please specify the designation and quantity for TungMeister heads.
  e.g. **VEE031L20C004-U06S05** ... 2 (two heads per package)
- Please specify the designation and quantity for TungMeister shanks.
  e.g. **VSS031L300S05UC** ... 1 (one shank per package)

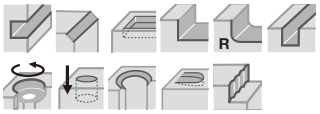
*Wrenches for TungMeister are sold separately.

Exchangeable Head Endmill



TUNGMEISTER

Endmills with exchangeable heads
for reduced tool change time
ø0.250" - ø1.000" (ø5 mm - ø32 mm)



I006 -

P M K N S H

Inch ✓ Metric ✓

Threading Endmill

		Inch	Metric
	**THREADMILLING**  I056 P M K N S H		✓
	**SOLIDTHREAD** I057 - Solid threading tool series for machining small diameters, such as M1x0.25 and 0-80UNF.		✓
	**TUNGMEISTER** I006 - Head-changeable milling tool for less down-time than solid tapping tools.	✓	✓
	**Indexable thread milling cutter** I074 - Many different types of inserts for various threading diameters and pitches, leading to the tool integration and reduced tool cost.		✓

TUNGMEISTER

Optimal tool combination for maximum productivity

Significantly reduced tool indexing time improves machining efficiency



1 Wide range of geometries

45 different types of geometries are available. The head indexing is easy and highly accurate with the precision thread.

2 Three kinds of shank material

Users can choose the most suitable combination according to the machining parameters, length and application required.

Steel: For general purpose
Carbide: For highly accurate machining due to excellent rigidity
Tungsten: Reduced chattering due to high vibration damping capacity


Straight shank & neck


Straight shank & taper neck


Straight shank & neck (carbide)


Straight (for slotting)


High rigidity shank


ER collet


Adaptor for TungFlex

No setup time

Machine downtime is decreased considerably. Simplified setup since only the head is indexed.

Increases productivity by 90%

Exchange time / Piece

TUNGMEISTER — less than 1 minute

Solid endmill — 10 minutes

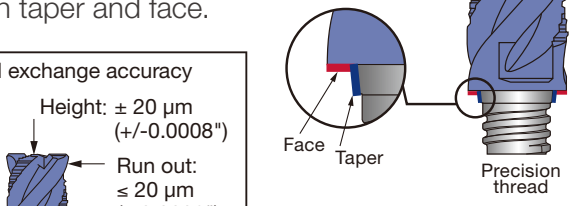
High accuracy and repeatability

Repeatability and accuracy are maintained due to full contact of both taper and face.

Head exchange accuracy

Height: ± 20 µm (+/-0.0008")

Run out: ≤ 20 µm (≤ 0.0008")



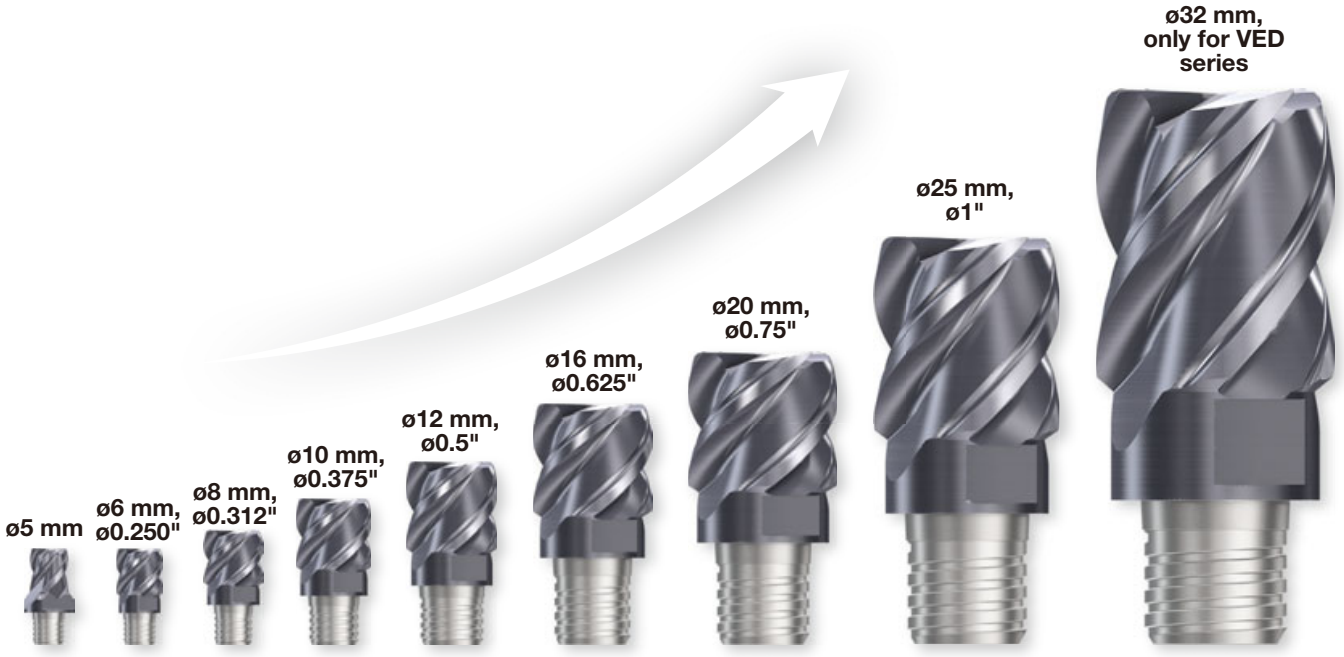
Reference pages: I012 - I055

Square

VEH, VEE, VED

Extensive tool diameter range from 5 to 32 mm, 0.250" to 1".

Covers a broad range of applications from precision machining to large size parts.



Threading

VMT



ISO metric
VMT***IS



Unified
VMT***UN



Whitworth
VMT***W

Thread milling heads

With multiple teeth
for ISO, Unified, and Whitworth threads

Threading

VTR



ISO metric
60° partial profile
VTR***IS



Whitworth
55° partial profile
VTR***W

Thread milling heads

With single tooth
for ISO and Whitworth threads

Quick Guide TUNGMEISTER

Square, Face mill, High feed (Inch)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Application: Roughing	Application: Semifinishing	Application: Finishing	Tool dia.	No. of cutting edges	Cutting edge length: L/D	Cutting edge length: APMX	Corner geometry	Helix angle	Pitch	CRKS	Workpiece material: P	M	K	N	S	H	Remarks	Page
Square	VEE**-04... VED**-04...		✓	✓	✓	ø0.250" - ø0.750" (ø5 - ø20 mm)	4	0.8XD	0.200" - 0.620" (4 - 15 mm)	R	30/45	Regular	S04 - S12	★	★	★	☆	★	☆	General	I013
	VEE**I...		✓	✓	✓	ø0.312" - ø1" (ø8 - ø25 mm)	4	0.6 - 0.8XD	0.220" - 0.866" (5 - 22 mm)	R/ Chamfered	38	Variable	S05 - S15	★	★	★	☆	★	☆		I015
	VEE**-03...		✓	✓	✓	ø0.312" - ø0.500" (ø7.7 - ø19.7 mm)	3	0.5XD	0.200" - 0.374" (4 - 12 mm)	Sharp edge	38/45	Regular	S05 - S12	★	★	★	☆	★	☆	For key way	I016
	VEE**A02...		✓	✓	✓	ø0.375" - ø0.500" (ø10 - ø12 mm)	2	0.7XD	0.270" - 0.374" (7 - 9 mm)	R	45	Regular	S06 - S08			☆	★				I016
	VEE**A03...		✓	✓	✓	ø0.312" - ø0.750" (ø8 - ø20 mm)	3	0.6XD	0.200" - 0.500" (5 - 12 mm)	R	45	Regular	S05 - S12			☆	★				I017
	VEE**R...		✓			ø0.312" - ø1" (ø8 - ø25 mm)	4, 5, 6	0.6 - 0.8XD	0.200" - 0.866" (5 - 22 mm)	Chamfered	45	Regular	S05 - S15	★	★	★	☆	★	☆	Serrated cutting edge	I018
	VEE**C...		✓	✓		ø0.312" - ø1" (ø8 - ø25 mm)	4	0.6 - 0.8XD	0.200" - 0.620" (5 - 22 mm)	Chamfered	45	Regular	S05 - S15	★	★	★	☆	★	☆	Rough/ Finish combination geometry	I019
	VED**-06..., VEE**-06...		✓	✓	✓	ø0.312" - ø0.500" (ø8 - ø12 mm)	6	0.6 - 0.8XD	0.200" - 0.374" (5 - 9 mm)	R/ Chamfered	30/45/ 50	Regular	S05 - S08	☆	☆	☆		★	★	Small width of cut	I020
	VED**-08/10..., VEE**-08/10...		✓	✓	✓	ø0.625" - ø1" (ø16 - ø25 mm)	8, 10	0.8XD	0.470" - 0.866" (12 - 22 mm)	R/ Chamfered	30/50	Regular	S10 - S15	☆	☆	☆		★	★	Small width of cut	I021
High feed	VFX**-02...		✓			ø0.375" - ø0.750" (ø10 - ø20 mm)	2	0.06XD	0.020" - 0.059" (0.6 - 1.5 mm)	-	-	Regular	S06 - S12	★	★	★	☆	★	★		I024

Square, Face mill, High feed (Metric)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Application: Roughing	Application: Semifinishing	Application: Finishing	Tool dia.	No. of cutting edges	Cutting edge length: L/D	Cutting edge length: APMX	Corner geometry	Helix angle	Pitch	CRKS	Workpiece material: P	M	K	N	S	H	Remarks	Page
Square	VEH...		✓	✓	✓	ø8 - ø20 mm	4	0.6 - 0.8XD	5 - 15 mm	R	Variable	Variable	S05 - S12	★	★	★	☆	★	☆		I012
	VEH...		✓	✓	✓	ø8 - ø32 mm	4	1.2 - 1.5XD	12 - 38 mm	R	Variable	Variable	S05 - S21	★	★	★	☆	★	☆	Long edge	I012
	VED**R...		✓			ø8 - ø25 mm	4, 5, 6	1.5XD	12 - 37 mm	Chamfered	47	Regular	S05 - S15	★	★	★	☆	★	☆	Serrated cutting edge/ Long edge	I018
	VED**-07/09...		✓	✓	✓	ø8 - ø25 mm	7, 9	1.5XD	12 - 37 mm	R	Variable	Variable	S05 - S15	☆	☆	☆		★	★	Small width of cut/Long edge	I021
Face mill	VFM...		✓	✓	✓	ø12 - ø25 mm	6	0.3XD	3.6 - 7.5 mm	R	-	Variable	S05 - S10	★	★	★	☆	★	☆		I023
High feed	VFX**-04/06...		✓			ø12, ø16 mm	4, 6	0.05XD	0.6 - 1.05 mm	-	-	Regular	S08-S10	★	★	★	☆	★	★	With coolant hole	I025

Profiling (ball, radius, barrel) (Inch)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Application: Roughing	Application: Semifinishing	Application: Finishing	Tool dia.	No. of cutting edges	Helix angle	Pitch	CRKS	Workpiece material: P	M	K	N	S	H	Remarks	Page
Ball	VBB**-BM...		✓	✓		ø0.312" - ø0.625" (ø8 - ø16 mm)	2	0	Regular	S05 - S10	★	★	★	☆	★	★	Economical type	I026
	VBB**-BG...				✓	ø0.312" - ø0.625" (ø8 - ø16 mm)	2	0	Regular	S05 - S10	★	★	★	☆	★	★	High accuracy h7	I026
	VBD**-BG...			✓	✓	ø0.312" - ø0.625" (ø8 - ø16 mm)	2	30	Regular	S05 - S10	★	★	★	☆	★	★	Low cutting force	I027
	VBD**-BG-04... VBE**-BG-04...		✓	✓	✓	ø0.250" - ø1" (ø5 - ø20 mm)	4	30/38	Regular	S04 - S15	★	★	★	☆	★	★	Low cutting force	I027
	VBB**-SG...		✓	✓	✓	ø0.375" - ø0.750" (ø10 - ø20 mm)	2	0	Regular	S05 - S10	★	★	★	☆	★	★	High accuracy h7/ Sphere cutting edge	I028
	VBE**-BGA...		✓	✓	✓	ø0.312" - ø0.750" (ø8 - ø20 mm)	2	45	Regular	S05 - S12			☆	★				I028
Radius	VRB**-02... VRC**-02...		✓	✓		ø0.625" - ø0.750" (ø10 - ø20 mm)	2	0/15	Regular	S06 - S12	★	★	★	☆	★	☆	Economical type	I030
	VRD**-06...			✓	✓	ø0.312" - ø0.625" (ø8 - ø16 mm)	6	30	Regular	S05 - S10	★	★	★	☆	★	☆		I030

Profiling (ball, radius, barrel) (Metric)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Application: Roughing	Application: Semifinishing	Application: Finishing	Tool dia.	No. of cutting edges	Helix angle	Pitch	CRKS	Workpiece material: P	M	K	N	S	H	Remarks	Page
Barrel	VBO...			✓	✓	ø8 - ø16 mm	4, 5	30	Regular	S05 - S10	★	★	★	☆	★	☆	Profiling/ Long edge	I032
	VBO...			✓	✓	ø10 - ø16 mm	4	30	Regular	S06 - S10	★	★	★	☆	★	☆	Profiling/ Short edge	I032
Bull nose	VBN...			✓	✓	ø10 - ø16 mm	6	35	Regular	S06 - S10	★	★	★	☆	★	☆	Profiling	I032
Lens	VBL...			✓	✓	ø8 - ø16 mm	6	30	Regular	S05 - S10	★	★	★	☆	★	☆	Profiling	I033

Quick Guide TUNGMEISTER

Inch

Multi-function (chamfering, spot drill, center hole, counterboring)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Center edge (Z-feed capability)	Tool dia.	No. of cutting edges	Chamfering angle	Helix angle	Pitch	CRKS	Workpiece material P	M	K	N	S	H	Remarks	Page
Chamfering	VCA**-04/06...		Without	ø0.375" (ø10 - ø20 mm)	4, 6	45	0	Regular	S06 - S12	★	★	★	☆	★	☆		I035
Counterboring	VGC**-02...		With	ø0.312" - ø0.625" (ø7.8 - ø16 mm)	2	-	10	Regular	S05 - S10	★	★	★	☆	★	☆	For counterboring	I039

Slotting (Inch)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Groove width	Tool dia.	No. of cutting edges	Edge shape	Helix angle	Pitch	CRKS	Workpiece material P	M	K	N	S	H	Remarks	Page
Slotting	VTB**-06...		0.056" - 0.312" (2 - 8 mm)	ø0.500" - ø1" (ø13.5 - ø25 mm)	6	R	0	Regular	S05 - S10	★	★	★	☆	★	☆		I042
	VTB**-C006...		0.062", 0.078" (2 mm)	ø0.500" (ø13.5 mm)	6	Chamfered	0	Regular	S05	★	★	★	☆	★	☆	With 45° chamfer	I043

Metric

Multi-function (chamfering, spot drill, center hole, counterboring)

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Center edge (Z-feed capability)	Tool dia.	No. of cutting edges	Chamfering angle	Helix angle	Pitch	CRKS	Workpiece material P	M	K	N	S	H	Remarks	Page
Chamfering	VCW**-02...		Without	ø11.8 mm	2	45	0	Regular	S06	★	★	★	☆	★	☆	Back chamfering capability	I035
	VCR**-02...		Without	ø8 - ø20 mm	2	R	0	Regular	S05 - S12	★	★	★	☆	★	☆		I035
Chamfering Spot drill	VCP**-02...		With	ø8 - ø16.5 mm	2	30/45/60	0	Regular	S05 - S10	★	★	★	☆	★	☆		I036
	VDS...		With	ø8 - ø16 mm	2	45	10	Regular	S05 - S10	★	★	★	☆	★	☆	Low cutting force	I037
Center hole	VDP**-02...		With	ø1.07 - ø6.46 mm	2	-	0	Regular	S04 - S12	★	★	★	☆	★	☆	For center hole	I038

Metric

Slotting (Metric)

★ : First choice ☆ : Second choice

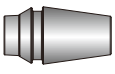
Head geometry	Designation	Appearance	Groove width	Tool dia.	No. of cutting edges	Edge shape	Helix angle	Pitch	CRKS	Workpiece material P	M	K	N	S	H	Remarks	Page
Slotting	VST**-3...		1.2 - 3.17 mm	ø15.7 - ø17.7 mm	3	R	0	Regular	S06	★	★	★	☆	★	☆		I040
	VST**-4/6...		0.76 - 10 mm	ø21.7 - ø27.7 mm	4, 6	R	0	Regular	S08, S10	★	★	★	☆	☆	☆		I041
	VST**A45...		3.4 - 5.5 mm	ø17.7 - ø21.7 mm	3, 4	Chamfered	0	Regular	S06, S08	★	★	★	☆	★	☆	For chamfering, 45° chamfer angle	I041

Threading

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Feature	Wiper edge	No. of cutting edges	Tool dia.	Internal/ External	Thread type	Min. thread size	CRKS	Workpiece material P	M	K	N	S	H	Page
Threading	VMT***IS		Full profile	With	3 - 6	ø10 - ø16 mm	Internal	ISO metric	M12X0.75	S05 - S08	★	★	★	☆	★	☆	I044
	VMT***UN		Full profile	With	3, 4, 5	ø10 - ø16 mm	Internal	Unified	9/16-24 UNEF	S05 - S08	★	★	★	☆	★	☆	I044
	VMT***W		Full profile	With	4	ø10, ø16 mm	Internal/ External	Whitworth	G1/4	S05, S08	★	★	★	☆	★	☆	I045
	VTR***IS		Partial profile	Without	3, 4	ø15.7 - ø21.7 mm	Internal/ External	60° partial profile	M20X0.5	S06, S08	★	★	★	☆	★	☆	I045
	VTR***W		Partial profile	Without	4	ø21.7 mm	Internal/ External	55° partial profile	G3/4	S08	★	★	★	☆	★	☆	I045

Shank

Shank	Neck	Appearance	Material Steel	Carbide	Carbide (with coolant hole)	Tungsten (with coolant hole)	Page
Straight	Straight		✓	✓	✓	✓	I048 - I050
Weldon	Straight		✓	-	-	-	I050
Straight	Taper		✓	✓	-	✓	I051, I052
High rigidity shank			✓	✓	-	-	I048
Straight (slotting)			✓	✓	✓	-	I053
Adaptor for TungFlex			✓	-	-	-	I053
ER collet			✓	-	-	-	I054

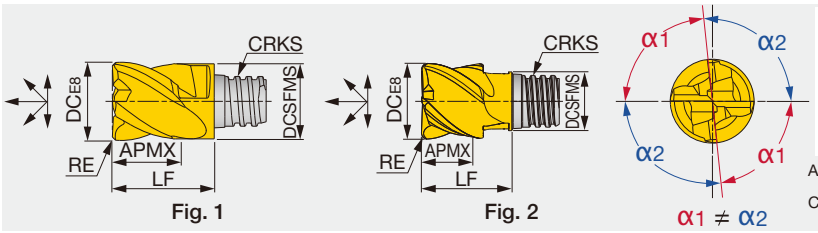
TUNGMEISTER

VEH...

4 flute, roughing - finishing, variable helix and pitch

Square





Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque	Fig.
VEH080L05.0R05I04S05		●	4	41° - 45°	8	7.7	5	0.5	S05	10	KEYV-S05	7	1
VEH080L05.0R10I04S05		●	4	41° - 45°	8	7.7	5	1	S05	10	KEYV-S05	7	1
VEH100L07.0R10I04S05	●		4	41° - 45°	10	7.7	7	1	S05	12.8	KEYV-S05	7	2
VEH100L07.0R05I04S06		●	4	41° - 45°	10	9.7	7	0.5	S06	13	KEYV-S06	10	1
VEH100L07.0R10I04S06		●	4	41° - 45°	10	9.7	7	1	S06	13	KEYV-S06	10	1
VEH120L09.0R10I04S06	●		4	41° - 45°	12	9.3	9	1	S06	14.3	KEYV-S06	10	2
VEH120L09.0R05I04S08		●	4	41° - 45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15	1
VEH120L09.0R10I04S08		●	4	41° - 45°	12	11.7	9	1	S08	16.5	KEYV-S08	15	1
VEH160L12.0R10I04S08	●		4	41° - 45°	16	11.7	12	1	S08	20	KEYV-S08	15	2
VEH160L12.0R05I04S10		●	4	41° - 45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28	1
VEH160L12.0R10I04S10		●	4	41° - 45°	16	15.3	12	1	S10	20.5	KEYV-S10	28	1
VEH200L15.0R05I04S12		●	4	41° - 45°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28	1
VEH200L15.0R10I04S12		●	4	41° - 45°	20	18.3	15	1	S12	25.5	KEYV-S12	28	1

Torque: Recommended clamping torque: N·m
2 pieces per package

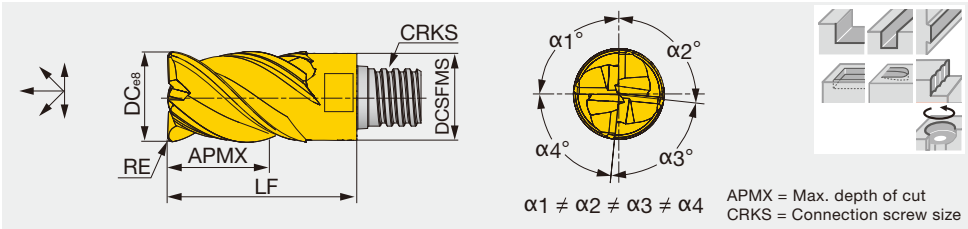
● : Line up

VEH...

4 flute, roughing - finishing, long edge, variable helix and pitch

Square





Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VEH080L12.0R05I04S05	●	4	41° - 45°	8	7.7	12	0.5	S05	18	KEYV-S05	7
VEH080L12.0R10I04S05	●	4	41° - 45°	8	7.7	12	1	S05	18	KEYV-S05	7
VEH100L15.0R05I04S06	●	4	41° - 45°	10	9.7	15	0.5	S06	22	KEYV-S06	10
VEH100L15.0R10I04S06	●	4	41° - 45°	10	9.7	15	1	S06	22	KEYV-S06	10
VEH120L18.0R05I04S08	●	4	41° - 45°	12	11.7	18	0.5	S08	27	KEYV-S08	15
VEH120L18.0R10I04S08	●	4	41° - 45°	12	11.7	18	1	S08	27	KEYV-S08	15
VEH160L24.0R05I04S10	●	4	41° - 45°	16	15.3	24	0.5	S10	33.5	KEYV-S10	28
VEH160L24.0R10I04S10	●	4	41° - 45°	16	15.3	24	1	S10	33.5	KEYV-S10	28
VEH200L30.0R05I04S12	●	4	41° - 45°	20	18.45	30	0.5	S12	41	KEYV-S12	28
VEH200L30.0R10I04S12	●	4	41° - 45°	20	18.45	30	1	S12	41	KEYV-S12	28
VEH250L37.0R05I04S15	●	4	41° - 45°	25	23.9	37	0.5	S15	52.5	KEYV-W20	40
VEH250L37.0R10I04S15	●	4	41° - 45°	25	23.9	37	1	S15	52.5	KEYV-W20	40
VEH320L38.0R00I04S21	●	4	41° - 45°	32	30	38	-	S21	55	KS-24	110
VEH320L38.0R10I04S21	●	4	41° - 45°	32	30	38	1	S21	55	KS-24	110

Torque: Recommended clamping torque: N·m
VEH080 ~ VEH160: 2 pieces per package
VEH200 ~ VEH320: 1 piece per package

● : Line up

Reference pages: Standard cutting conditions → I022 - I023

VEE**-04..., VED**-04...

4 flute, roughing - finishing, general

Square



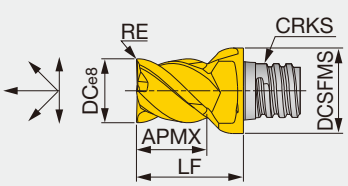


Fig. 1**

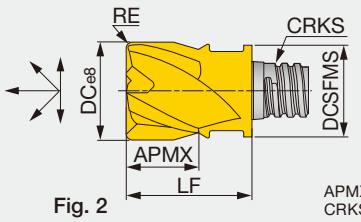
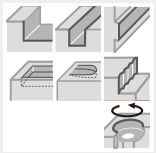


Fig. 2



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque	Fig.
VEE025L20R000-U04S05	●	4	45°	0.250	0.300	0.200	-	S05	0.390	KEYV-S05	5.16	1
VED031L20R015-U04S05	●	4	30°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16	2
VED031L20R031-U04S05	●	4	30°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16	2
VED031L20R062-U04S05	●	4	30°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16	2
VEE031L20R000-U04S05	●	4	45°	0.312	0.300	0.200	-	S05	0.390	KEYV-S05	5.16	2
VEE031L20R015-U04S05	●	4	45°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16	2
VEE031L20R031-U04S05	●	4	45°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16	2
VEE031L20R062-U04S05	●	4	45°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16	2
VED037L27R015-U04S06	●	4	30°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38	2
VED037L27R031-U04S06	●	4	30°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38	2
VEE037L27R000-U04S06	●	4	45°	0.375	0.370	0.275	-	S06	0.512	KEYV-S06	7.38	2
VEE037L27R015-U04S06	●	4	45°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38	2
VEE037L27R030-U04S06	●	4	45°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38	2
VEE037L27R062-U04S06	●	4	45°	0.375	0.370	0.275	0.062	S06	0.512	KEYV-S06	7.38	2
VEE037L47R000-U04S06	●	4	45°	0.375	0.370	0.470	-	S06	0.748	KEYV-S06	7.38	2
VED050L37R015-U04S08	●	4	30°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06	2
VED050L37R031-U04S08	●	4	30°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06	2
VEE050L37R000-U04S08	●	4	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06	2
VEE050L37R015-U04S08	●	4	45°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06	2
VEE050L37R031-U04S08	●	4	45°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06	2
VEE050L37R062-U04S08	●	4	45°	0.500	0.488	0.374	0.062	S08	0.650	KEYV-S08	11.06	2
VED062L47R015-U04S10	●	4	30°	0.625	0.600	0.470	0.015	S10	0.810	KEYV-S10	20.65	2
VED062L47R031-U04S10	●	4	30°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65	2
VED062L47R062-U04S10	●	4	30°	0.625	0.600	0.470	0.062	S10	0.810	KEYV-S10	20.65	2
VEE062L47R000-U04S10	●	4	45°	0.625	0.600	0.470	-	S10	0.810	KEYV-S10	20.65	2
VEE062L47R031-U04S10	●	4	45°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65	2
VED075L62R015-U04S12	●	4	30°	0.750	0.720	0.620	0.015	S12	1.000	KEYV-S12	20.65	2
VED075L62R031-U04S12	●	4	30°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65	2
VED075L62R062-U04S12	●	4	30°	0.750	0.720	0.620	0.062	S12	1.000	KEYV-S12	20.65	2
VEE075L62R000-U04S12	●	4	45°	0.750	0.720	0.620	-	S12	1.000	KEYV-S12	20.65	2
VEE075L62R031-U04S12	●	4	45°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65	2

Torque: Recommended clamping torque: lbs·ft

● : Line up

**Fig. 1: Avoid interference with workpiece when using this cutting head. The shank diameter is larger than the cutter diameter when assembled.

2 pieces per package

Reference pages: Standard cutting conditions → I022 - I023

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque	Fig.
VEE050L04.0R05-04S04		●	4	45°	5	6	4	0.5	S04	8.5	KEYV-S05	4	1
VEE060L04.0R05-04S04		●	4	45°	6	5.8	4	0.5	S04	8.5	KEYV-S05	4	2
VEE060L05.0R00-04S05	●	●	4	45°	6	8	5	-	S05	10	KEYV-S05	7	1
VEE080L05.0R00-04S05		●	4	45°	8	7.7	5	-	S05	10	KEYV-S05	7	2
VED080L05.0R05-04S05		●	4	30°	8	7.7	5	0.5	S05	10	KEYV-S05	7	2
VED080L05.0R10-04S05		●	4	30°	8	7.7	5	1	S05	10	KEYV-S05	7	2
VED080L05.0R15-04S05		●	4	30°	8	7.7	5	1.5	S05	10	KEYV-S05	7	2
VEE100L07.0R00-04S06		●	4	45°	10	9.7	7	-	S06	13	KEYV-S06	10	2
VED100L07.0R05-04S06		●	4	30°	10	9.7	7	0.5	S06	13	KEYV-S06	10	2
VEE100L07.0R05-04S06		●	4	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10	2
VED100L07.0R10-04S06		●	4	30°	10	9.7	7	1	S06	13	KEYV-S06	10	2
VEE100L07.0R10-04S06		●	4	45°	10	9.7	7	1	S06	13	KEYV-S06	10	2
VEE120L09.0R00-04S08	●	●	4	45°	12	11.7	9	-	S08	16.5	KEYV-S08	15	2
VED120L09.0R05-04S08		●	4	30°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15	2
VEE120L09.0R05-04S08		●	4	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15	2
VED120L09.0R10-04S08	●	●	4	30°	12	11.7	9	1	S08	16.5	KEYV-S08	15	2
VEE120L09.0R10-04S08		●	4	45°	12	11.7	9	1	S08	16.5	KEYV-S08	15	2
VEE160L12.0R00-04S10	●	●	4	45°	16	15.3	12	-	S10	20.5	KEYV-S10	28	2
VED160L12.0R05-04S10	●	●	4	30°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28	2
VEE160L12.0R05-04S10		●	4	45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28	2
VED160L12.0R10-04S10		●	4	30°	16	15.3	12	1	S10	20.5	KEYV-S10	28	2
VEE160L12.0R10-04S10		●	4	45°	16	15.3	12	1	S10	20.5	KEYV-S10	28	2
VED160L12.0R15-04S10		●	4	30°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28	2
VEE160L12.0R15-04S10		●	4	45°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28	2
VED160L12.0R20-04S10		●	4	30°	16	15.3	12	2	S10	20.5	KEYV-S10	28	2
VEE160L12.0R20-04S10		●	4	45°	16	15.3	12	2	S10	20.5	KEYV-S10	28	2
VED160L12.0R30-04S10		●	4	30°	16	15.3	12	3	S10	20.5	KEYV-S10	28	2
VEE160L12.0R30-04S10	●	●	4	45°	16	15.3	12	3	S10	20.5	KEYV-S10	28	2
VED160L12.0R40-04S10		●	4	30°	16	15.3	12	4	S10	20.5	KEYV-S10	28	2
VEE160L12.0R40-04S10		●	4	45°	16	15.3	12	4	S10	20.5	KEYV-S10	28	2
VEE200L15.0R00-04S12		●	4	45°	20	18.3	15	-	S12	25.5	KEYV-S12	28	2
VED200L15.0R05-04S12		●	4	30°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28	2
VED200L15.0R10-04S12	●	●	4	30°	20	18.3	15	1	S12	25.5	KEYV-S12	28	2
VED200L15.0R20-04S12		●	4	30°	20	18.3	15	2	S12	25.5	KEYV-S12	28	2
VED200L15.0R30-04S12		●	4	30°	20	18.3	15	3	S12	25.5	KEYV-S12	28	2

Torque: Recommended clamping torque: N·m
**Fig. 1: Avoid interference with workpiece when using this cutting head. The shank diameter is larger than the cutter diameter when assembled.
2 pieces per package

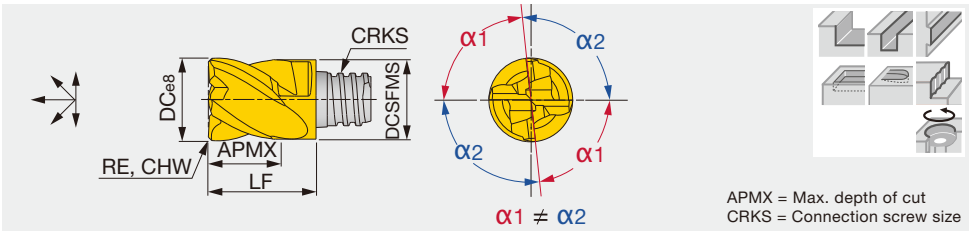
● : Line up

Reference pages: Standard cutting conditions → I022 - I023

VEE**-I...

4 flute, roughing - finishing, variable pitch





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque
VEE031L22C012IU04S05	●	4	38°	0.312	0.303	0.220	-	0.012	S05	0.393	KEYV-S05	5.16
VEE037L29C016IU04S06	●	4	38°	0.375	0.370	0.299	-	0.016	S06	0.512	KEYV-S06	7.38
VEE050L37C020IU04S08	●	4	38°	0.500	0.488	0.374	-	0.020	S08	0.650	KEYV-S08	11.06
VEE062L50C024IU04S10	●	4	38°	0.625	0.602	0.500	-	0.024	S10	0.810	KEYV-S10	20.65
VEE075L62C024IU04S12	●	4	38°	0.750	0.726	0.629	-	0.024	S12	1.004	KEYV-S12	20.65
VEE100L86C024IU04S15	●	4	38°	1.000	0.940	0.863	-	0.024	S15	1.456	KEYV-W20	29.5
VEE100L86R000IU04S15	●	4	38°	1.000	0.941	0.866	-	-	S15	1.457	KEYV-W20	29.5
VEE100L86R015IU04S15	●	4	38°	1.000	0.941	0.866	0.015	-	S15	1.457	KEYV-W20	29.5
VEE100L86R031IU04S15	●	4	38°	1.000	0.941	0.866	0.031	-	S15	1.457	KEYV-W20	29.5
VEE100L86R062IU04S15	●	4	38°	1.000	0.941	0.866	0.062	-	S15	1.457	KEYV-W20	29.5
VEE100L86R125IU04S15	●	4	38°	1.000	0.941	0.866	0.125	-	S15	1.457	KEYV-W20	29.5

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30I04S05		●	4	38°	8	7.7	5	-	0.3	S05	10	KEYV-S05	7
VEE100L07.0C40I04S06		●	4	38°	10	9.7	7	-	0.4	S06	13	KEYV-S06	10
VEE120L09.0C50I04S08		●	4	38°	12	11.7	9	-	0.5	S08	16.5	KEYV-S08	15
VEE160L12.0C60I04S10	●	●	4	38°	16	15.3	12	-	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60I04S12		●	4	38°	20	18.3	15	-	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60I04S15		●	4	38°	25	23.9	22	-	0.6	S15	37	KEYV-W20	40
VEE250L22.0R00I04S15		●	4	38°	25	23.9	22	-	-	S15	37	KEYV-W20	40
VEE250L22.0R05I04S15	●	●	4	38°	25	23.9	22	0.5	-	S15	37	KEYV-W20	40
VEE250L22.0R10I04S15		●	4	38°	25	23.9	22	1	-	S15	37	KEYV-W20	40
VEE250L22.0R20I04S15		●	4	38°	25	23.9	22	2	-	S15	37	KEYV-W20	40
VEE250L22.0R30I04S15		●	4	38°	25	23.9	22	3	-	S15	37	KEYV-W20	40

Torque: Recommended clamping torque: lbs·ft (*N·m)
VEE031 ~ VEE100 / VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

● : Line up

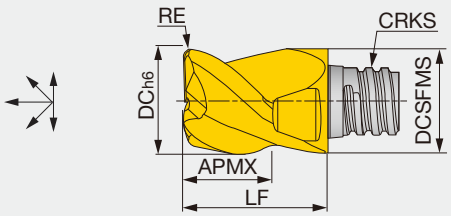
Reference pages: Standard cutting conditions → I022 - I023

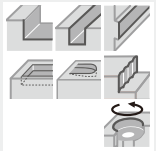
TUNGMEISTER

VEE**-03...

3 flute, roughing - finishing, general, for key way







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VEE031L20R000-U03S05	●	3	45°	0.312	0.300	0.200	-	S05	0.390	KEYV-S05	5.16
VEE037L27R000-U03S06	●	3	45°	0.375	0.370	0.275	-	S06	0.512	KEYV-S06	7.38
VEE050L37R000-U03S08	●	3	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05		●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE080L05.0R00-03S05		●	3	45°	8	7.7	5	-	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06		●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE100L07.0R00-03S06		●	3	45°	10	9.7	7	-	S06	13	KEYV-S06	10
VEE117L07.0R03-03S08	●	●	3	38°	11.7	11.7	7	0.3	S08	16.5	KEYV-S08	15
VEE120L09.0R00-03S08		●	3	45°	12	11.7	9	-	S08	16.5	KEYV-S08	15
VEE157L08.0R03-03S10	●	●	3	38°	15.7	15.3	8	0.3	S10	20.5	KEYV-S10	28
VEE197L12.0R04-03S12		●	3	38°	19.7	18.3	12	0.4	S12	25.5	KEYV-S12	28

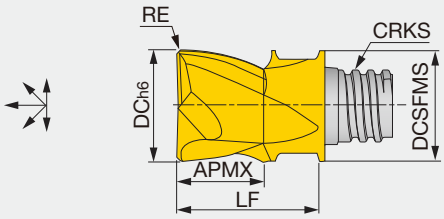
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

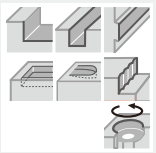
● : Line up

VEE**A02...

2 flute, roughing - finishing, for non-ferrous metal, general







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VEE037L27R000AU02S06	●	2	45°	0.375	0.360	0.270	-	S06	0.510	KEYV-S06	7.38
VEE037L27R020AU02S06	●	2	45°	0.375	0.360	0.270	0.02	S06	0.512	KEYV-S06	7.38
VEE050L37R000AU02S08	●	2	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06
VEE050L37R020AU02S08	●	2	45°	0.500	0.488	0.374	0.02	S08	0.650	KEYV-S08	11.06

Metric	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE100L07.0R05A02S06	●	2	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEE100L07.0R10A02S06	●	2	45°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE120L09.0R05A02S08	●	2	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

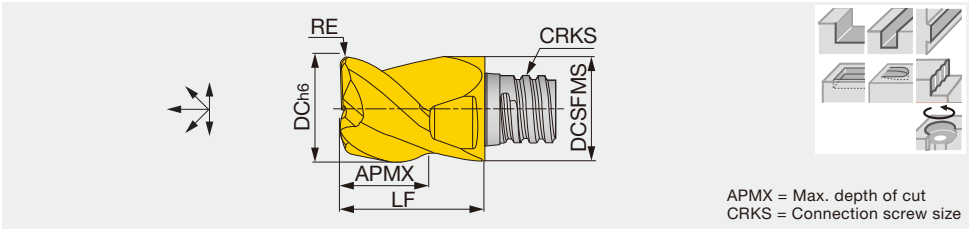
● : Line up

Reference pages: Standard cutting conditions → I022 - I023

VEE**A03...

3 flute, roughing - finishing, for non-ferrous metal, general





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VEE031L20R020AU03S05	●	3	45°	0.312	0.300	0.200	0.020	S05	0.390	KEYV-S05	5.16
VEE037L23R031AU03S06	●	3	45°	0.375	0.360	0.230	0.031	S06	0.510	KEYV-S06	7.38
VEE037L23R062AU03S06	●	3	45°	0.375	0.360	0.230	0.062	S06	0.510	KEYV-S06	7.38
VEE050L31R031AU03S08	●	3	45°	0.500	0.488	0.315	0.031	S08	0.650	KEYV-S08	11.06
VEE050L31R062AU03S08	●	3	45°	0.500	0.488	0.315	0.062	S08	0.650	KEYV-S08	11.06
VEE050L31R094AU03S08	●	3	45°	0.500	0.488	0.315	0.094	S08	0.650	KEYV-S08	11.06
VEE050L31R125AU03S08	●	3	45°	0.500	0.488	0.315	0.125	S08	0.650	KEYV-S08	11.06
VEE062L39R000AU03S10	●	3	45°	0.625	0.600	0.390	-	S10	0.810	KEYV-S10	20.65
VEE062L39R031AU03S10	●	3	45°	0.625	0.600	0.390	0.031	S10	0.810	KEYV-S10	20.65
VEE062L39R062AU03S10	●	3	45°	0.625	0.600	0.390	0.062	S10	0.810	KEYV-S10	20.65
VEE062L39R094AU03S10	●	3	45°	0.625	0.600	0.390	0.094	S10	0.810	KEYV-S10	20.65
VEE062L39R125AU03S10	●	3	45°	0.625	0.600	0.390	0.125	S10	0.810	KEYV-S10	20.65
VEE075L47R062AU03S12	●	3	45°	0.750	0.720	0.470	0.062	S12	1.000	KEYV-S12	20.65
VEE075L47R094AU03S12	●	3	45°	0.750	0.720	0.470	0.094	S12	1.000	KEYV-S12	20.65
VEE075L47R125AU03S12	●	3	45°	0.750	0.720	0.470	0.125	S12	1.000	KEYV-S12	20.65
VEE075L50R008AU03S12	●	3	45°	0.750	0.720	0.500	0.008	S12	1.000	KEYV-S12	20.65
VEE075L50R020AU03S12	●	3	45°	0.750	0.720	0.500	0.020	S12	1.000	KEYV-S12	20.65

Metric	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE080L05.0R05A03S05	●	3	45°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEE100L06.0R05A03S06	●	3	45°	10	9.7	6	0.5	S06	13	KEYV-S06	10
VEE100L06.0R10A03S06	●	3	45°	10	9.7	6	1	S06	13	KEYV-S06	10
VEE120L08.0R05A03S08	●	3	45°	12	11.7	8	0.5	S08	16.5	KEYV-S08	15
VEE120L08.0R10A03S08	●	3	45°	12	11.7	8	1	S08	16.5	KEYV-S08	15
VEE160L10.0R00A03S10	●	3	45°	16	15.3	10	-	S10	20.5	KEYV-S10	28
VEE160L10.0R10A03S10	●	3	45°	16	15.3	10	1	S10	20.5	KEYV-S10	28
VEE160L10.0R20A03S10	●	3	45°	16	15.3	10	2	S10	20.5	KEYV-S10	28
VEE200L12.0R05A03S12	●	3	45°	20	18.3	12	0.5	S12	25.5	KEYV-S12	28
VEE200L12.0R10A03S12	●	3	45°	20	18.3	12	1	S12	25.5	KEYV-S12	28
VEE200L12.0R20A03S12	●	3	45°	20	18.3	12	2	S12	25.5	KEYV-S12	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I022 - I023

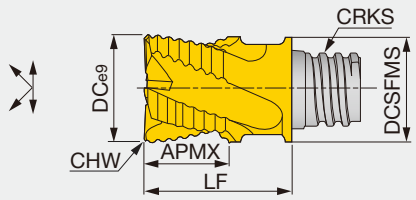
TUNGMEISTER

VEE**R...

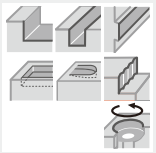
4, 5, 6 flute, roughing, serrated cutting edge

Square









APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque
VEE031L20C012RU04S05	●	4	45°	0.312	0.300	0.200	0.012	S05	0.390	-	KEYV-S05	5.16
VEE037L27C012RU04S06	●	4	45°	0.375	0.360	0.270	0.012	S06	0.512	-	KEYV-S06	7.38
VEE050L37C016RU04S08	●	4	45°	0.500	0.488	0.374	0.016	S08	0.650	-	KEYV-S08	11.06
VEE062L47C024RU05S10	●	5	45°	0.625	0.600	0.470	0.024	S10	0.800	-	KEYV-S10	20.65
VEE075L59C024RU06S12	●	6	45°	0.750	0.720	0.590	0.024	S12	1.000	3°	KEYV-S12	20.65
VEE100L86C020RU06S15	●	6	45°	1.000	0.941	0.866	0.020	S15	1.457	3°	KEYV-W15	29.50

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VEE080L05.0C25R04S05	●	●	4	45°	8	7.7	5	0.25	S05	10	5°	KEYV-S05	7
VEE100L07.0C30R04S06	●	●	4	45°	10	9.7	7	0.3	S06	13	5°	KEYV-S06	10
VEE120L09.0C35R04S08	●	●	4	45°	12	11.7	9	0.35	S08	16.5	5°	KEYV-S08	15
VEE160L12.0C40R05S10	●	●	5	45°	16	15.3	12	0.4	S10	20.5	5°	KEYV-S10	28
VEE200L15.0C40R06S12		●	6	45°	20	18.3	15	0.4	S12	25.5	3°	KEYV-S12	28
VEE250L22.0C50R06S15		●	6	45°	25	23.9	22	0.5	S15	37	3°	KEYV-W20	40

Torque: Recommended clamping torque: lbs·ft (*N·m)
VEE031 ~ VEE075 / VEE080 ~ VEE200: 2 pieces per package
VEE100 / VEE250: 1 piece per package

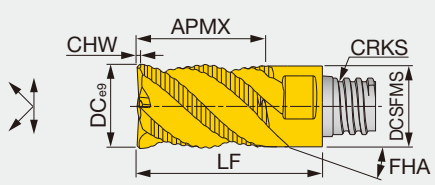
● : Line up

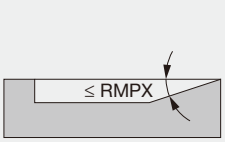
VED**R...

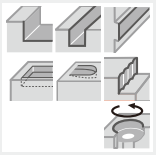
4, 5, 6 flute, roughing, long cutting edge, serrated cutting edge

Square









APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque
VED080L12.0C25R04S05	●	4	47°	8	7.7	12	0.25	S05	18	5°	KEYV-S05	7
VED100L15.0C30R04S06	●	4	47°	10	9.6	15	0.3	S06	22	5°	KEYV-S06	10
VED120L18.0C35R04S08	●	4	47°	12	11.7	18	0.35	S08	27	5°	KEYV-S08	15
VED160L24.0C40R05S10	●	5	47°	16	15.3	24	0.4	S10	33.5	5°	KEYV-S10	28
VED200L30.0C40R06S12	●	6	47°	20	18.45	30	0.4	S12	41	3°	KEYV-S12	28
VED250L37.0C50I06S15	●	6	47°	25	23.9	37	0.5	S15	52.5	3°	KEYV-W20	40

Torque: Recommended clamping torque: N·m
VED080 ~ VED160: 2 pieces per package
VED200, VED250: 1 piece per package

● : Line up

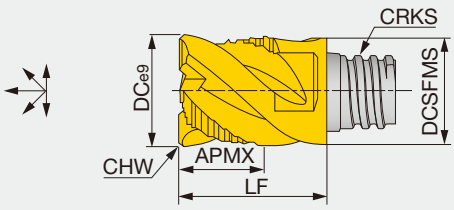
Reference pages: Standard cutting conditions → I022 - I023

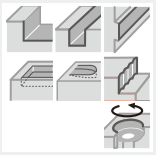
VEE**C...

4 flute, roughing - semi finishing, roughing and finishing edge combination

Square







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	Wrench	Torque
VEE031L20C012CU04S05	●	4	45°	0.312	0.300	0.200	0.012	S05	0.390	KEYV-S05	5.16
VEE037L27C012CU04S06	●	4	45°	0.375	0.360	0.275	0.012	S06	0.510	KEYV-S06	7.38
VEE050L36C016CU04S08	●	4	45°	0.500	0.488	0.369	0.016	S08	0.650	KEYV-S08	11.06
VEE062L47C024CU04S10	●	4	45°	0.625	0.600	0.470	0.024	S10	0.800	KEYV-S10	20.65
VEE075L62C024CU04S12	●	4	45°	0.750	0.720	0.620	0.024	S12	1.000	KEYV-S12	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30C04S05	●	4	45°	8	7.7	5	0.3	S05	10	KEYV-S05	7
VEE100L07.0C30C04S06	●	4	45°	10	9.7	7	0.3	S06	13	KEYV-S06	10
VEE120L09.0C40C04S08	●	4	45°	12	11.7	9	0.4	S08	16.5	KEYV-S08	15
VEE160L12.0C60C04S10	●	4	45°	16	15.3	12	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60C04S12	●	4	45°	20	18.3	15	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60C04S15	●	4	45°	25	23.9	22	0.6	S15	37	KEYV-W20	40

Torque: Recommended clamping torque: lbs·ft (*N·m)
VEE031 ~ VEE075 / VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

● : Line up

Reference pages: Standard cutting conditions → I022 - I023

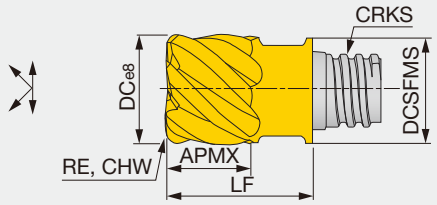
TUNGMEISTER

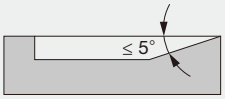
VED**-06..., VEE**-06...

6 flute, roughing - finishing, small width of cut

Square







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque
VED031L20R015-U06S05	●		6	30°	0.312	0.300	0.200	0.015	-	S05	0.390	KEYV-S05	5.16
VEE031L20R000-U06S05	●		6	45°	0.312	0.300	0.200	-	-	S05	0.390	KEYV-S05	5.16
VEE031L20R031-U06S05	●		6	45°	0.312	0.300	0.200	0.031	-	S05	0.390	KEYV-S05	5.16
VEE031L20C004-U06S05		●	6	50°	0.312	0.300	0.200	-	0.004	S05	0.390	KEYV-S05	5.16
VED037L27R015-U06S06	●		6	30°	0.375	0.370	0.275	0.015	-	S06	0.512	KEYV-S06	7.38
VED037L27R031-U06S06	●		6	30°	0.375	0.370	0.275	0.031	-	S06	0.512	KEYV-S06	7.38
VEE037L27R000-U06S06	●		6	45°	0.375	0.370	0.275	-	-	S06	0.512	KEYV-S06	7.38
VEE037L27R015-U06S06	●		6	45°	0.375	0.370	0.275	0.015	-	S06	0.512	KEYV-S06	7.38
VEE037L27R031-U06S06	●		6	45°	0.375	0.370	0.275	0.031	-	S06	0.512	KEYV-S06	7.38
VEE037L27R062-U06S06	●		6	45°	0.375	0.370	0.275	0.062	-	S06	0.512	KEYV-S06	7.38
VEE037L27C004-U06S06		●	6	50°	0.375	0.370	0.270	-	0.004	S06	0.510	KEYV-S06	7.38
VED050L37R015-U06S08	●		6	30°	0.500	0.488	0.374	0.015	-	S08	0.650	KEYV-S08	11.06
VED050L37R031-U06S08	●		6	30°	0.500	0.488	0.374	0.031	-	S08	0.650	KEYV-S08	11.06
VEE050L37R000-U06S08	●		6	45°	0.500	0.488	0.374	-	-	S08	0.650	KEYV-S08	11.06
VEE050L37R015-U06S08	●		6	45°	0.500	0.488	0.374	0.015	-	S08	0.650	KEYV-S08	11.06
VEE050L37R031-U06S08	●		6	45°	0.500	0.488	0.374	0.031	-	S08	0.650	KEYV-S08	11.06
VEE050L37R062-U06S08	●		6	45°	0.500	0.488	0.374	0.062	-	S08	0.650	KEYV-S08	11.06
VEE050L37C004-U06S08		●	6	50°	0.500	0.488	0.374	-	0.004	S08	0.650	KEYV-S08	11.06

Metric	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0R05-06S05	●		6	45°	8	7.7	5	0.5	-	S05	10	KEYV-S05	7
VEE080L05.0R10-06S05	●		6	45°	8	7.7	5	1	-	S05	10	KEYV-S05	7
VEE080L05.0R15-06S05	●		6	45°	8	7.7	5	1.5	-	S05	10	KEYV-S05	7
VEE080L05.0C10-06S05		●	6	50°	8	7.7	5	-	0.1	S05	10	KEYV-S05	7
VEE100L07.0R00-06S06	●		6	45°	10	9.7	7	-	-	S06	13	KEYV-S06	10
VED100L07.0R05-06S06	●		6	30°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VEE100L07.0R05-06S06	●		6	45°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VED100L07.0R10-06S06	●		6	30°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VEE100L07.0R10-06S06	●		6	45°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VED100L07.0R15-06S06	●		6	30°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0R15-06S06	●		6	45°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0C10-06S06		●	6	50°	10	9.7	7	-	0.1	S06	13	KEYV-S06	10
VEE120L09.0R00-06S08	●		6	45°	12	11.7	9	-	-	S08	16.5	KEYV-S08	15
VED120L09.0R05-06S08	●		6	30°	12	11.7	9	0.5	-	S08	16.5	KEYV-S08	15
VED120L09.0R10-06S08	●		6	30°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R10-06S08	●		6	45°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R15-06S08	●		6	45°	12	11.7	9	1.5	-	S08	16.5	KEYV-S08	15
VEE120L09.0C10-06S08		●	6	50°	12	11.7	9	-	0.1	S08	16.5	KEYV-S08	15

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

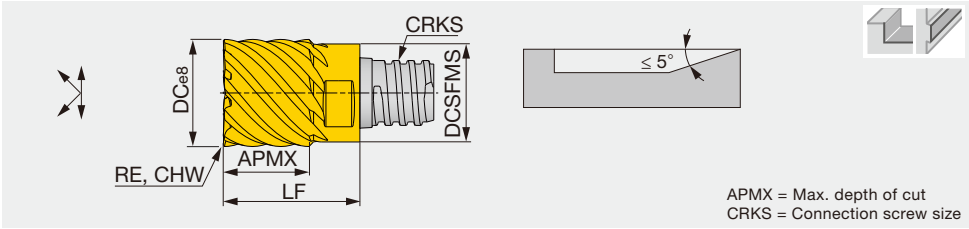
● : Line up

Reference pages: Standard cutting conditions → I022 - I023

VED**-08/10..., VEE**-08/10...

8, 10 flute, roughing - finishing, small width of cut





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque
VED062L47R000-U08S10	●		8	30°	0.625	0.600	0.470	-	-	S10	0.810	KEYV-S10	20.65
VED062L47R015-U08S10	●		8	30°	0.625	0.600	0.470	0.015	-	S10	0.810	KEYV-S10	20.65
VED062L47R031-U08S10	●		8	30°	0.625	0.600	0.470	0.031	-	S10	0.810	KEYV-S10	20.65
VED062L47R062-U08S10	●		8	30°	0.625	0.600	0.470	0.062	-	S10	0.810	KEYV-S10	20.65
VEE062L47C008-U08S10		●	8	50°	0.625	0.600	0.470	-	0.008	S10	0.810	KEYV-S10	20.65
VED075L62R031-U10S12	●		10	30°	0.750	0.720	0.620	0.031	-	S12	1.000	KEYV-S12	20.65
VED075L62R062-U10S12	●		10	30°	0.750	0.720	0.620	0.062	-	S12	1.000	KEYV-S12	20.65
VEE075L62C008-U10S12		●	10	50°	0.750	0.720	0.620	-	0.008	S12	1.000	KEYV-S12	20.65
VED100L86R031-U10S15	●		10	30°	1.000	0.941	0.866	0.031	-	S15	1.457	KEYV-W20	29.50
VED100L86R062-U10S15	●		10	30°	1.000	0.941	0.866	0.062	-	S15	1.457	KEYV-W20	29.50

Metric	AH715	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VED160L12.0R05-08S10		●		8	30°	16	15.3	12	0.5	-	S10	20.5	KEYV-S10	28
VED160L12.0R10-08S10	●	●		8	30°	16	15.3	12	1	-	S10	20.5	KEYV-S10	28
VED160L12.0R16-08S10		●		8	30°	16	15.3	12	1.6	-	S10	20.5	KEYV-S10	28
VED160L12.0R20-08S10		●		8	30°	16	15.3	12	2	-	S10	20.5	KEYV-S10	28
VEE160L12.0C20-08S10			●	8	50°	16	15.3	12	-	0.2	S10	20.5	KEYV-S10	28
VED200L15.0R10-10S12		●		10	30°	20	18.3	15	1	-	S12	25.5	KEYV-S12	28
VED200L15.0R20-10S12		●		10	30°	20	18.3	15	2	-	S12	25.5	KEYV-S12	28
VEE200L15.0C20-10S12			●	10	50°	20	18.3	15	-	0.2	S12	25.5	KEYV-S12	28
VED250L22.0R10-10S15		●		10	30°	25	23.9	22	1	-	S15	37	KEYV-W20	40

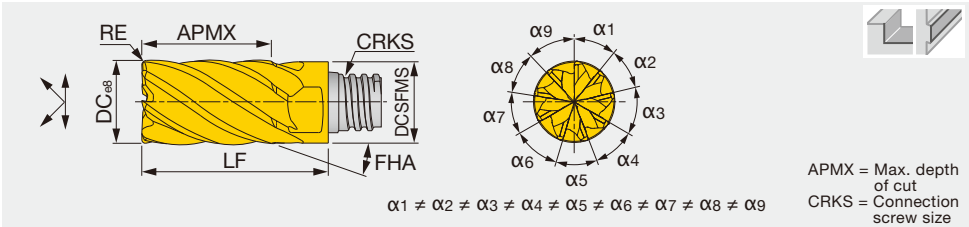
Torque: Recommended clamping torque: lbs·ft (*N·m)
VED/VEE062 ~ VED/VEE075 / VEE/VED160 ~ VED/VEE200: 2 pieces per package
VED100 / VED250: 1 piece per package

● : Line up

VED**-07/09...

7, 9 flute, roughing - finishing, long edge, variable helix and pitch, small width of cut





α1 ≠ α2 ≠ α3 ≠ α4 ≠ α5 ≠ α6 ≠ α7 ≠ α8 ≠ α9

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VED080L12.0R05I07S05	●	7	34° - 40°	8	7.7	12	0.5	S05	18	KEYV-S05	7
VED100L15.0R05I07S06	●	7	34° - 40°	10	9.6	15	0.5	S06	22	KEYV-S06	10
VED120L18.0R05I07S08	●	7	34° - 40°	12	11.7	18	0.5	S08	27	KEYV-S08	15
VED160L24.0R08I09S10	●	9	34° - 40°	16	15.3	24	0.8	S10	33.5	KEYV-S10	28
VED200L30.0R10I09S12	●	9	34° - 40°	20	18.45	30	1	S12	41	KEYV-S12	28
VED250L37.0R10I09S15	●	9	34° - 40°	25	23.9	37	1	S15	52.5	KEYV-W20	40

Torque: Recommended clamping torque: N·m
VED080 ~ VED160: 2 pieces per package
VED200, VED250: 1 piece per package

● : Line up

Reference pages: Standard cutting conditions → I022 - I023

STANDARD CUTTING CONDITIONS

Shoulder milling

VEH, VEE: 3 flutes, VED / VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VED-R, VEE-C

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Width of cut *ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC

VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes, VED: 7, 9 flutes

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Width of cut *ae* (in)
S	Titanium alloys Ti-6Al-4V, etc.	-	200 - 400	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	100 - 200	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	260 - 530	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	130 - 300	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC

Slotting

VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
N	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC

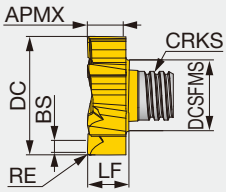
TUNGMEISTER

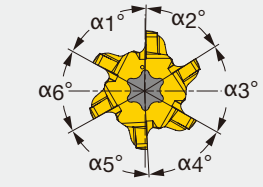
VFM...

6 flute, roughing - finishing, for face milling

Face mill







α1 ≠ α2 ≠ α3 ≠ α4 ≠ α5 ≠ α6

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	BS	CRKS	LF	Wrench	Torque
VFM120L03.6R02I06S05	●	6	10°	12	7.7	3.6	0.2	1.2	S05	4.4	KEYV-T20	7
VFM160L04.8R04I06S06	●	6	10°	16	9.7	4.8	0.4	2	S06	5.6	KEYV-T25	10
VFM200L06.0R04I06S08	●	6	10°	20	11.7	6	0.4	2	S08	7	KEYV-T40L	15
VFM250L07.5R04I06S10	●	6	10°	25	15.3	7.5	0.4	2	S10	8.55	KEYV-T50L	28

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I024

STANDARD CUTTING CONDITIONS

Face milling

VFM

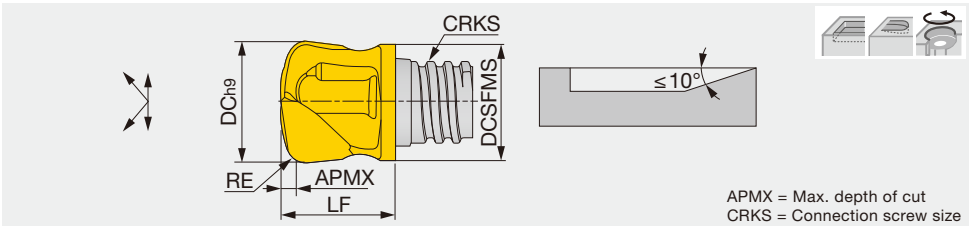
ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC ø12 mm	ø16 mm	ø20 mm	ø25 mm	Depth of cut *ap* (in)	Width of cut *ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	262 - 591	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	197 - 459	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	197 - 394	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	131 - 328	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	262 - 656	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	262 - 656	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
N	Aluminum alloys Si < 13%	-	656 - 2297	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
N	Aluminum alloys Si ≥ 13%	-	328 - 984	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC

TUNGMEISTER

VFX**-02...

2 flute, roughing





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE(1)	CRKS	LF	Wrench	Torque	*fz*(mm/t)
VFX100L00.6R20-02S06	●	2	0°	10	9.6	0.6	2	S06	12.5	KEYV-S06	10	0.3 - 0.6
VFX120L01.0R25-02S08	●	2	0°	12	11.5	1.0	2.5	S08	11.1	KEYV-S08	15	0.5 - 1
VFX160L01.1R30-02S10	●	2	0°	16	15.2	1.1	3	S10	13.5	KEYV-S10	28	0.55 - 1.1
VFX200L01.5R33-02S12	●	2	0°	20	18.3	1.5	3.3	S12	17.5	KEYV-S12	28	0.75 - 1.5

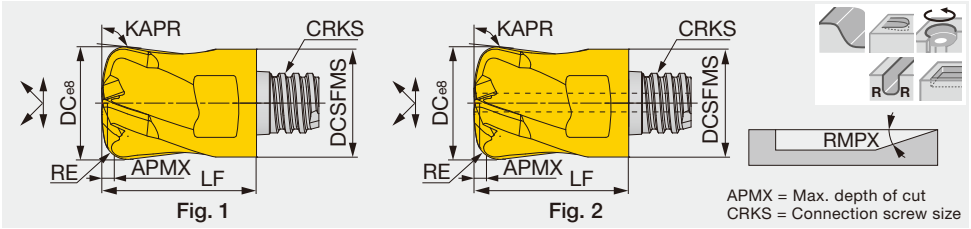
Torque: Recommended clamping torque: N·m
(1) Corner radius for CAM programming
For VFX head, taper neck shank or Tungsten shank should be recommended.
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I025

4, 6 flute, roughing





Metric	AH715	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	RMPX	Wrench	Torque	*fz*(mm/t)	Fig.
VFX120L0.60R18E04S08	●			4	20°	12	11.5	0.6	1.8	97°	S08	16.5	5°	KEYV-S08	15	0.16 - 0.67	2
VFX120L0.60R18H04S08		●		4	20°	12	11.5	0.6	1.8	97°	S08	16.5	5°	KEYV-S08	15	0.16 - 0.67	1
VFX120L0.65R12E06S08			●	6	20°	12	11.5	0.65	0.6	97°	S08	12	3°	KEYV-S08	15	0.16 - 0.54	2
VFX160L0.80R22E04S10	●			4	20°	16	15.4	0.8	2.2	97°	S10	20.5	5°	KEYV-S10	28	0.2 - 0.75	2
VFX160L0.80R22H04S10		●		4	20°	16	15.4	0.8	2.2	97°	S10	20.5	5°	KEYV-S10	28	0.2 - 0.75	1
VFX160L1.05R20E06S10			●	6	20°	16	15.4	1.05	1	97°	S10	16	3°	KEYV-S10	28	0.2 - 0.65	2

Torque: Recommended clamping torque: N·m
Slot milling is not recommended for workpiece materials such as stainless steel where chips tend to adhere.
Also max. ae < 0.4D.
2 pieces per package

●: Line up

STANDARD CUTTING CONDITIONS

High feed milling

VFX: 2, 4, 6 flutes

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	ø10 mm		ø12 mm		ø16 mm		ø20 mm		Width of cut
				Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)	Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)	Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)	Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)	*ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.012 - 0.028	0.020	0.016 - 0.031	0.020	0.020 - 0.035	0.030	0.024 - 0.039	0.039	0.6 x DC
P	Alloy steel 4140, 8620, etc.	- 300 HB	262 - 591	0.008 - 0.024	0.020	0.012 - 0.028	0.020	0.016 - 0.031	0.030	0.020- 0.035	0.039	0.6 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.008 - 0.020	0.016	0.008 - 0.020	0.016	0.012 - 0.024	0.020	0.012 - 0.024	0.030	0.6 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	197 - 328	0.008 - 0.024	0.016	0.008 - 0.024	0.016	0.012 - 0.028	0.020	0.012 - 0.028	0.030	0.6 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	328 - 722	0.012 - 0.028	0.020	0.016 - 0.031	0.030	0.020 - 0.035	0.030	0.024 - 0.039	0.039	0.6 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	328 - 722	0.008 - 0.024	0.020	0.012 - 0.028	0.030	0.016 - 0.031	0.030	0.020 - 0.035	0.039	0.6 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.008 - 0.020	0.016	0.008 - 0.020	0.016	0.008 - 0.024	0.020	0.008 - 0.024	0.020	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.004 - 0.012	0.012	0.004 - 0.012	0.012	0.004 - 0.012	0.016	0.004 - 0.012	0.016	0.25 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.008 - 0.016	0.012	0.008 - 0.016	0.012	0.012 - 0.020	0.016	0.012 - 0.020	0.016	0.45 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.004 - 0.008	0.008	0.004 - 0.008	0.008	0.004 - 0.012	0.012	0.004 - 0.012	0.012	0.25 x DC

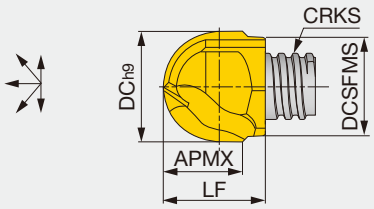
Please note that the feed per tooth should not exceed the maximum feed per tooth for each product.

TUNGMEISTER

VBB**-BM...

2 flute, roughing - semi finishing, economical





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque
VBB0312L31-BM-U02S05	●	2	0°	0.312	0.300	0.310	S05	0.390	KEYV-S05	5.16
VBB0375L38-BM-U02S06	●	2	0°	0.375	0.360	0.380	S06	0.478	KEYV-S06	7.38
VBB0500L50-BM-U02S08	●	2	0°	0.500	0.480	0.508	S08	0.646	KEYV-S08	11.06
VBB0625L63-BM-U02S10	●	2	0°	0.625	0.600	0.630	S10	0.750	KEYV-S10	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BM-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BM-02S06	●	2	0°	10	9.5	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BM-02S08	●	2	0°	12	11.5	11.5	S08	15.3	KEYV-S08	15
VBB160L16.0-BM-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

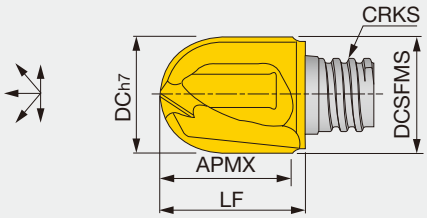
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

VBB**-BG...

2 flute, finishing, high accuracy (h7 tolerance), for hardened steel





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH750	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque
VBB0312L31-BG-U02S05	●	2	0°	0.312	0.300	0.312	S05	0.390	KEYV-S05	5.16
VBB0375L38-BG-U02S06	●	2	0°	0.375	0.360	0.380	S06	0.480	KEYV-S06	7.38
VBB0500L50-BG-U02S08	●	2	0°	0.500	0.480	0.500	S08	0.640	KEYV-S08	11.06
VBB0625L63-BG-U02S10	●	2	0°	0.625	0.598	0.630	S10	0.752	KEYV-S10	20.65

Metric	AH750	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BG-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BG-02S06	●	2	0°	10	9.6	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BG-02S08	●	2	0°	12	11.5	12	S08	15.3	KEYV-S08	15
VBB160L16.0-BG-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

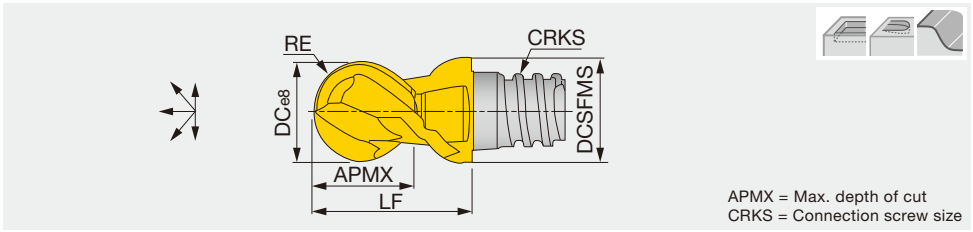
● : Line up

Reference pages: Standard cutting conditions → I029

VBD**-BG...

2 flute, semi finishing - finishing, helix cutting edge





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VBD0312L20-BG-U02S05	●	2	30°	0.312	0.300	0.200	0.156(1)	S05	0.350	KEYV-S05	5.16
VBD0375L27-BG-U02S06	●	2	30°	0.375	0.360	0.275	0.188(1)	S06	0.512	KEYV-S06	7.38
VBD0500L37-BG-U02S08	●	2	30°	0.500	0.488	0.374	0.249(2)	S08	0.650	KEYV-S08	11.06
VBD0625L47-BG-U02S10	●	2	30°	0.625	0.600	0.470	0.313(2)	S10	0.800	KEYV-S10	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBD080L05.0-BG-02S05	●	2	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBD100L07.0-BG-02S06	●	2	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBD120L09.0-BG-02S08	●	2	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15
VBD160L09.5-BG-02S10	●	2	30°	16	15.3	9	7.978(2)	S10	20.5	KEYV-S10	28

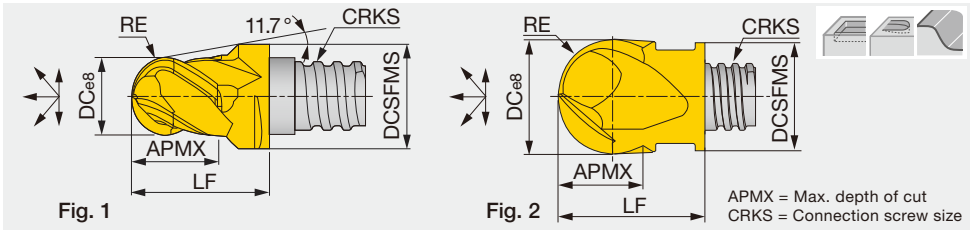
The tolerance of RE: (1) ± 0.0004", ± 0.01 mm (2) ± 0.0005", ± 0.012 mm
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

VBD**-BG-04..., VBE**-BG-04...

4 flute, roughing - finishing, helix cutting edge





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque	Fig.
VBE0250L20-BG-U04S05		●	4	38°	0.250	0.300	0.200	0.124(1)	S05	0.390	KEYV-S05	5.16	1
VBE0312L20-BG-U04S05		●	4	38°	0.312	0.300	0.200	0.156(1)	S05	0.350	KEYV-S05	5.16	2
VBD0375L27-BG-U04S06		●	4	38°	0.375	0.360	0.275	0.188(1)	S06	0.512	KEYV-S06	7.38	2
VBD0500L37-BG-U04S08		●	4	30°	0.500	0.488	0.374	0.249(2)	S08	0.650	KEYV-S08	11.06	2
VBD0625L47-BG-U04S10		●	4	30°	0.625	0.600	0.470	0.313(2)	S10	0.800	KEYV-S10	20.65	2
VBD0750L62-BG-U04S12	●	●	4	30°	0.750	0.720	0.620	0.374(2)	S12	1.000	KEYV-S12	20.65	2
VBD100L86-BG-U04S15		●	4	30°	1.000	0.940	0.860	0.500(3)	S15	1.450	KEYV-W20	29.5	2

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*	Fig.
VBE050L04.0-BG-04S04		●	4	38°	5	6	4	2.487(1)	S04	8.5	KEYV-S05	4	1
VBE060L04.0-BG-04S04		●	4	38°	6	5.8	4	2.987(1)	S04	8.5	KEYV-S05	4	2
VBE060L05.5-BG-04S05		●	4	38°	6	8	5.5	2.987(1)	S05	10	KEYV-S05	7	1
VBD080L05.0-BG-04S05	●	●	4	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7	2
VBD100L07.0-BG-04S06	●	●	4	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10	2
VBD120L09.0-BG-04S08		●	4	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15	2
VBD160L12.0-BG-04S10	●	●	4	30°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28	2
VBD200L15.0-BG-04S12		●	4	30°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28	2

The tolerance of RE: (1) ± 0.0004", ± 0.01 mm (2) ± 0.0005", ± 0.012 mm (3) ± 0.0008"
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

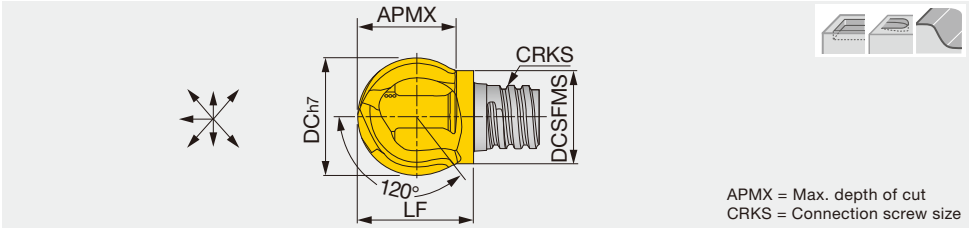
Reference pages: Standard cutting conditions → I029

TUNGMEISTER

VBB**-SG...

2 flute, roughing - finishing, sphere cutting edge, high accuracy (h7 tolerance)





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque
VBB0375L31-SG-U02S05	●	2	0°	0.375	0.300	0.315	S05	0.389	KEYV-S05	5.16
VBB0500L37-SG-U02S06	●	2	0°	0.500	0.378	0.378	S06	0.482	KEYV-S06	7.38
VBB0625L50-SG-U02S08	●	2	0°	0.625	0.480	0.508	S08	0.606	KEYV-S08	11.06
VBB0750L63-SG-U02S10	●	2	0°	0.750	0.600	0.634	S10	0.710	KEYV-S10	20.65

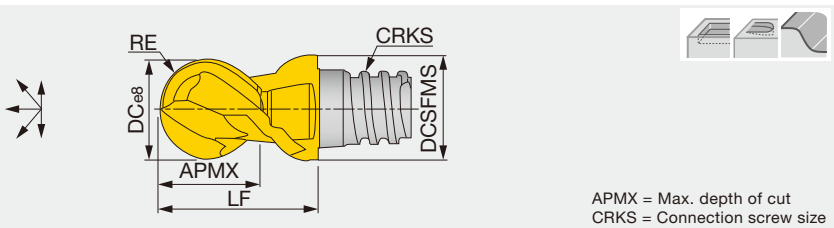
Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB100L08.0-SG-02S05	●	2	0°	10	7.6	7.5	S05	10	KEYV-S05	7
VBB120L09.6-SG-02S06	●	2	0°	12	9.5	9	S06	11.6	***KEYV-S08	10
VBB160L12.9-SG-02S08	●	2	0°	16	12.2	12	S08	15.4	***KEYV-S10	15
VBB200L16.1-SG-02S10	●	2	0°	20	15.2	15	S10	18.4	KEYV-S10	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
● : Line up
*** The wrench size for these heads is different from the ones for the other head types.
For pull-cutting on the vertical wall
2 pieces per package

VBE**-BGA...

2 flute, roughing - finishing, for non-ferrous metal, helix cutting edge





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VBE0312L20-BGAU02S05	●	2	45°	0.312	0.300	0.200	0.156(1)	S05	0.390	KEYV-S05	5.16
VBE0375L27-BGAU02S06	●	2	45°	0.375	0.360	0.270	0.187(1)	S06	0.510	KEYV-S06	7.38
VBE0500L37-BGAU02S08	●	2	45°	0.500	0.488	0.374	0.250(2)	S08	0.650	KEYV-S08	11.06
VBE0625L47-BGAU02S10	●	2	45°	0.625	0.600	0.470	0.312(2)	S10	0.800	KEYV-S10	20.65
VBE0750L50-BGAU02S12	●	2	45°	0.750	0.720	0.500	0.374(2)	S12	1.000	KEYV-S12	20.65

Metric	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE080L05.0-BGA02S05	●	2	45°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBE100L07.0-BGA02S06	●	2	45°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBE120L09.0-BGA02S08	●	2	45°	12	11.7	9	5.987(2)	S08	16.5	KEYV-S08	15
VBE160L12.0-BGA02S10	●	2	45°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28
VBE200L15.0-BGA02S12	●	2	45°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28

The tolerance of RE : (1) ± 0.0004", ± 0.01 mm (2) ± 0.0005", ± 0.012 mm
● : Line up
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I029

STANDARD CUTTING CONDITIONS

Profiling for roughing

VBB-BM / BG / SG, VBD-BG, VBE-BGA

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	High carbon steels 4140, etc.	- 300 HB	262 - 591	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	197 - 328	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
N	Aluminum alloys Si < 13%	-	656 -2297	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Aluminum alloys Si ≥13%	-	328 - 984	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	66 - 131	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	66 - 197	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC

Profiling for semi-finishing and finishing

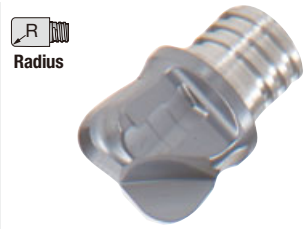
VBB-BM / BG / SG, VBD-BG, VBE-BGA

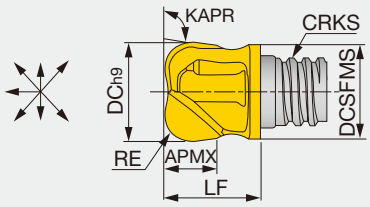
ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	394 - 820	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	High carbon steels 4140, etc.	- 300 HB	328 - 722	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	328 - 656	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	262 - 394	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	394 - 919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	394 -919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
N	Aluminum alloys Si < 13%	-	984 - 3281	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Aluminum alloys Si ≥13%	-	492 - 1312	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	98 - 164	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	98 - 262	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC

TUNGMEISTER

VRB**-02..., VRC**-02...

2 flute, roughing - semi finishing, economical







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	Wrench	Torque
VRB062L31R187-U02S10	●	2	-	0.625	0.600	0.310	0.190	97°	S10	0.580	KEYV-S10	20.65
VRB075L45R250-U02S12	●	2	-	0.750	0.720	0.450	0.250	97°	S12	0.680	KEYV-S12	20.65
VRB075L45R312-U02S12	●	2	-	0.750	0.720	0.450	0.312	97°	S12	0.680	KEYV-S12	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	Wrench	Torque*
VRC100L07.0R10-02S06	●	2	15°	10	9.5	7	1	95°	S06	12.4	KEYV-S06	10
VRB100L06.0R20-02S06	●	2	0°	10	9.2	6	2	97°	S06	12.4	KEYV-S06	10
VRB120L05.7R30-02S06	●	2	0°	12	9.5	5.7	3	97°	S06	9.1	***KEYV-S08	10
VRB120L05.4R40-02S06	●	2	0°	12	9.5	5.4	4	97°	S06	9.1	***KEYV-S08	10
VRB120L06.3R16-02S08	●	2	0°	12	11.5	5.9	1.6	97°	S08	11.1	KEYV-S08	15
VRB120L06.2R20-02S08	●	2	0°	12	11.5	6.2	2	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R25-02S08	●	2	0°	12	11.5	5.8	2.5	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R30-02S08	●	2	0°	12	11.5	5.7	3	97°	S08	11.1	KEYV-S08	15
VRB120L05.9R40-02S08	●	2	0°	12	11.5	5.5	4	97°	S08	11.1	KEYV-S08	15
VRB160L08.0R50-02S10	●	2	0°	16	15.2	8	5	97°	S10	20.2	KEYV-S10	28
VRB200L11.1R30-02S12	●	2	0°	20	18.3	11	3	97°	S12	17	KEYV-S12	28
VRB200L11.5R40-02S12	●	2	0°	20	18.3	11.3	4	97°	S12	17.3	KEYV-S12	28
VRB200L11.5R50-02S12	●	2	0°	20	18.3	11.3	5	97°	S12	17.3	KEYV-S12	28
VRB200L11.4R60-02S12	●	2	0°	20	18.3	11.2	6	97°	S12	17.3	KEYV-S12	28
VRB200L11.3R80-02S12	●	2	0°	20	18.3	11.1	8	97°	S12	17.3	KEYV-S12	28

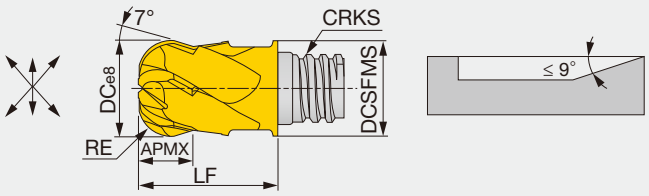
Torque: Recommended clamping torque: lbs·ft (*N·m)
*** The wrench size for these heads is different from the ones for the other head types.
Suitable for contouring operation.
2 pieces per package

● : Line up

VRD**-06...

6 flute, semi finishing - finishing, helix cutting edge







APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VRD031L16R078-U06S05	●	6	30°	0.312	0.300	0.160	0.078	S05	0.390	KEYV-S05	5.16
VRD037L19R031-U06S06	●	6	30°	0.375	0.360	0.190	0.031	S06	0.510	KEYV-S06	7.38
VRD037L19R062-U06S06	●	6	30°	0.375	0.360	0.190	0.062	S06	0.510	KEYV-S06	7.38
VRD037L19R125-U06S06	●	6	30°	0.375	0.360	0.190	0.125	S06	0.510	KEYV-S06	7.38
VRD050L27R062-U06S08	●	6	30°	0.500	0.480	0.270	0.062	S08	0.650	KEYV-S08	11.06
VRD050L27R125-U06S08	●	6	30°	0.500	0.480	0.270	0.125	S08	0.650	KEYV-S08	11.06
VRD050L27R156-U06S08	●	6	30°	0.500	0.480	0.270	0.156	S08	0.650	KEYV-S08	11.06
VRD062L35R200-U06S10	●	6	30°	0.625	0.600	0.350	0.200	S10	0.807	KEYV-S10	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VRD080L04.0R20-06S05	●	6	30°	8	7.7	4	2	S05	10	KEYV-S05	7
VRD100L05.0R30-06S06	●	6	30°	10	9.7	5	3	S06	13	KEYV-S06	10
VRD120L07.0R40-06S08	●	6	30°	12	11.7	7	4	S08	16.5	KEYV-S08	15
VRD160L09.0R50-06S10	●	6	30°	16	15.3	9	5	S10	20.5	KEYV-S10	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I031

STANDARD CUTTING CONDITIONS

Shoulder milling

VRB, VRC, VRD

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipr) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	Depth of cut *ap* (in)	Width of cut *ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	262 - 591	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
P	High carbon steels 4140, etc.	- 300 HB	197 - 459	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	197 - 394	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	131 - 328	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	262 - 656	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 656	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si < 13%	-	656 - 2297	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si ≥13%	-	328 - 984	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	40 - 50 HRC	131 - 262	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC
H	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	66 - 197	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.6 x DC	0.25 x DC

Slotting

VRB, VRC, VRD

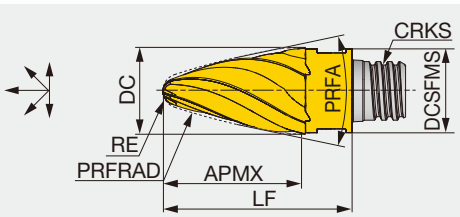
ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipr) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	Depth of cut *ap* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	164 - 230	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
P	High carbon steels 4140, etc.	- 300 HB	131 - 262	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	131 - 230	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	98 - 197	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	164 - 394	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	164 - 394	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
N	Aluminum alloys Si < 13%	-	427 - 1312	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
N	Aluminum alloys Si ≥13%	-	230 - 656	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	66 - 131	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	33 - 66	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	40 - 50 HRC	82 - 197	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC
H	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	33 - 98	0.001 - 0.002	0.0016 - 0.002	0.002 - 0.0024	0.0024 - 0.0031	0.0028 - 0.0039	0.5 x DC

TUNGMEISTER

VBO...

4, 5 flute, semi finishing - finishing, long edge, high productive profiling





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque
VBO080L12.0R900-4S05	●	4	30°	8	7.7	12	1	90	33.6°	S05	18	KEYV-S05	7
VBO100L15.0R850-5S06	●	5	30°	10	9.7	15	2	85	27.3°	S06	22	KEYV-S06	10
VBO120L19.0R800-5S08	●	5	30°	12	11.7	19	2	80	29.3°	S08	27	KEYV-S08	15
VBO160L25.0R750-5S10	●	5	30°	16	15.3	25	3	75	26.7°	S10	33.5	KEYV-S10	28

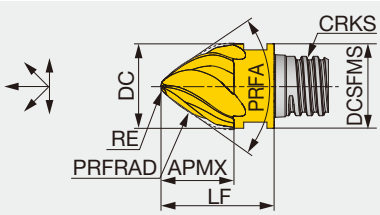
Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

VBO...

4 flute, semi finishing - finishing, short edge, high productive profiling





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque
VBO100L08.0R250-4S06	●	4	30°	10	9.7	8	0.8	25	70.8°	S06	13	KEYV-S06	10
VBO120L09.0R300-4S08	●	4	30°	12	11.7	9	1.2	30	71.6°	S08	16.5	KEYV-S08	15
VBO160L13.0R400-4S10	●	4	30°	16	15.3	13	1.6	40	70.3°	S10	20.5	KEYV-S10	28

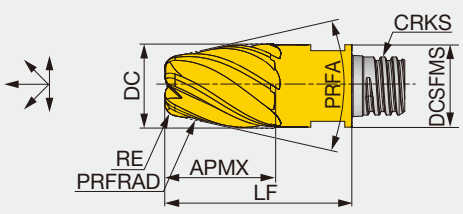
Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

VBN...

6 flute, semi finishing - finishing, high productive profiling





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque
VBN100L13.0R450-6S06	●	6	35°	10	9.7	13	1.5	45	15.1°	S06	22	KEYV-S06	10
VBN120L15.0R500-6S08	●	6	35°	12	11.7	15	2	50	15.1°	S08	27	KEYV-S08	15
VBN160L18.0R600-6S10	●	6	35°	16	15.3	18	2	60	15.1°	S10	33.5	KEYV-S10	28

Torque: Recommended clamping torque: N·m
2 pieces per package

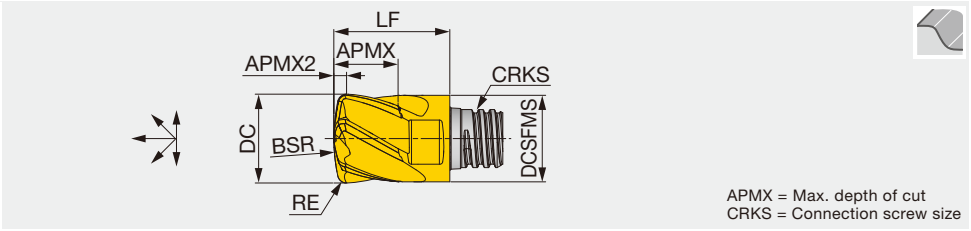
● : Line up

Reference pages: Standard cutting conditions → I034

VBL...

6 flute, semi finishing - finishing, high productive profiling





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	APMX2	RE	BSR	CRKS	LF	Wrench	Torque
VBL080L0.90R160-6S05	●	6	30°	8	7.7	5.5	0.9	0.5	16	S05	10	KEYV-S05	7
VBL100L1.40R200-6S06	●	6	30°	10	9.7	7.5	1.42	1	20	S06	13	KEYV-S06	10
VBL120L1.50R240-6S08	●	6	30°	12	11.7	9	1.55	1	24	S08	16.5	KEYV-S08	15
VBL160L1.80R320-6S10	●	6	30°	16	15.3	12	1.8	1	32	S10	20.5	KEYV-S10	28

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

TARGET APPLICATIONS

VBO-short

Convex-curved surfaces, tapered surfaces, and surfaces consisting of combinations of a small corner radius and walls (the corner radius must be larger than the tool's nose radius).



VBO-long

Convex-curved and tapered surfaces in gentler profile than those of VBO-short.



VBN

Impellers, blisks, blades, and other aerospace parts.



Reference pages: Standard cutting conditions → I034

STANDARD CUTTING CONDITIONS

Profiling

VBO, VBN, VBL

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 10 mm	12 mm	16 mm	Cusp height (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
P	High carbon steel 4140, etc.	- 300 HB	262 - 591	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
M	Stainless steels 304, 316, etc.	- 200 HB	197 - 328	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
K	Gray cast irons 250, 300, etc.	150 - 250 HB	328 - 722	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 722	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
N	Aluminum alloys Si < 13%	-	656 - 2297	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
N	Aluminum alloys Si ≥13%	-	328 - 984	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
S	Heat-resistant alloys Inconel718, etc.	-	66 - 131	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004

TIPS FOR USING ON 3-AXIS MACHINES

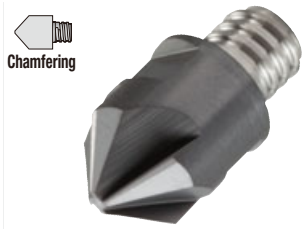
The VBO/VBN milling heads are designed for the use on 5-axis machines. However, they are also effective on 3-axis machining centers when either of the following conditions is satisfied.

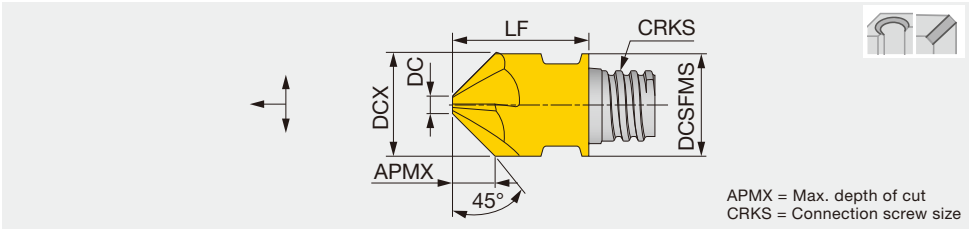
1. The angled walls or curved surfaces to be machined have tilt angles within the range specified in the chart on the right.
2. Use as a regular tapered ball mill with only the nose radius of the tool tip, and not the radius on the tool side, to be used. Please note that the working diameter will be smaller that those of a ball mill of the same working diameter.

	Designation	Applicable ranges of tilt angles on workpiece Min.	Mean	Max.
VBO-short	VBO100L08.0R250-4S06	56°	70.8°	85°
	VBO120L09.0R300-4S08	58°	71.6°	85°
	VBO160L13.0R400-4S10	56°	70.3°	85°
VBO-long	VBO100L15.0R850-5S06	20°	27.3°	35°
	VBO120L19.0R800-5S08	19°	29.3°	40°
	VBO160L25.0R750-5S10	10°	26.7°	43°
VBN	VBN100L13.0R450-6S06	0°	15.1°	29°
	VBN120L15.0R500-6S08	0°	15.1°	29°
	VBN160L18.0R600-6S10	0°	15.1°	29°

VCA**-04/06...

4, 6 flute, chamfering angle: 45°





Inch	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque
VCA0375L16A45-U04S06	●	4	0°	0.375	0.375	0.150	0.073	S06	0.512	KEYV-S06	7.38

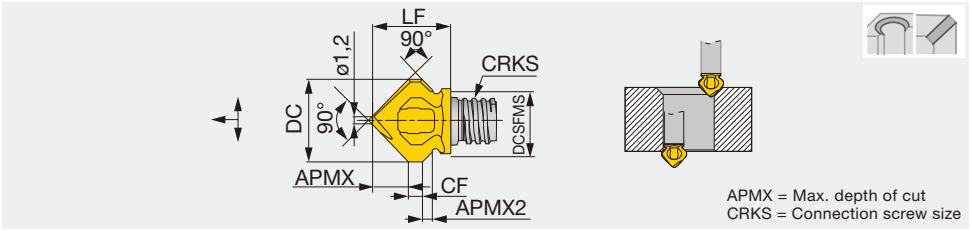
Metric	AH715	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA100L04.0A45-04S06	●	●	4	0°	10	10	4	1.95	S06	13	KEYV-S06	10
VCA120L05.0A45-04S08	●	●	4	0°	12	12	5	1.95	S08	16.5	KEYV-S08	15
VCA127L05.3A45-04S08		●	4	0°	12.7	12.7	5.3	1.98	S08	16.5	KEYV-S08	15
VCA160L06.5A45-06S10	●	●	6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28
VCA200L07.5A45-06S12		●	6	0°	20	18.3	7.5	5	S12	25.5	KEYV-S12	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package
● : Line up

VCW**-02...

2 flute, chamfering angle: 45°, back chamfering capability





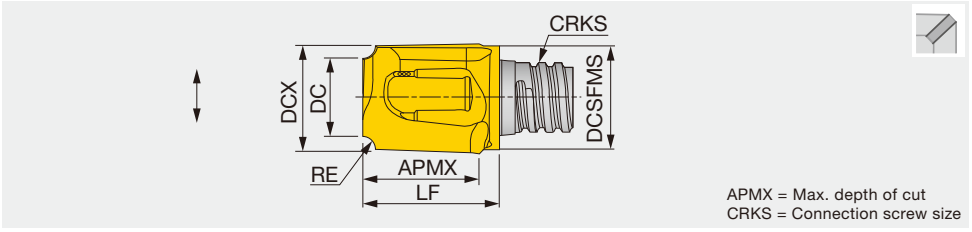
Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	APMX2	CF	CRKS	LF	Wrench	Torque
VCW118L05.0A45-02S06	●	●	2	0°	11.8	9.3	5	1.2	2	S06	11.2	***KEYV-S08	10

Torque: Recommended clamping torque: N·m
*** The wrench size for these heads is different from the ones for the other head types.
Available for chamfering of reverse side.
2 pieces per package
● : Line up

VCR**-02...

2 flute, radius chamfering





Metric	AH725	NOF	FHA	DCX	DCSFMS	DC	APMX	RE	CRKS	LF	Wrench	Torque
VCR080L07.5R10-02S05	●	2	0°	8	7.6	5.8	7.5	1	S05	10.5	KEYV-S05	7
VCR100L09.5R16-02S06	●	2	0°	10	9.5	6.8	9.5	1.6	S06	12.5	KEYV-S06	10
VCR100L09.5R25-02S06	●	2	0°	10	9.5	5.1	9.5	2.5	S06	12.5	KEYV-S06	10
VCR127L12.0R30-02S08	●	2	0°	12.7	12.2	6.5	12	3	S08	15.6	KEYV-S08	15
VCR127L12.0R40-02S08	●	2	0°	12.7	12.2	4.7	12	4	S08	15.6	KEYV-S08	15
VCR160L15.0R50-02S10	●	2	0°	16	15.2	6.2	15	5	S10	19.1	KEYV-S10	28
VCR200L07.0R60-02S12	●	2	0°	20	18.3	8	7	6	S12	17.4	KEYV-S12	28

Torque: Recommended clamping torque: N·m
2 pieces per package
● : Line up

Reference pages: Standard cutting conditions → I036

STANDARD CUTTING CONDITIONS

Chamfering and countersinking (Milling, Z-feed chamfering)

VCA, VCW, VCR

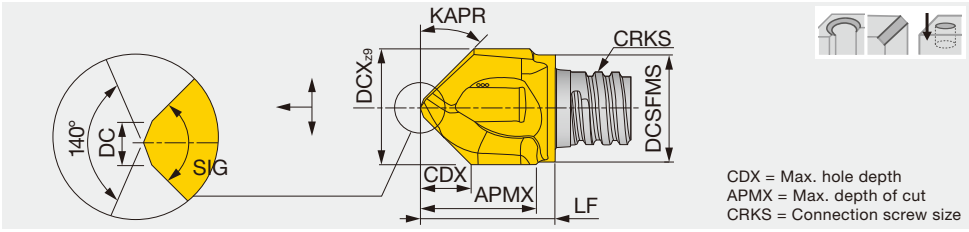
ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	197 - 328	0.0024 - 0.0047
P	High carbon steels 4140,etc.	- 300 HB	164 - 262	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80 etc	30 - 40 HRC	131 - 230	0.0024 - 0.0047
M	Stainless steels SUS304, SUS316, etc. 304, 316, etc.	- 200 HB	98 - 164	0.0024 - 0.0047
K	Grey cast irons 250, 300, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
N	Aluminum alloys	-	328 - 656	0.0031 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	-	98 - 164	0.0020 - 0.0039
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.0016 - 0.0031
H	Hardened steel H13, etc.	40 - 50 HRC	98 - 164	0.0020 - 0.0039
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031

TUNGMEISTER

VCP**-02...

2 flute, chamfering angle: 30°, 45°, 60°





Metric	AH715	AH725	SIG	NOF	FHA	DCX	DCSFMS	APMX	CDX	CRKS	LF	DC	KAPR	Wrench	Torque
VCP100L09.5A30-02S06		●	60°	2	0°	10	9.5	8.5	7.5	S06	11.75	1.5	60°	KEYV-S06	10
VCP120L12.0A30-02S08	●	●	60°	2	0°	12	11.5	11	9.2	S08	15.4	1.5	60°	KEYV-S08	15
VCP160L15.0A30-02S10	●	●	60°	2	0°	16	15.2	16	12	S10	20.2	2.5	60°	KEYV-S10	28
VCP080L07.7A45-02S05	●	●	90°	2	0°	8	7.6	7.5	3.7	S05	9.75	1	45°	KEYV-S05	7
VCP083L07.9A45-02S05		●	90°	2	0°	8.3	7.6	7.5	3.8	S05	10	1	45°	KEYV-S05	7
VCP100L09.0A45-02S06	●	●	90°	2	0°	10	9.5	9.5	4.4	S06	11.75	1.5	45°	KEYV-S06	10
VCP104L09.0A45-02S06		●	90°	2	0°	10.4	9.5	9.5	4.6	S06	11.75	1.5	45°	KEYV-S06	10
VCP120L12.0A45-02S08	●	●	90°	2	0°	12	11.5	11.5	5.4	S08	15.4	1.5	45°	KEYV-S08	15
VCP124L12.0A45-02S08		●	90°	2	0°	12.4	11.5	11.5	5.6	S08	15.4	1.5	45°	KEYV-S08	15
VCP160L15.0A45-02S10	●	●	90°	2	0°	16	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP165L15.0A45-02S10		●	90°	2	0°	16.5	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP100L09.5A60-02S06		●	120°	2	0°	10	9.5	9.5	2.7	S06	12.7	1.5	30°	KEYV-S06	10
VCP120L12.0A60-02S08	●	●	120°	2	0°	12	11.5	11.5	3.3	S08	15.2	1.5	30°	KEYV-S08	15
VCP160L15.5A60-02S10	●	●	120°	2	0°	16	15.2	16	4.4	S10	19.9	1.5	30°	KEYV-S10	28

Torque: Recommended clamping torque: N·m
2 pieces per package

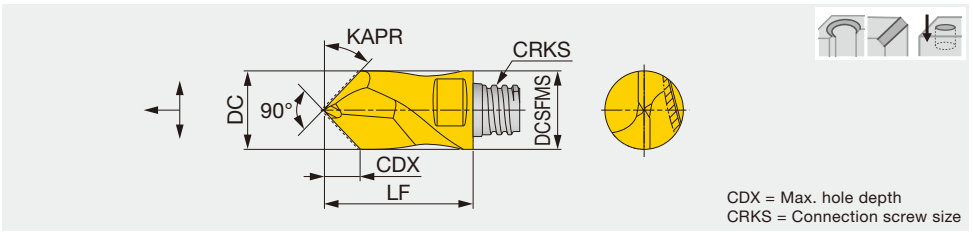
● : Line up

Reference pages: Standard cutting conditions → I037

VDS...

2 flute, chamfering angle: 45°, helix cutting edge





CDX = Max. hole depth
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	CDX	KAPR	CRKS	LF	Wrench	Torque
VDS080A45-02S05	●	2	10°	8	7.7	3.7	45°	S05	15	KEYV-S05	7
VDS100A45-02S06	●	2	10°	10	9.7	4.4	45°	S06	19	KEYV-S06	10
VDS120A45-02S08	●	2	10°	12	11.7	5.4	45°	S08	23	KEYV-S08	15
VDS160A45-02S10	●	2	10°	16	15.3	7.1	45°	S10	28	KEYV-S10	28

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

STANDARD CUTTING CONDITIONS

Spot drill

VCP, VDS

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steel 1045, 1055, etc.	- 300 HB	197 - 328	0.0024 - 0.0047
P	Alloy steel 4140, 8620, etc.	- 300 HB	164 - 262	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	131 - 230	0.0024 - 0.0047
M	Stainless steels 304, 316, etc.	- 200 HB	98 - 164	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
N	Aluminum alloys	-	328 - 656	0.0031 - 0.0063
S	Titanium alloys Ti-6Al-4V, etc.	-	98 - 164	0.002 - 0.0039
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.0016 - 0.0031
H	Hardened steel H13, etc.	40 - 50 HRC	98 - 164	0.002 - 0.0039
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031

TUNGMEISTER

VDP**-02...

2 flute, A/B type center



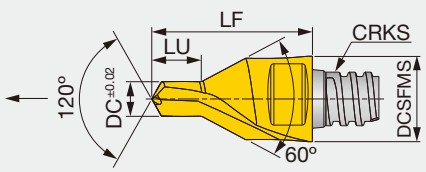


Fig. 1 Type A

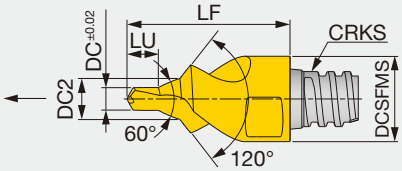


Fig. 2 Type B

CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC±0.02	DC2	DCSFMS	LU	CRKS	LF	Wrench	Torque	Fig.
VDP107L1.60A30-02S04	●	2	0°	1.07	-	6	1.6	S04	10	KEYV-S05	4	1
VDP165L2.40A30-02S04	●	2	0°	1.65	-	6	2.4	S04	10	KEYV-S05	4	1
VDP207L2.90A30-02S04	●	2	0°	2.07	-	6	2.9	S04	10	KEYV-S05	4	1
VDP328L04.6A30-02S05	●	2	0°	3.28	-	8	4.6	S05	15	KEYV-S05	7	1
VDP412L05.9A30-02S06	●	2	0°	4.12	-	10	5.9	S06	19	KEYV-S06	10	1
VDP513L07.2A30-02S08	●	2	0°	5.13	-	12	7.2	S08	23	KEYV-S08	15	1
VDP646L08.9A30-02S10	●	2	0°	6.46	-	16	8.9	S10	28	KEYV-S10	28	1
VDP324L4.38B30-02S08	●	2	0°	3.24	6.77	12	4.4	S08	23	KEYV-S08	15	2
VDP409L5.60B30-02S08	●	2	0°	4.09	8.56	12.7	5.6	S08	23	KEYV-S08	15	2
VDP509L6.89B30-02S12	●	2	0°	5.09	10.69	18.45	6.9	S12	25.5	KEYV-S12	28	2
VDP641L8.63B30-02S12	●	2	0°	6.41	13.29	20	8.6	S12	25.5	KEYV-S12	28	2

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

STANDARD CUTTING CONDITIONS

Center drill

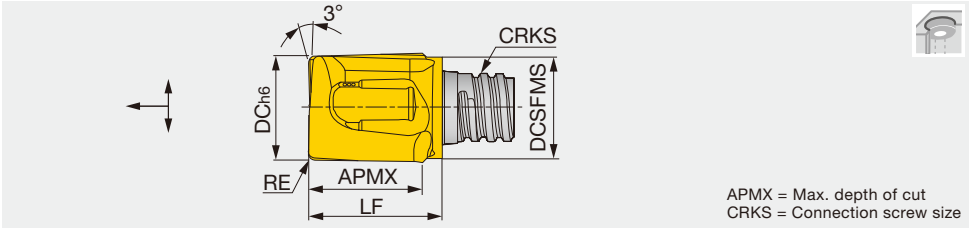
VDP

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed : *f* (ipt) VDP107	VDP165	VDP207	VDP324 / VDP328	VDP409 / VDP412	VDP509 / VDP513	VDP641
P	Carbon steel 1045, 1055, etc.	- 300 HB	131 - 262	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
P	Alloy steel 4140, 8620, etc.	- 300 HB	98 - 164	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	66 - 98	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
M	Stainless steels 304, 316, etc.	- 200 HB	49 - 82	0.0006 - 0.0012	0.0008 - 0.0016	0.0008 - 0.0016	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.	150 - 250 HB	197 - 328	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.002 - 0.0035	0.0028 - 0.0005	0.0028 - 0.0047	0.0047 - 0.0071
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	197 - 328	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0039 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	-	49 - 82	0.0004 - 0.0008	0.0004 - 0.0008	0.0006 - 0.0012	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
S	Heat-resistant alloys Inconel 718, etc.	-	33 - 66	0.0004 - 0.0008	0.0004 - 0.0008	0.0006 - 0.0012	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024
H	Hardened steel H13, etc.	40 - 50 HRC	49 - 82	-	-	-	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
H	Hardened steel D2, etc.	50 - 60 HRC	33 - 66	-	-	-	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024

VGC**-02...

2 flute, for counterboring (can be used for milling)





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque
VGC031L31R016-U02S05	●	2	10°	0.312	0.297	0.310	0.016	S05	0.390	KEYV-S05	5.16
VGC037L38R016-U02S06	●	2	10°	0.375	0.360	0.380	0.016	S06	0.485	KEYV-S06	7.38
VGC050L43R016-U02S08	●	2	10°	0.500	0.453	0.433	0.016	S08	0.600	KEYV-S08	11.06
VGC056L46R016-U02S08	●	2	10°	0.562	0.450	0.460	0.016	S08	0.590	KEYV-S08	11.06
VGC062L60R016-U02S10	●	2	10°	0.625	0.600	0.600	0.016	S10	0.750	KEYV-S10	20.65
VGC062L60R032-U02S10	●	2	10°	0.625	0.600	0.600	0.032	S10	0.750	KEYV-S10	20.65

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VGC078L08.0R02-02S05	●	2	10°	7.8	7.6	8	0.2	S05	10	KEYV-S05	7
VGC080L08.0R04-02S05	●	2	10°	8	7.6	8	0.4	S05	10	KEYV-S05	7
VGC080L08.0R10-02S05	●	2	10°	8	7.6	8	1	S05	10	KEYV-S05	7
VGC080L08.0R20-02S05	●	2	10°	8	7.6	8	2	S05	10	KEYV-S05	7
VGC098L09.0R03-02S06	●	2	10°	9.8	9.5	9.5	0.3	S06	12.4	KEYV-S06	10
VGC100L09.0R04-02S06	●	2	10°	10	9.5	9.5	0.4	S06	12.4	KEYV-S06	10
VGC100L09.0R10-02S06	●	2	10°	10	9.5	9.5	1	S06	12.4	KEYV-S06	10
VGC100L09.0R20-02S06	●	2	10°	10	9.5	9.5	2	S06	12.4	KEYV-S06	10
VGC120L10.0R04-02S08	●	2	10°	12	11.5	10	0.4	S08	14.2	KEYV-S08	15
VGC120L10.0R10-02S08	●	2	10°	12	11.5	10	1	S08	14.2	KEYV-S08	15
VGC120L10.0R20-02S08	●	2	10°	12	11.5	10	2	S08	14.2	KEYV-S08	15
VGC160L15.0R04-02S10	●	2	10°	16	15.2	15	0.4	S10	19	KEYV-S10	28
VGC160L15.0R08-02S10	●	2	10°	16	15.2	15	0.8	S10	19	KEYV-S10	28

Can drill with step feed (Maximum depth: *ap* x 0.5)
Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up

STANDARD CUTTING CONDITIONS

Counterboring

VGC

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1045, 1055, etc.	HB 300 -	131 - 262	0.002 - 0.003
	High carbon steels 4140,etc.	HB 300 -	98 - 164	0.002 - 0.003
	Prehardened steel PX5, NAK80 etc	HRC 40 - 30	66 - 98	0.002 - 0.003
M	Stainless steels 304, 316, etc.	HB 200 -	49 - 82	0.002 - 0.003
K	Grey cast irons 250, 300, etc.	HB 250 - 150	197 - 328	0.002 - 0.004
	Ductile cast irons 400-15S, etc.	HB 250 - 150	197 - 328	0.002 - 0.003
S	Titanium alloys Ti-6Al-4V etc	-	49 - 82	0.002 - 0.003
	Heat-resistant alloys Inconel 718 etc	-	33 - 66	0.001 - 0.002
H	Hardened steel SKD61, SKT4 etc H13, etc.	HRC 50 - 40	49 - 82	0.002 - 0.003
	Hardened steel SKD11, SKH etc D2, etc.	HRC 60 - 50	33 - 66	0.001 - 0.002

- When drilling, the step feed (pecking) operation should be applied with the depth of 0.011" - 0.019" per step.
- Apply the same cutting conditions as the VEE type head when conducting shoulder milling or slotting operations.

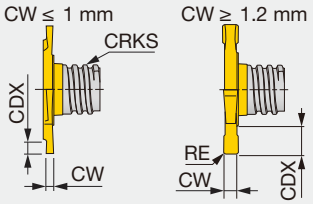
TUNGMEISTER

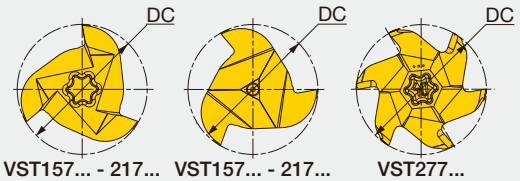
VST**-3...

3 flute, for slotting

Slotting







VST157... - 217... GH730 | VST157... - 217... GH130 | VST277...

CRKS = Connection screw size

Metric	GH730	AH735	NOF	FHA	DC	CW±0.02	RE	CRKS	CDX	Wrench	Torque
VST157W1.50R010-3S06	●		3	0°	15.7	1.5	0.1	S06	2.8	KEYV-177(2) / KEYV-T20(3)	10
VST157W1.57R020-3S06	●		3	0°	15.7	1.57	0.2	S06	2.8	KEYV-177(2) / KEYV-T20(3)	10
VST157W2.00R020-3S06	●		3	0°	15.7	2	0.2	S06	2.8	KEYV-177(2) / KEYV-T20(3)	10
VST157W2.39R020-3S06	●		3	0°	15.7	2.39	0.2	S06	2.8	KEYV-177(2) / KEYV-T20(3)	10
VST157W2.50R020-3S06	●		3	0°	15.7	2.5	0.2	S06	2.8	KEYV-177(2) / KEYV-T20(3)	10
VST157W3.00R020-3S06	●		3	0°	15.7	3	0.2	S06	2.8	KEYV-177(2) / KEYV-T25(3)	10
VST157W3.17R020-3S06			3	0°	15.7	3.17	0.2	S06	2.8	KEYV-177	10
VST177W1.20R005-3S06	●		3	0°	17.7	1.2(1)	0.05	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W1.40R005-3S06	●		3	0°	17.7	1.4(1)	0.05	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W1.50R010-3S06	●		3	0°	17.7	1.5	0.1	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W1.57R020-3S06	●		3	0°	17.7	1.57	0.2	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W1.70R005-3S06	●		3	0°	17.7	1.7(1)	0.05	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W2.00R020-3S06	●		3	0°	17.7	2	0.2	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W2.20R110-3S06			3	0°	17.7	2.20	1.1	S06	3.8	KEYV-177	10
VST177W2.39R020-3S06			3	0°	17.7	2.39	0.2	S06	3.8	KEYV-177	10
VST177W2.50R020-3S06	●		3	0°	17.7	2.5	0.2	S06	3.8	KEYV-177(2) / KEYV-T20(3)	10
VST177W3.00R020-3S06	●	▲	3	0°	17.7	3	0.2	S06	3.8	KEYV-177(2) / KEYV-T25(3)	10
VST177W3.17R020-3S06			3	0°	17.7	3.17	0.2	S06	3.8	KEYV-177	10

(1) CW is based on DIN471 / 472
(2) Applicable for GH130, AH735
(3) Applicable for GH730
Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up
▲ : To be discontinued

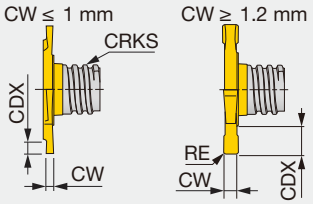
Reference pages: Standard cutting conditions → I043

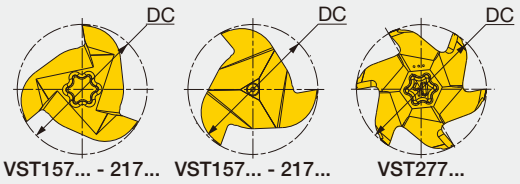
VST**-4/6...

4, 6 flute, for slotting

Slotting







VST157... - 217... GH730 | VST157... - 217... GH130 | VST277...

CRKS = Connection screw size

Metric	GH730	AH735	NOF	FHA	DC	CW±0.02	RE	CRKS	CDX	Wrench	Torque
VST217W0.76R000-4S08	●		4	0°	21.7	0.76(1)	-	S08	1.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W0.86R000-4S08			4	0°	21.7	0.86(1)	-	S08	1.7	KEYV-217	15
VST217W0.96R000-4S08	●		4	0°	21.7	0.96(1)	-	S08	1.9	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.00R005-4S08	●		4	0°	21.7	1	0.05	S08	2	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.20R005-4S08	●		4	0°	21.7	1.2(1)	0.05	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.40R005-4S08	●		4	0°	21.7	1.4(1)	0.05	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.57R000-4S08	●		4	0°	21.7	1.57	-	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.70R010-4S08	●		4	0°	21.7	1.7(1)	0.1	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W1.95R020-4S08	●		4	0°	21.7	1.95(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W2.00R020-4S08	●		4	0°	21.7	2	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W2.25R020-4S08	●		4	0°	21.7	2.25(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W2.39R020-4S08	●		4	0°	21.7	2.39	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W2.50R020-4S08	●	▲	4	0°	21.7	2.5	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W2.75R020-4S08	●		4	0°	21.7	2.75(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T25(3)	15
VST217W3.00R020-4S08	●	▲	4	0°	21.7	3	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W3.17R020-4S08	●		4	0°	21.7	3.17	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W3.25R020-4S08	●		4	0°	21.7	3.25(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W4.00R020-4S08	●		4	0°	21.7	4	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W4.25R020-4S08	●		4	0°	21.7	4.25(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W4.75R020-4S08	●		4	0°	21.7	4.75	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST217W5.25R020-4S08	●		4	0°	21.7	5.25(1)	0.2	S08	4.5	KEYV-217(2) / KEYV-T30L(3)	15
VST277W2.50R020-6S10	●		6	0°	27.7	2.5	0.2	S10	6	KEYV-T40L	28
VST277W5.25R020-6S10	●		6	0°	27.7	5.25(1)	0.2	S10	6	KEYV-T40L	28
VST277W10.0R020-6S10	●		6	0°	27.7	10	0.2	S10	6	KEYV-T40L	28

(1) CW is based on DIN471 / 472
(2) Applicable for GH130, AH735
(3) Applicable for GH730
Torque: Recommended clamping torque: N·m
2 pieces per package

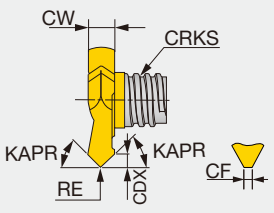
● : Line up
▲ : To be discontinued

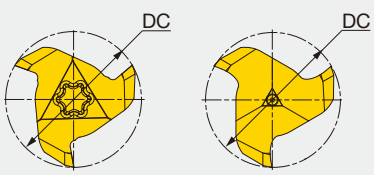
VST**A45...

3, 4 flute, for slotting with 45°chamfer

Slotting







GH730 | GH130

CRKS = Connection screw size

Metric	GH730	NOF	FHA	DC	CW	KAPR	CRKS	CDX	CF	RE	Wrench	Torque
VST177L01.40A45-3S06	●	3	0°	17.7	3.4	45°	S06	1.4	-	0.1	KEYV-177(1) / KEYV-T25(2)	10
VST217L01.70A45-4S08	●	4	0°	21.7	5.5	45°	S08	1.7	1.5	-	KEYV-217(1) / KEYV-T30L(2)	15

(1) Applicable for GH130
(2) Applicable for GH730
Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I043

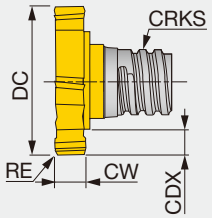
TUNGMEISTER

VTB**-06...

6 flute, for T-slotting

Slotting





CRKS = Connection screw size

Inch	GH730	AH735	GH130	NOF	FHA	DC $^{0}_{-0.002"}$	CW$^{\pm 0.0008"}$	CDX	CRKS	RE	Wrench	Torque
VTB05W125R016-U06S05	●	▲	▲	6	0°	0.500	0.125	0.088	S05	0.016	KEYV-T20	5.16
VTB06W056R016-U06S06	●		▲	6	0°	0.625	0.056	0.125	S06	0.016	KEYV-T20	7.38
VTB06W063R016-U06S06	●		▲	6	0°	0.625	0.063	0.125	S06	0.016	KEYV-T20	7.38
VTB06W068R016-U06S06	●		▲	6	0°	0.625	0.068	0.125	S06	0.016	KEYV-T20	7.38
VTB06W078R016-U06S06	●		▲	6	0°	0.625	0.078	0.125	S06	0.016	KEYV-T20	7.38
VTB06W086R016-U06S06	●		▲	6	0°	0.625	0.086	0.125	S06	0.016	KEYV-T25	7.38
VTB06W105R016-U06S06	●		▲	6	0°	0.625	0.105	0.125	S06	0.016	KEYV-T25	7.38
VTB06W125R016-U06S06	●		▲	6	0°	0.625	0.125	0.125	S06	0.016	KEYV-T25	7.38
VTB06W156R016-U06S06	●		▲	6	0°	0.625	0.156	0.125	S06	0.016	KEYV-T25	7.38
VTB07W156R016-U06S08	●		▲	6	0°	0.750	0.156	0.120	S08	0.016	KEYV-T30L	11.06
VTB07W187R016-U06S08	●		▲	6	0°	0.750	0.187	0.120	S08	0.016	KEYV-T30L	11.06
VTB07W250R016-U06S08	●		▲	6	0°	0.750	0.250	0.120	S08	0.016	KEYV-T30L	11.06
VTB08W187R016-U06S08	●	▲	▲	6	0°	0.875	0.187	0.190	S08	0.015	KEYV-T40L	11.06
VTB08W250R016-U06S08	●		▲	6	0°	0.875	0.250	0.190	S08	0.015	KEYV-T40L	11.06
VTB08W312R016-U06S08	●		▲	6	0°	0.875	0.312	0.190	S08	0.015	KEYV-T40L	11.06
VTB10W187R016-U06S10	●		▲	6	0°	1.000	0.187	0.177	S10	0.015	KEYV-T50L	20.65
VTB10W250R016-U06S10	●		▲	6	0°	1.000	0.250	0.177	S10	0.015	KEYV-T50L	20.65

Metric	GH730	AH735	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW$^{\pm 0.02}$	CDX	CRKS	RE	Wrench	Torque*
VTB135W3.00R04-06S05	●		▲	6	0°	13.5	3	2.65	S05	0.4	KEYV-T20	7
VTB135W4.00R04-06S05	●		▲	6	0°	13.5	4	2.65	S05	0.4	KEYV-T20	7
VTB160W2.00R04-06S06	●		▲	6	0°	16	2	2.9	S06	0.4	KEYV-T20	10
VTB160W3.00R04-06S06	●		▲	6	0°	16	3	2.9	S06	0.4	KEYV-T25	10
VTB160W4.00R04-06S06	●		▲	6	0°	16	4	2.9	S06	0.4	KEYV-T25	10
VTB165W2.00R04-06S06	●		▲	6	0°	16.5	2	3.15	S06	0.4	KEYV-T20	10
VTB165W3.00R04-06S06	●		▲	6	0°	16.5	3	3.15	S06	0.4	KEYV-T25	10
VTB165W4.00R04-06S06	●		▲	6	0°	16.5	4	3.15	S06	0.4	KEYV-T25	10
VTB195W4.00R04-06S08	●		▲	6	0°	19.5	4	3.45	S08	0.4	KEYV-T30L	15
VTB195W5.00R04-06S08	●		▲	6	0°	19.5	5	3.45	S08	0.4	KEYV-T30L	15
VTB195W6.00R04-06S08	●		▲	6	0°	19.5	6	3.45	S08	0.4	KEYV-T30L	15
VTB225W5.00R04-06S08	●		▲	6	0°	22.5	5	4.95	S08	0.4	KEYV-T40L	15
VTB225W6.00R04-06S08	●		▲	6	0°	22.5	6	4.95	S08	0.4	KEYV-T40L	15
VTB225W8.00R04-06S08	●		▲	6	0°	22.5	8	4.95	S08	0.4	KEYV-T40L	15
VTB250W6.00R04-06S08	●		▲	6	0°	25	6	5.9	S08	0.4	KEYV-T50L	15
VTB250W8.00R04-06S08	●		▲	6	0°	25	8	5.9	S08	0.4	KEYV-T50L	15
VTB250W5.00R04-06S10	●		▲	6	0°	25	5	4.3	S10	0.4	KEYV-T50L	28
VTB250W6.00R04-06S10		▲	▲	6	0°	25	6	4.3	S10	0.4	KEYV-T50L	28
VTB250W8.00R04-06S10	●		▲	6	0°	25	8	4.3	S10	0.4	KEYV-T50L	28

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

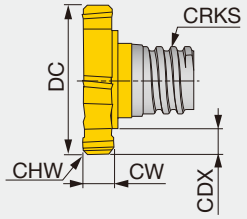
● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → I043

6 flute, for T-slotting with 45°chamfer

Slotting





CRKS = Connection screw size

Inch	GH730	GH130	NOF	FHA	DC $^{0}_{-0.002}$	CW$^{\pm 0.0008}$	CDX	CRKS	CHW	Wrench	Torque
VTB05W062C006-U06S05	●	▲	6	0°	0.500	0.062	0.089	S05	0.006	KEYV-T20	5.16
VTB05W078C006-U06S05	●	▲	6	0°	0.500	0.078	0.089	S05	0.006	KEYV-T20	5.16

Metric	GH730	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW$^{\pm 0.02}$	CDX	CRKS	CHW	Wrench	Torque*
VTB135W2.00C15-06S05	●	▲	6	0°	13.5	2	2.65	S05	0.15	KEYV-T20	7

Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line up
▲ : To be discontinued

STANDARD CUTTING CONDITIONS

Slotting

VST, VTB

ISO	Workpiece material	Hardness	VST		VTB	
			Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	262 - 591	0.002 - 0.006	262 - 591	0.003 - 0.007
P	High carbon steels 4140,etc.	- 300 HB	197 - 394	0.002 - 0.005	197 - 394	0.002 - 0.006
M	Stainless steels 304, 316, etc.	- 200 HB	164 - 394	0.002 - 0.005	164 - 394	0.002 - 0.006
K	Grey cast irons 250, 300, etc.	150 - 250 HB	328 - 656	0.002 - 0.006	328 - 656	0.003 - 0.007
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 656	0.002 - 0.005	328 - 656	0.002 - 0.006
N	Aluminum alloys Si < 13%	-	656 - 1969	0.002 - 0.006	656 - 1969	0.003 - 0.007
N	Aluminum alloys Si ≥13%	-	328 - 984	0.001 - 0.005	328 - 984	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 197	0.002 - 0.003	131 - 197	0.002 - 0.006
S	Heat-resistant alloys Inconel 718, etc.	-	49 - 115	0.001 - 0.004	49 - 115	0.001 - 0.004

Tolerance of tool diameter

Basic dimensions (mm)		Permissible dimensional deviations (μm)						
>	≤	e8	e9	h6	h7	h9	h10	z9
6	10	-25 -47	-25 -61	0 -9	0 -15	0 -36	0 -58	+78 +42
10	14	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+93 +50
14	18	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+103 +60
18	30	-40 -73	-40 -92	0 -13	0 -21	0 -52	0 -84	-

JISB0401-2: 1998 (ISO286-2: 1988) extract

TUNGMEISTER

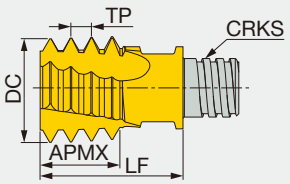
ISO metric (M)

VMT***IS

3 - 6 flute, full profile, for internal thread

Threading





CRKS = Connection screw size

Metric	AH725	TP	Application range	DC	NOF	APMX	LF	CRKS	Wrench	Torque
VMT100L06IS07-4S05	●	0.75	≥ M12	10	4	6	12.8	S05	KEYV-S05	7
VMT100L06IS10-4S05	●	1	≥ M12	10	4	6	12.8	S05	KEYV-S05	7
VMT100L06IS15-4S05	●	1.5	≥ M13	10	4	6	12.8	S05	KEYV-S05	7
VMT120L08IS15-4S06	●	1.5	≥ M16	12	4	7.6	14.3	S06	KEYV-S06	10
VMT120L08IS20-4S06	●	2	≥ M16	12	4	8	14.3	S06	KEYV-S06	10
VMT160L12IS15-6S08	●	1.5	≥ M20	16	6	12	19	S08	KEYV-T30L	15
VMT160L12IS20-5S08	●	2	≥ M19	16	5	12	19	S08	KEYV-T30L	15
VMT154L13IS25-5S08	●	2.5	≥ M20	15.4	5	12.7	20	S08	KEYV-S08	15
VMT160L12IS30-3S08	●	3	≥ M20	16	3	12	19	S08	KEYV-T30L	15

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

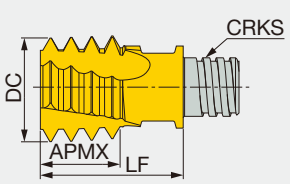
Unified (UN, UNC, UNF, UNEF, UNS)

VMT***UN

3, 4, 5 flute, full profile, for internal thread

Threading





CRKS = Connection screw size

Metric	AH725	TPI	Application range	DC	NOF	APMX	LF	CRKS	Wrench	Torque
VMT100L06UN24-4S05	●	24	≥ 1/2	10	4	5.3	12.8	S05	KEYV-S05	7
VMT100L06UN20-4S05	●	20	≥ 1/2	10	4	5.1	12.8	S05	KEYV-S05	7
VMT120L08UN16-4S06	●	16	≥ 5/8	12	4	8	14.3	S06	KEYV-S06	10
VMT120L10UN14-4S06	●	14	≥ 5/8	12	4	9	14.3	S06	KEYV-T25	10
VMT160L13UN12-5S08	●	12	≥ 13/16	16	5	12.7	19	S08	KEYV-T30L	15
VMT150L13UN10-4S08	●	10	≥ 3/4	15.4	4	12.7	19	S08	KEYV-T30L	15
VMT160L11UN09-3S08	●	9	≥ 7/8	16	3	11.3	19	S08	KEYV-T30L	15
VMT160L13UN08-3S08	●	8	≥ 15/16	16	3	12.7	20	S08	KEYV-S08	15

Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → I046

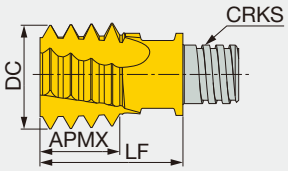
Whitworth (G, Rp, BSP, PF, PS)

VMT***W

4 flute, full profile, for internal/external thread

Threading





CRKS = Connection screw size

Metric	AH725	TPI	Application range	DC	NOF	APMX	LF	CRKS	Wrench	Torque
VMT100L06W19-4S05	●	19	1/4, 3/8	10	4	5.3	12.8	S05	KEYV-S05	7
VMT160L13W14-4S08	●	14	1/2, 5/8, 3/4, 7/8	16	4	12.7	20	S08	KEYV-S08	15
VMT160L11W11-4S08	●	11	≥1	16	4	11.6	19	S08	KEYV-T30L	15

Torque: Recommended clamping torque: N·m
2 pieces per package

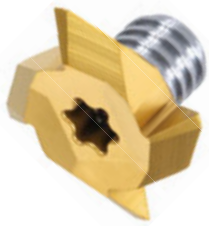
● : Line up

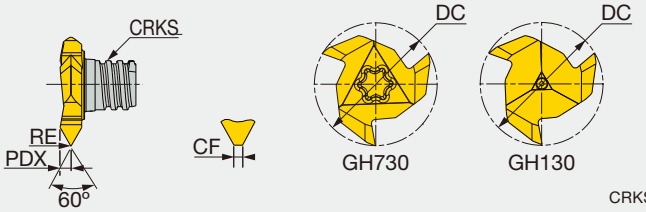
60° partial profile

VTR***IS

3, 4 flute, partial profile, for internal/external thread

Threading





CRKS = Connection screw size

Metric	GH730	GH130	TP TPN	TP TPX	Smallest Possible thread	DC	NOF	RE	CF	PDX	CRKS	Wrench	Torque
VTR160L12IS05-3S06	●	▲	0.5	2	M20	15.7	3	-	0.05	1.4	S06	KEYV-177(1) / KEYV-T25(2)	10
VTR160L12IS15-3S06	●	▲	1.5	2	M22	15.7	3	0.05	-	1.4	S06	KEYV-177(1) / KEYV-T25(2)	10
VTR220L28IS30-4S08	●	▲	3	4.5	M36	21.7	4	0.2	-	2.8	S08	KEYV-217(1) / KEYV-T30L(2)	15

(1) Applicable for GH130
(2) Applicable for GH730
Torque: Recommended clamping torque: N·m
2 pieces per package

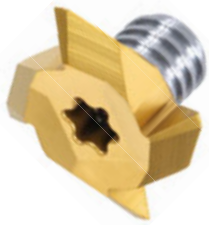
● : Line up
▲ : To be discontinued

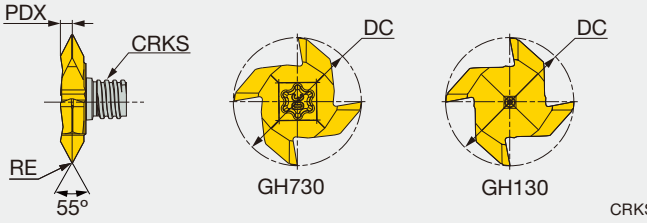
55° partial profile

VTR***W

4 flute, partial profile, for internal/external thread

Threading





CRKS = Connection screw size

Metric	GH730	GH130	TPI TPIN	TPI TPIX	Smallest Possible thread	DC	NOF	RE	PDX	CRKS	Wrench	Torque
VTR220L24W14-4S08	●	▲	14	11	3/4	21.7	4	0.2	2.4	S08	KEYV-217(1) / KEYV-T30L(2)	15

(1) Applicable for GH130
(2) Applicable for GH730
Torque: Recommended clamping torque: N·m
2 pieces per package

● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → I046

STANDARD CUTTING CONDITIONS

Threading

VMT, VTR

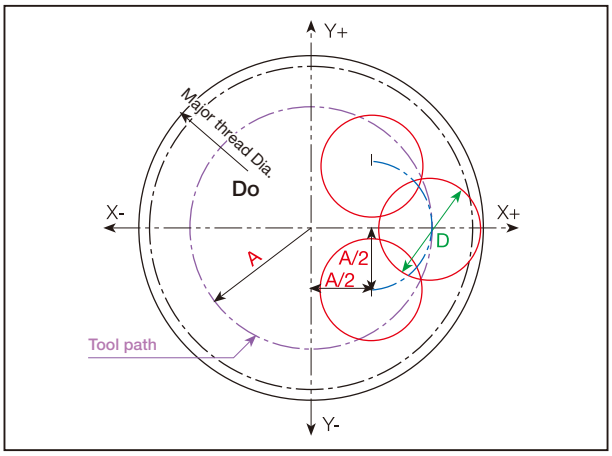
ISO	Material		Condition	Tensile strength [N/mm²]	Hardness HB	Cutting speed (sfm)	Tool dia. (in) / Feed (ipt) ø10 (0.394")	ø12 (0.472")	ø15.4 (0.606"), ø15.7 (0.618"), ø16 (0.630")	ø21.7 (0.787")
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	328 - 820	0.0031	0.0035	0.0047	0.0059
		≥ 0.25 %C	Annealed	650	190	262 - 689	0.0031	0.0035	0.0047	0.0059
		< 0.55 %C	Quenched and tempered	850	250	213 - 558	-	-	-	-
		≥ 0.55 %C	Annealed	750	220	361 - 591	0.0028	0.0031	0.0039	0.0047
			Quenched and tempered	1000	300	312 - 525	0.0028	0.0031	0.0039	0.0047
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	295 - 525	0.002	0.002	0.0028	0.0031
			Quenched and tempered	930	275	213 - 656	0.002	0.002	0.0028	0.0031
				1000	300	230 - 689	0.002	0.002	0.0028	0.0031
				1200	350	312 - 525	0.002	0.002	0.0028	0.0031
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	427 - 558	0.002	0.002	0.0028	0.0031
			Quenched and tempered	1100	325	246 - 328	0.002	0.002	0.0028	0.0031
	Stainless steel and cast steel		Ferritic/martensitic	680	200	361 - 558	0.002	0.002	0.0028	0.0031
			Martensitic	820	240	230 - 509	0.002	0.002	0.0028	0.0031
M	Stainless steel		Annealed	600	180	279 - 328	0.002	0.002	0.0028	0.0031
K	Cast iron nodular (GGG)		Ferritic/martensitic	-	180	394 - 525	0.0031	0.0035	0.0047	0.0059
			Pearlitic	-	260	246 - 525	0.0031	0.0035	0.0047	0.0059
	Gray cast iron (GG)		Ferritic	-	160	230 - 492	0.0031	0.0035	0.0047	0.0059
			Pearlitic	-	250	361 - 459	0.0031	0.0035	0.0047	0.0059
	Malleable cast iron		Ferritic	-	130	394 - 525	0.0031	0.0035	0.0047	0.0059
			Pearlitic	-	230	361 - 459	0.0031	0.0035	0.0083	0.0059
N	Aluminum-wrought alloy		Not cureable	-	60	525 - 984	0.0031	0.0035	0.0047	0.0059
			Cured	-	100	-	-	-	-	-
	Aluminum-cast, alloyed	≤12% Si	Not cureable	-	75	492 - 1148	0.0031	0.0035	0.0047	0.0059
			Cured	-	90	-	-	-	-	-
		>12% Si	High temperature	-	130	328 - 820	0.002	0.002	0.0028	0.0031
	Copper alloys	>1% Pb	Free cutting	-	110	-	-	-	-	-
			Brass	-	90	-	-	-	-	-
			Electrolitic copper	-	100	-	-	-	-	-
	Non-metallic		Duroplastics, fiber plastics	-	-	328 - 1312	0.0043	0.0047	0.0059	0.0071
			Hard rubber	-	-	-	-	-	-	-
S	High temp. alloys	Fe based	Annealed	-	200	-	-	-	-	-
			Cured	-	280	-	-	-	-	-
		Ni or Co based	Annealed	-	250	66 - 262	0.0012	0.0012	0.0016	0.0016
			Cured	-	350	-	-	-	-	-
			Cast	-	320	-	-	-	-	-
	Titanium Ti alloys			RM 400	-	-	-	-		-
			Alpha+beta alloys cured	RM 1050	-	66 - 262	0.0012	0.0012	0.0016	0.0016
H	Hardened steel		Hardened	-	55 HRC	180 - 213	-	-	-	-
			Hardened	-	60 HRC	148 - 180	-	-	-	-
	Chilled cast iron		Cast	-	400	295 - 344	-	-	-	-
	Cast iron		Hardened	-	55 HRC	180 - 213	-	-	-	-

Thread Milling CNC Program for Internal Thread

Right-hand thread (climb milling) from bottom up. Program is based on tool center.
This method of programming needs no tool radius compensation value, other than an offset for wear.

General Program

G90 G00 G54 G43 H1X0 Y0 Z10 S (n : Number of revolutions)
G00 Z-(to thread depth)
G01 G91 G41 D1 X (A/2) Y-(A/2) Z0 F (Center of tool)
G03 X(A/2) Y(A/2) R (A/2) Z(1/8 pitch) F (Cutting edge)
G03 X0 Y0 I -(A) J0 Z (pitch)
G03 X-(A/2) Y(A/2) R (A/2) Z(1/8 pitch)
G01 G40 X -(A/2) Y-(A/2) Z0
G90 X0 Y0 Z0



$$A = \frac{Do - D}{2}$$

A = Radius of tool path
Do = Major thread diameter
D = Cutting diameter

F (Center of tool) = n x *f* x z

F (Cutting edge) = $\frac{Do - D}{Do}$ x n x *f* x z

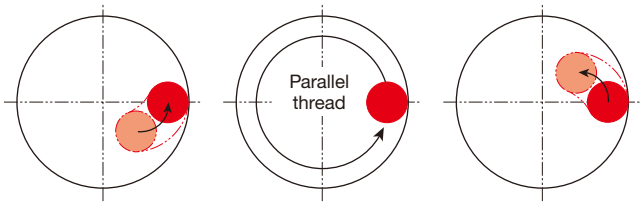
n : Number of revolutions
f : rev / tooth
z : Number of edge

Internal Thread

Example: M20x2.0 **IN-RH** (Thread depth 20 mm)
Tool : **MTEC1010C27 2.0ISO**
(Cutting dia. 10 mm)
A=(**Do**-**D**)/2=(20-10)/2=5
A/2=2.5
(Tool compensation of radius=0)

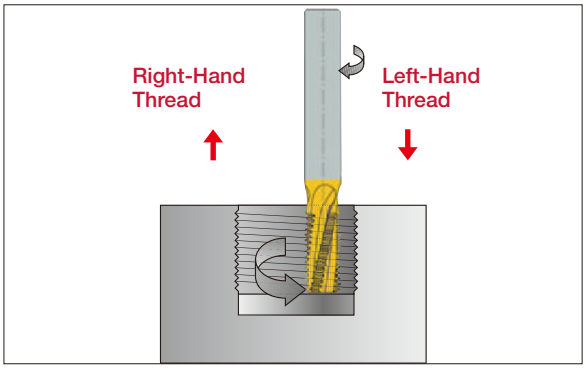
G90 **G0** G54 G43 G17 **H1X0** **Y0** **Z10** S4000
G0 **Z**-20
G01 G91 G41 **D1X** 2.5 **Y**-2.5 **Z0** F840
G03 **X**2.5 **Y**2.5 **R**2.5 **Z**0.25 F420
G03 **X0** **Y0** **I**-5.0 **J0** **Z**2.0
G03 **X**-2.5 **Y**2.5 **R**2.5 **Z**0.25
G01 G40 **X**-2.5 **Y**-2.5 **Z0**
G90 **G0** **X0** **Y0** **Z0**
M30
%

Machining procedure

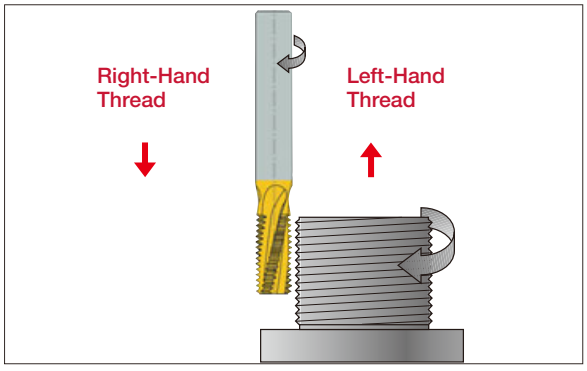


(a) Tool approach (b) Machining thread (c) Tool retraction

Internal Thread



External Thread



A thread milling operation is applicable for thread cutting in non-symmetrical parts utilizing the advantage of helical interpolation programs on modern machining centers.

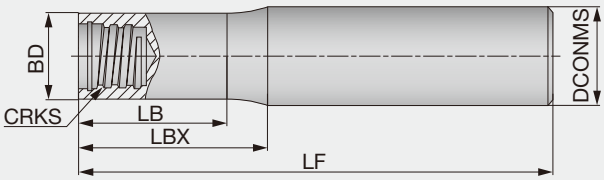
For more details, please check ThreadMilling advisor.

TUNGMEISTER

VSS...

Straight neck and cylindrical shank





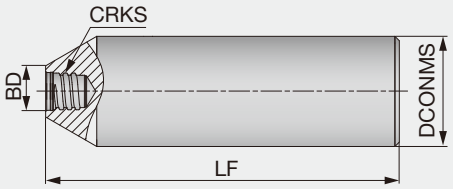
CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS031L250S05US	0.312	0.300	2.500	0.590	0.567	S05	Cylindrical	Steel
VSS031L300S05UC	0.312	0.300	3.000	1.000	0.950	S05	Cylindrical	Carbide
VSS031L350S05UC	0.312	0.300	3.500	1.500	1.450	S05	Cylindrical	Carbide
VSS031L400S05UC	0.312	0.300	4.000	2.000	1.950	S05	Cylindrical	Carbide
VSS031L300S05UW	0.312	0.299	3.000	1.000	0.978	S05	Cylindrical	Tungsten
VSS031L450S05UW	0.312	0.299	4.500	2.000	1.978	S05	Cylindrical	Tungsten
VSS037L300S06US	0.375	0.364	3.000	0.787	0.768	S06	Cylindrical	Steel
VSS037L400S06UC	0.375	0.364	4.000	1.250	1.200	S06	Cylindrical	Carbide
VSS037L475S06UC	0.375	0.364	4.750	2.000	1.950	S06	Cylindrical	Carbide
VSS037L355S06UW	0.375	0.364	3.550	0.750	0.680	S06	Cylindrical	Tungsten
VSS050L350S08US	0.500	0.480	3.540	0.630	0.530	S08	Cylindrical	Steel
VSS050L400S08UC	0.500	0.480	4.000	1.500	1.400	S08	Cylindrical	Carbide
VSS050L550S08UC	0.500	0.480	5.500	2.500	2.450	S08	Cylindrical	Carbide
VSS050L425S08UW	0.500	0.480	4.252	0.630	0.594	S08	Cylindrical	Tungsten
VSS062L400S10US	0.625	0.598	4.000	0.787	0.744	S10	Cylindrical	Steel
VSS062L325S10UC	0.625	0.600	3.250	1.250	1.180	S10	Cylindrical	Carbide
VSS062L450S10UC	0.625	0.600	4.500	2.500	2.430	S10	Cylindrical	Carbide
VSS062L550S10UC	0.625	0.600	5.500	3.500	3.430	S10	Cylindrical	Carbide
VSS062L700S10UC	0.625	0.600	7.000	5.000	4.930	S10	Cylindrical	Carbide
VSS075L500S12US	0.750	0.720	5.000	1.000	0.880	S12	Cylindrical	Steel
VSS075L400S12UC	0.750	0.720	4.000	1.500	1.430	S12	Cylindrical	Carbide
VSS075L550S12UC	0.750	0.720	5.500	3.000	2.930	S12	Cylindrical	Carbide
VSS075L800S12UC	0.750	0.720	8.000	4.500	4.430	S12	Cylindrical	Carbide
VSS100L537S15US	1.000	0.957	5.375	1.375	1.313	S15	Cylindrical	Steel
VSS100L475S15UC	1.000	0.957	4.750	2.375	2.313	S15	Cylindrical	Carbide
VSS100L675S15UC	1.000	0.957	6.750	4.000	3.938	S15	Cylindrical	Carbide
VSS100L1000S15UC	1.000	0.957	10.000	6.000	5.938	S15	Cylindrical	Carbide

VSSD...

High rigidity shank





CRKS = Connection screw size

Metric	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VSSD06L050S04-S	6	5.8	50	S04	Cylindrical	Steel
VSSD06L060S04-C	6	5.8	60	S04	Cylindrical	Carbide
VSSD08L050S04-S	8	5.8	50	S04	Cylindrical	Steel
VSSD08L060S04-C	8	5.8	60	S04	Cylindrical	Carbide
VSSD10L055S05-S	10	7.6	55	S05	Cylindrical	Steel
VSSD12L065S06-S	12	9.6	65	S06	Cylindrical	Steel
VSSD16L065S08-S	16	11.6	65	S08	Cylindrical	Steel
VSSD20L070S10-S	20	15.3	70	S10	Cylindrical	Steel
VSSD25L075S12-S	25	18.3	75	S12	Cylindrical	Steel
VSSD32L100S15-S	32	23.9	100	S15	Cylindrical	Steel
VSSD40L100S21-S	40	30	100	S21	Cylindrical	Steel

VSSD...

Straight neck and cylindrical shank



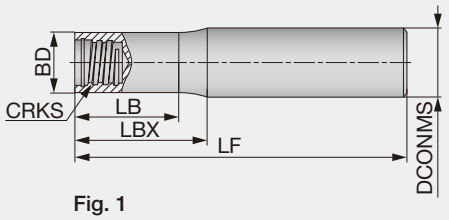


Fig. 1

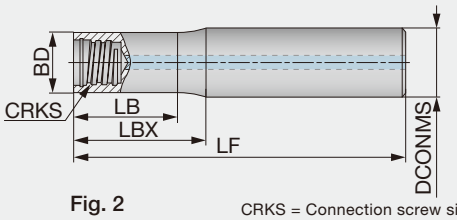


Fig. 2

CRKS = Connection screw size

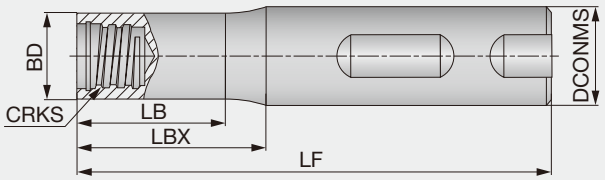
Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material	Fig.
VSSD08L060S05-S	8	7.6	60	15	12.8	S05	Cylindrical	Steel	1
VSSD08L070S05-C	8	7.6	70	20	19	S05	Cylindrical	Carbide	1
VSSD08L090S05-C	8	7.6	90	40	39	S05	Cylindrical	Carbide	1
VSSD08L110S05-C	8	7.6	110	60	59	S05	Cylindrical	Carbide	1
VSSD10L070S06-C	10	9.6	70	20	18.5	S06	Cylindrical	Carbide	1
VSSD10L075S06-S	10	9.6	75	20	19.4	S06	Cylindrical	Steel	1
VSSD10L090S06-C	10	9.6	90	40	38.5	S06	Cylindrical	Carbide	1
VSSD10L110S06-C	10	9.6	110	60	58.5	S06	Cylindrical	Carbide	1
VSSD10L150S06-C	10	9.6	150	100	98.5	S06	Cylindrical	Carbide	1
VSSD12L070S08-C	12	11.5	70	20	17	S08	Cylindrical	Carbide	1
VSSD12L070S08-C-A	12	11.5	70	20	17	S08	Cylindrical	Carbide	2
VSSD12L090S08-C	12	11.5	90	40	37	S08	Cylindrical	Carbide	1
VSSD12L090S08-S	12	11.5	90	16	13.6	S08	Cylindrical	Steel	1
VSSD12L090S08-S-A	12	11.5	90	16	13.6	S08	Cylindrical	Steel	2
VSSD12L090LS08-C-A	12	11.5	90	40	37	S08	Cylindrical	Carbide	2
VSSD12L090LS08-S-A	12	11.5	90	42	37	S08	Cylindrical	Steel	2
VSSD12L110S08-C	12	11.5	110	60	58	S08	Cylindrical	Carbide	1
VSSD12L110S08-C-A	12	11.5	110	60	57	S08	Cylindrical	Carbide	2
VSSD12L130S08-C	12	11.5	130	80	78	S08	Cylindrical	Carbide	1
VSSD12L130S08-C-A	12	11.5	130	80	77	S08	Cylindrical	Carbide	2
VSSD16L090S10-C	16	15.2	90	40	38	S10	Cylindrical	Carbide	1
VSSD16L090S10-C-A	16	15.2	90	40	38	S10	Cylindrical	Carbide	2
VSSD16L100S10-S	16	15.2	100	20	18	S10	Cylindrical	Steel	1
VSSD16L100S10-S-A	16	15.2	100	20	18	S10	Cylindrical	Steel	2
VSSD16L100LS10-S-A	16	15.2	100	42	38	S10	Cylindrical	Steel	2
VSSD16L110S10-C	16	15.2	110	60	58	S10	Cylindrical	Carbide	1
VSSD16L110S10-C-A	16	15.2	110	60	58	S10	Cylindrical	Carbide	2
VSSD16L130S10-C	16	15.2	130	80	78	S10	Cylindrical	Carbide	1
VSSD16L130S10-C-A	16	15.2	130	80	78	S10	Cylindrical	Carbide	2
VSSD16L150S10-C	16	15.2	150	100	98	S10	Cylindrical	Carbide	1
VSSD20L090S12-C	20	18.3	90	40	37	S12	Cylindrical	Carbide	1
VSSD20L120S12-S	20	18.3	120	25	20.5	S12	Cylindrical	Steel	1
VSSD20L130S12-C	20	18.3	130	80	77	S12	Cylindrical	Carbide	1
VSSD20L200S12-C	20	18.3	200	120	117	S12	Cylindrical	Carbide	1
VSSD25L120S15-C	25	23.9	120	60	58	S15	Cylindrical	Carbide	1
VSSD25L135S15-S	25	23.9	135	35	33	S15	Cylindrical	Steel	1
VSSD25L170S15-C	25	23.9	170	100	98	S15	Cylindrical	Carbide	1
VSSD25L250S15-C	25	23.9	250	150	148	S15	Cylindrical	Carbide	1
VSSD32L100S21-S	32	30	100	35	32	S21	Cylindrical	Steel	1
VSSD32L150S21-S	32	30	150	54	50	S21	Cylindrical	Steel	1

TUNGMEISTER

VSSD**-W...

Straight neck and weldon shank





CRKS = Connection screw size

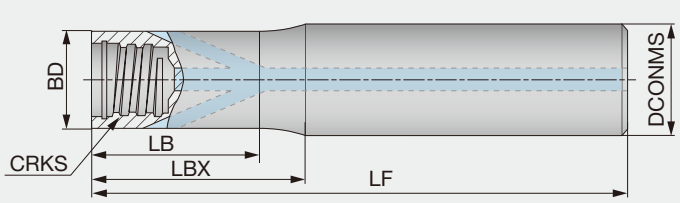
Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS050L218W05US	0.500	0.299	2.185	0.174	-	S05	Weldon	Steel
VSS062L258W06US	0.625	0.366	2.559	0.226	-	S06	Weldon	Steel
VSS062L258W08US	0.625	0.480	2.559	0.125	-	S08	Weldon	Steel
VSS075L275W10US	0.750	0.598	2.756	0.131	-	S10	Weldon	Steel
VSS100L300W12US	1.000	0.720	3.000	0.283	-	S12	Weldon	Steel

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD12L055W05-S	12	7.6	55	3.8	-	S05	Weldon	Steel
VSSD16L065W06-S	16	9.6	65	6	-	S06	Weldon	Steel
VSSD16L065W08-S	16	11.5	65	4	-	S08	Weldon	Steel
VSSD20L070W10-S	20	15.2	70	4	-	S10	Weldon	Steel
VSSD25L075W12-S	25	18.3	75	6	-	S12	Weldon	Steel

VSSD**-W-A...

Straight shank and neck with coolant hole





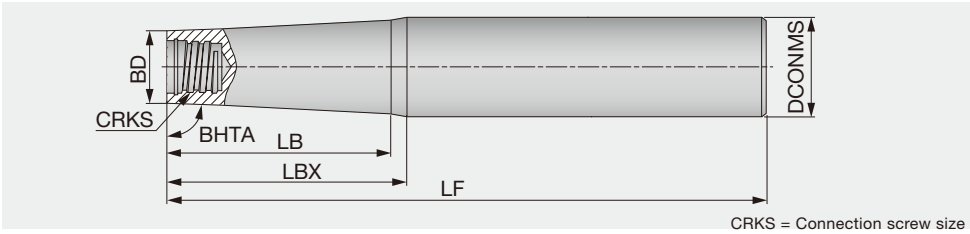
CRKS = Connection screw size

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	Tungsten
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	Tungsten
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	Tungsten
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	Tungsten
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	Tungsten
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	Tungsten
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	Tungsten
VSSD16L070S10-W-A	16	15.2	70	20	18.5	S10	Tungsten
VSSD16L090S10-W-A	16	15.2	90	40	36.5	S10	Tungsten
VSSD16L110S10-W-A	16	15.2	110	60	58.5	S10	Tungsten
VSSD16L130S10-W-A	16	15.2	130	80	78.5	S10	Tungsten
VSSD20L090S12-W-A	20	18.3	90	40	37	S12	Tungsten
VSSD20L130S12-W-A	20	18.3	130	80	77	S12	Tungsten

VTS...

Tapered neck and cylindrical shank





CRKS = Connection screw size

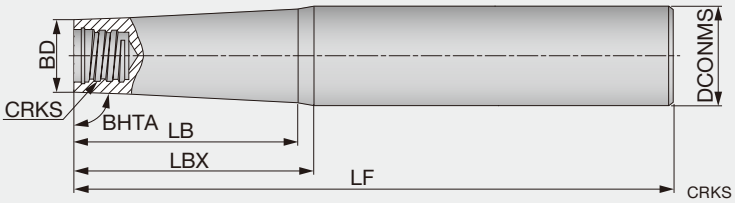
Inch	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTS050L300S05US	85°	0.500	0.300	3.000	1.000	0.930	S05	Steel
VTS050L400S05US	89°	0.500	0.300	4.000	1.500	1.300	S05	Steel
VTS062L500S06US	85°	0.625	0.370	5.000	1.380	1.283	S06	Steel
VTS062L630S06US	89°	0.625	0.364	6.300	2.170	1.750	S06	Steel
VTS062L550S08US	85°	0.625	0.480	5.500	0.870	0.770	S08	Steel
VTS075L650S08US	89°	0.750	0.480	6.500	3.150	2.770	S08	Steel
VTS075L550S10US	85°	0.750	0.598	5.500	0.880	-	S10	Steel
VTS100L670S10US	89°	1.000	0.598	6.700	2.295	-	S10	Steel
VTS075L750S10US	89°	0.750	0.600	7.500	3.150	2.950	S10	Steel
VTS100L630S12US	89°	1.000	0.720	6.300	1.600	-	S12	Steel
VTS100L800S12US	89°	1.000	0.720	8.000	3.750	3.400	S12	Steel
VTS125L600S15US	85°	1.250	0.957	6.000	1.750	1.594	S15	Steel
VTS125L750S12US	89°	1.250	0.720	7.500	3.150	-	S12	Steel
VTS037L350S05UC	89°	0.375	0.300	3.500	1.500	-	S05	Carbide
VTS050L450S05UC	89°	0.500	0.300	4.500	2.500	2.354	S05	Carbide
VTS062L600S05UC	89°	0.625	0.300	6.000	4.000	3.900	S05	Carbide
VTS050L550S06UC	89°	0.500	0.364	5.500	2.500	2.470	S06	Carbide
VTS062L650S06UC	89°	0.625	0.364	6.500	3.500	3.380	S06	Carbide
VTS062L650S08UC	89°	0.625	0.480	6.500	3.500	3.440	S08	Carbide
VTS075L700S08UC	89°	0.750	0.480	7.000	4.000	3.900	S08	Carbide
VTS075L650S10UC	89°	0.750	0.600	6.500	4.000	-	S10	Carbide
VTS075L880S10UC	89°	0.750	0.600	8.800	6.300	6.240	S10	Carbide
VTS100L1000S12UC	89°	1.000	0.720	10.000	5.500	-	S12	Carbide
VTS125L1000S15UC	89°	1.250	0.957	10.000	6.000	-	S15	Carbide
VTS125L1200S15UC	89°	1.250	0.941	12.000	8.000	-	S15	Carbide
VTS075L550S06UW	85°	0.750	0.370	5.500	2.240	-	S06	Tungsten
VTS062L670S06UW	89°	0.625	0.364	6.700	2.180	1.770	S06	Tungsten
VTS075L670S08UW	89°	0.750	0.480	6.700	3.150	2.770	S08	Tungsten

TUNGMEISTER

VTSD...

Taper neck and straight shank





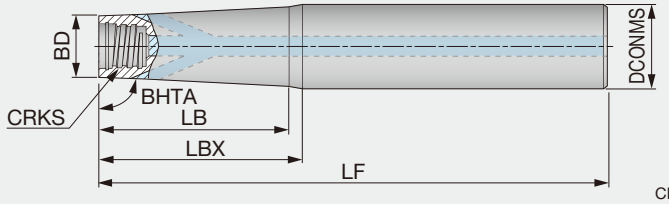
CRKS = Connection screw size

Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTSD08L080S04-S	87.4°	8	5.8	80	24	-	S04	Steel
VTSD12L080S05-S	85°	12	7.6	80	25	-	S05	Steel
VTSD12L100S05-S	89°	12	7.6	100	35	29	S05	Steel
VTSD12L110S05-C	89°	12	7.6	110	60	56	S05	Carbide
VTSD12L130S05-C	89°	12	7.6	130	80	77	S05	Carbide
VTSD16L125S06-S	85°	16	9.6	125	34	31	S06	Steel
VTSD16L130S08-C	89°	16	11.5	130	80	76.5	S08	Carbide
VTSD16L140S08-S	85°	16	11.5	140	22	19	S08	Steel
VTSD16L150S05-C	89°	16	7.6	150	100	91	S05	Carbide
VTSD16L150S06-C	89°	16	9.6	150	100	94.5	S06	Carbide
VTSD16L150S08-C	89°	16	11.5	150	100	98	S08	Carbide
VTSD16L160S06-S	89°	16	9.6	160	55	46.5	S06	Steel
VTSD16L170S06-C	89°	16	9.6	170	120	116.5	S06	Carbide
VTSD20L140S10-S	85°	20	15.2	140	27.5	-	S10	Steel
VTSD20L170S08-C	89°	20	11.5	170	120	112	S08	Carbide
VTSD20L170S08-S	89°	20	11.5	170	80	69.5	S08	Steel
VTSD20L170S10-C	89°	20	15.2	170	120	119	S10	Carbide
VTSD20L190S10-C	89°	20	15.2	190	140	-	S10	Carbide
VTSD20L190S10-S	89°	20	15.2	190	80	73	S10	Steel
VTSD20L210S10-C	89°	20	15.2	210	160	-	S10	Carbide
VTSD25L160S12-S	85°	25	18.3	160	40	-	S12	Steel
VTSD25L170S10-S	85°	25	15.2	170	56	-	S10	Steel
VTSD25L180S12-C	89°	25	18.3	180	120	115	S12	Carbide
VTSD25L210S12-S	89°	25	18.3	210	100	94.5	S12	Steel
VTSD25L250S12-C	89°	25	18.3	250	140	136.5	S12	Carbide
VTSD32L155S15-S	85°	32	23.9	155	45	-	S15	Steel
VTSD32L190S12-S	85°	32	18.3	190	80	-	S12	Steel
VTSD32L220S15-S	88°	32	23.9	220	100	-	S15	Steel
VTSD32L250S15-C	89°	32	23.9	250	150	145	S15	Carbide
VTSD32L300S15-C	89°	32	23.9	300	200	198	S15	Carbide
VTSD40L150S21-S	85°	40	30	150	57	-	S21	Steel

VTSD**-W-A...

Straight shank and taper neck with coolant hole





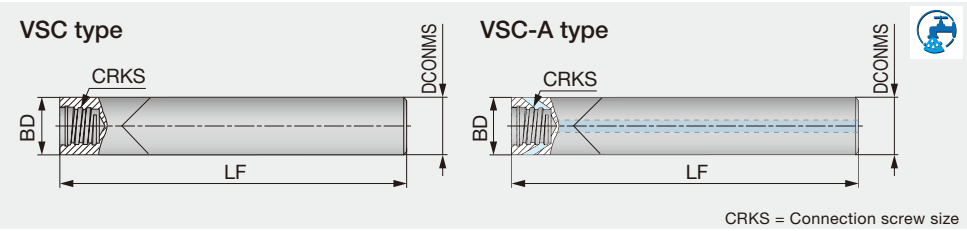
CRKS = Connection screw size

Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Tungsten

VSC...

Straight shank for VST type slotting heads





CRKS = Connection screw size

Inch	DCONMS	BD	LF	CRKS	Air hole	Shank material
VSC095L080S06-C	0.375	0.375	3.150	S06	without	Carbide
VSC127L120S08-C-A	0.500	0.500	4.724	S08	with	Carbide

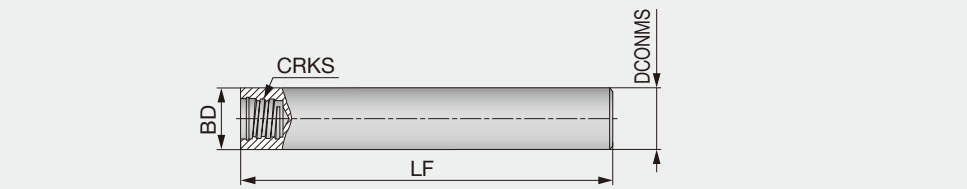
Metric	DCONMS	BD	LF	CRKS	Air hole	Shank material
VSC100L100S06-C	10	10	100	S06	without	Carbide
VSC120L100S08-C-A	12	12	100	S08	with	Carbide

For VSC-C type shank, just VST slotting head is recommended.
If other heads are used on the VSC-C shank, the depth of cut must be smaller than the max. *ap* in each head.
The VSC-C type shank does not have external clearance, so the shank may interfere with the work piece.

VSTD...

Straight shank for VTB type T-slotting heads





CRKS = Connection screw size

Inch	DCONMS	BD	LF	CRKS	Shank material
VST031L275S05US	0.312	0.312	2.750	S05	Steel
VST037L325S06US	0.375	0.375	3.250	S06	Steel
VST050L375S08US	0.500	0.500	3.750	S08	Steel
VST062L400S10US	0.625	0.625	4.000	S10	Steel

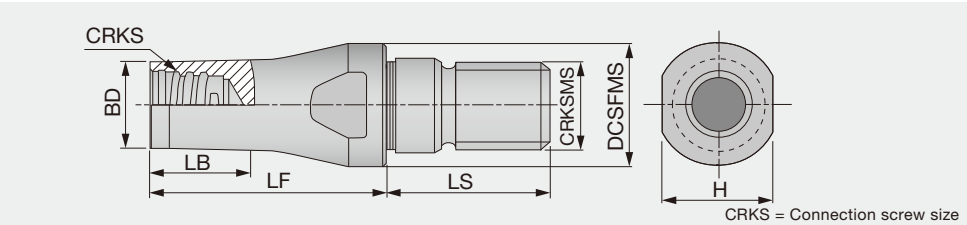
Metric	DCONMS	BD	LF	CRKS	Shank material
VSTD06L070S04-S	6	6	70	S04	Steel
VSTD08L070S05-S	8	8	70	S05	Steel
VSTD10L080S06-S	10	10	80	S06	Steel
VSTD12L090S08-S	12	12	90	S08	Steel
VSTD16L100S10-S	16	16	100	S10	Steel

For VSTD type shank, just VTB T-slotting head is recommended.
If other heads are used on the VSTD shank, the depth of cut must be smaller than the max. *ap* in each head.
The VSTD type shank does not have external clearance, so the shank may interfere with the work piece.

VAD**-M...

TungFlex conversion adaptor





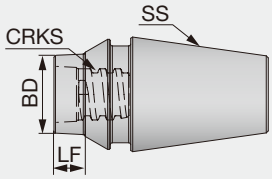
CRKS = Connection screw size

Metric	BD	DCSFMS	LF	LS	LB	CRKS	CRKSMS	H	Shank material
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11	Steel
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11	Steel
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13	Steel
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11	Steel
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75	Steel
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75	Steel

VER...

Straight neck with ER11/16 collet





CRKS = Connection screw size

Metric	SS	BD	LF	CRKS	Shank material
VER11AL006S04-S	ER11	5.8	6	S04	Steel
VER11AL006S05-S	ER11	7.9	6	S05	Steel
VER11AL020S05-S	ER11	7.9	20	S05	Steel
VER16AL012S05-S	ER16	7.9	12	S05	Steel
VER16AL020S05-S	ER16	7.9	20	S05	Steel
VER16AL010S06-S	ER16	9.9	10	S06	Steel
VER16AL020S06-S	ER16	9.9	20	S06	Steel
VER16AL006S08-S	ER16	11.6	6	S08	Steel
VER16AL020S08-S	ER16	11.6	20	S08	Steel

WRENCHES

Appearance	Designation	Connection screw size	Torque (lb·ft)	Torque (N·m)	Applicable head
	KEYV-S05	S04	2.95	4	Square Ball Radius Drilling Chamfering Counterboring Barrel Lens Bull nose Indexable modular head
		S05	5.16	7	
	KEYV-S06	S06	7.38	10	
	KEYV-S08	S08	11.06	15	
	KEYV-S10	S10	20.65	28	
	KEYV-S12	S12	20.65	28	
	KEYV-W20	S15	29.50	40	
	KS-24	S21	81.13	110	Square
	KEYV-177	S06	7.38	10	Slotting VST Threading VTR
	KEYV-217	S08	11.06	15	
	KEYV-T20	S05	5.16	7	Slotting VTB Face mill
		S06	7.38	10	
	KEYV-T25	S06	7.38	10	
	KEYV-T30L	S08	11.06	15	
	KEYV-T40L	S08	11.06	15	Slotting VST, VTB Face mill
		S10	20.65	28	
	KEYV-T50L	S08	11.06	15	Slotting VTB Face mill
		S10	20.65	28	

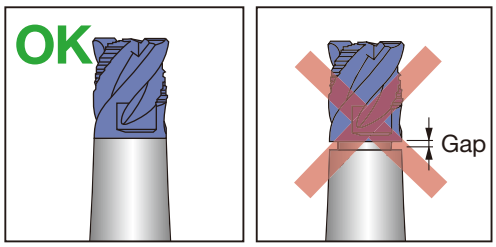
Note: Wrenches are sold separately.

TORQUE WRENCHES

Appearance		Designation	Stock	Connection screw size	TM Head description	Torque (lb·ft)	Torque (N·m)
Handle		TORQUEWRENCH5-50NM9x12	●	-	-	-	5 - 50
Open wrenches for cylindrical heads		TM-WRENCH-6-05	●	S05	VEH, VED, VEE, VEE-I, VEE-R, VEE-C, VEE-A, VFX**-04/06, VRD, VBD-BG, VBE-BG, VBE-BGA, VDP, VDS, VCA, VBO, VBL, VBN, HPAV06-S	5.16	7
		TM-WRENCH-8-06	●	S06		7.38	10
		TM-WRENCH-10-08	●	S08		11.06	15
		TM-WRENCH-13-10	●	S10		20.65	28
		TM-WRENCH-16-12	●	S12		20.65	28
		TM-WRENCH-20-15	●	S15		29.50	40
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	●	S05	VRB, VRC, VFX**-02, VBB-BM, VBB-BG, VBB-SG, VCP, VGC, VCW, VCR	5.16	7
		TM-WRENCH-5E-06	●	S06		7.38	10
		TM-WRENCH-7E-08	●	S08		11.06	15
		TM-WRENCH-8E-10	●	S10		20.65	28
		TM-WRENCH-9E-12	●	S12		20.65	28
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	●	-	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	●	S05, S06	VFM120, VTB135, VTB160W2.00, VTB165W2.00	5.16, 7.38	7, 10
		BIT-SOCKET-T25-DRIVE	●	S06	VFM160, VTB160W3.00, VTB160W4.00, VTB165W3.00, VTB165W4.00	7.38	10
		BIT-SOCKET-T30-DRIVE	●	S08	VTB195	11.06	15
		BIT-SOCKET-T40-DRIVE	●	S08, S10	VFM200, VST277, VTB225	11.06, 20.65	15, 28
		BIT-SOCKET-T50-DRIVE	●	S08, S10	VFM250, VTB250	11.06, 20.65	15, 28

CAUTIONARY POINTS IN USE

· The cutting heads specified by Tungaloy must be used. Avoid using alternate heads that are not Tungaloy products as this will damage the shank and can cause severe accident or injury.
· Before setting the head, clean the connection screw with an air blast or a wiping cloth to remove chips and other foreign matter that may remain.
· Do not apply the lubricant to the connection screw.
· Please use the correct wrench with the correct cutting head. Tighten the head slowly until the face of the head contacts the shank. (Please refer to the picture shown on the right.) Do not re-tightening or over-tightening. Excessive tightening may cause the cutting head to break.
· Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.

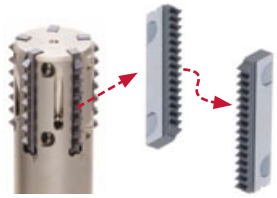


THREADMILLING



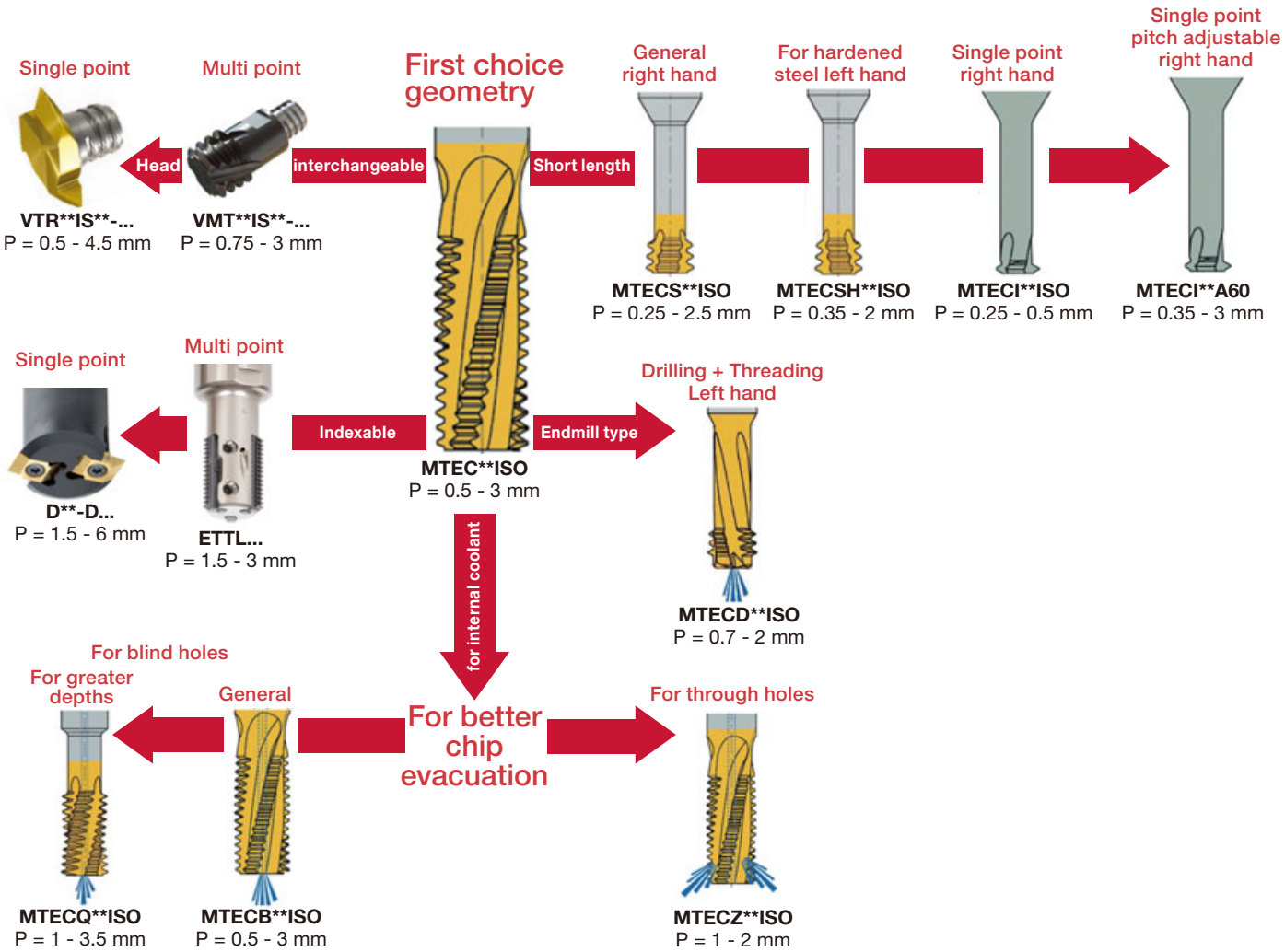
Highly economical tool design

Cost reduction



2-corner double sided inserts

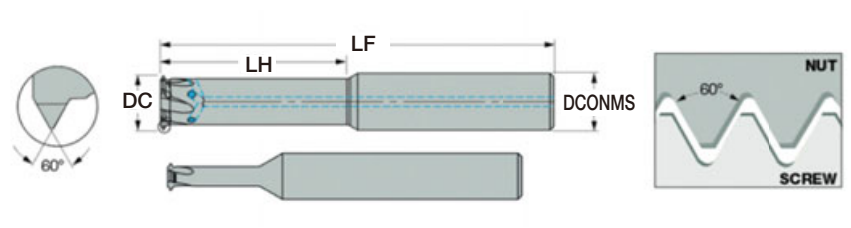
Tool selection guide for internal ISO metric threads



Reference pages: I057 - I079

ISO metric (M), Unified (UN, UNC, UNF, UNFE, UNS)

MTECI-A60



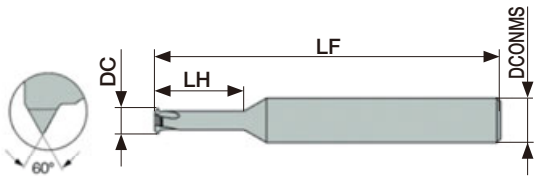
Designation	ISO Metric					Unified					DCONMS (mm)	DC (mm)	NOF	LH (mm)	LF (mm)	Coolant hole	Grade
	Internal			External		Internal			External								
	Pitch (mm)		Application range	Pitch (mm)		TPI		Application range	TPI								
	min.	max.		min.	max.	min.	max.		min.	max.							
MTECI03019C5A60	0.35	0.6	≥M2.5x0.35 ≥M2.5x0.4 ≥M2.5x0.45 ≥M3x0.5 ≥M3x0.6	0.35	0.6	40	72	≥#8-48UN ≥#8-44UN ≥#8-40UN ≥#8-36UN ≥#8-48UN ≥#10-28UN ≥#10-24UN	40	72	3	1.9	3	5.2	39	Without	AH710
MTECI06032C9A60	0.5	1.0	≥M4x0.5 ≥M4x0.6 ≥M4x0.7 ≥M4.5x0.75 ≥M4.5x0.8 ≥M5x1	0.5	1.0	24	48	≥#3-72UN ≥#3-64UN ≥#3-56UN ≥#3-48UN ≥#4-44UN ≥#4-40UN	24	48	6	3.2	3	9.5	57	Without	AH710
MTECI0604C12A60	0.5	1.0	≥M5x0.5 ≥M5x0.6 ≥M5x0.7 ≥M5x0.75 ≥M5x0.8 ≥M6x1	0.5	1.0	24	48	≥#10-48UN ≥#10-44UN ≥#10-40UN ≥#10-36UN ≥#12-32UN ≥#12-28UN ≥#12-24UN	24	48	6	4	3	12.5	58	Without	AH710
MTECI0605D20A60	0.5	0.8	≥M6	0.4	0.8	28	56	≥M1/4	32	64	6	5	4	20	58	With	AH725
MTECI0808D28A60	0.5	0.8	≥M9	0.4	0.8	28	56	≥M3/8	32	64	8	8	4	28	64	With	AH725
MTECI0808D30A60	1.0	1.75	≥M10	0.8	1.5	14	28	≥M7/16	16	32	8	8	4	30	64	With	AH725
MTECI1010D35A60	1.0	1.75	≥M12	0.8	1.5	14	28	≥M1/2	16	32	10	10	4	35	73	With	AH725
MTECI1212E40A60	2.0	3.0	≥M16	1.75	2.5	8	13	≥M11/16	10	15	12	12	5	40	84	With	AH725
MTECI1616E50A60	2.0	3.0	≥M20	1.75	2.5	8	13	≥M13/16	10	15	16	16	5	50	101	With	AH725

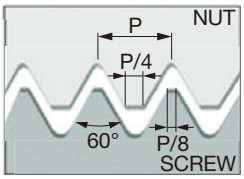
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD
ISO metric (M)

MTECI-ISO

Solid carbide internal threading endmill, for ISO metric profile

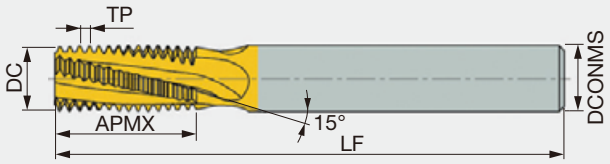


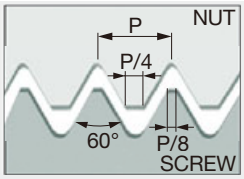


Metric	Pitch	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECI03007C30.25ISO	0.25	≥M1	6	0.72	3	3.6	39	Without	AH710
MTECI03009C40.25ISO	0.25	≥M1.2	6	0.9	3	4.3	39	Without	AH710
MTECI03011C50.3ISO	0.3	≥M1.4	6	1.05	3	5.0	39	Without	AH710
MTECI03012C60.35ISO	0.35	≥M1.6	6	1.2	3	5.7	39	Without	AH710
MTECI03016C70.4ISO	0.4	≥M2	6	1.55	3	7.1	39	Without	AH710
MTECI03024C100.5ISO	0.5	≥M3	6	2.37	3	10.6	39	Without	AH710

MTEC-ISO

Solid carbide internal threading endmill, for ISO metric profile



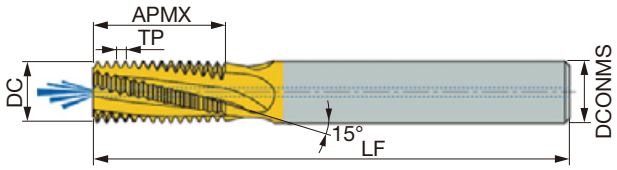


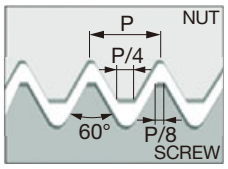
Metric	TP	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC06022C50.5ISO	0.5	≥ M3	6	2.2	3	5.3	58	Without	AH725
MTEC06038C100.5ISO	0.5	≥ M5	6	3.8	3	10.3	58	Without	AH725
MTEC06031C70.7ISO	0.7	≥ M4	6	3.1	3	7.4	58	Without	AH725
MTEC06045C100.75ISO	0.75	≥ M6	6	4.5	3	10	58	Without	AH725
MTEC06036C90.8ISO	0.8	≥ M5	6	3.6	3	9.2	58	Without	AH725
MTEC0604C101.0ISO	1	≥ M6	6	4	3	10.5	58	Without	AH725
MTEC0604C141.0ISO	1	≥ M6	6	4	3	14.5	58	Without	AH725
MTEC0606C121.0ISO	1	≥ M9	6	6	3	12.5	58	Without	AH725
MTEC0808D161.0ISO	1	≥ M10	8	8	4	16.5	64	Without	AH725
MTEC0605C141.25ISO	1.25	≥ M8	6	5	3	14.4	58	Without	AH725
MTEC0605C191.25ISO	1.25	≥ M8	6	5	3	19.4	58	Without	AH725
MTEC0807C171.5ISO	1.5	≥ M10	8	7	3	17.3	64	Without	AH725
MTEC0807C241.5ISO	1.5	≥ M10	8	7	3	24.8	76	Without	AH725
MTEC1010D211.5ISO	1.5	≥ M14	10	10	4	21.8	73	Without	AH725
MTEC1616F331.5ISO	1.5	≥ M20	16	16	6	33.8	105	Without	AH725
MTEC0808C201.75ISO	1.75	≥ M12	8	8	3	20.1	64	Without	AH725
MTEC0808C281.75ISO	1.75	≥ M12	8	8	3	28.9	76	Without	AH725
MTEC1010C272.0ISO	2	≥ M14	10	10	3	27	73	Without	AH725
MTEC1010C392.0ISO	2	≥ M14	10	10	3	39	105	Without	AH725
MTEC1212D272.0ISO	2	≥ M18	12	12	4	27	84	Without	AH725
MTEC2020F412.0ISO	2	≥ M24	20	20	6	41	105	Without	AH725
MTEC1414D332.5ISO	2.5	≥ M20	14	14	4	33.8	84	Without	AH725
MTEC1414D482.5ISO	2.5	≥ M20	14	14	4	48.8	105	Without	AH725
MTEC1616C403.0ISO	3	≥ M24	16	16	3	40.5	105	Without	AH725
MTEC1616C583.0ISO	3	≥ M24	16	16	3	58.5	120	Without	AH725

Reference pages: Standard cutting conditions → I070 - I072

MTECB-ISO

Solid carbide internal threading endmill, with coolant hole, for ISO metric profile





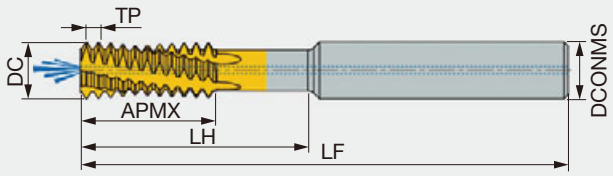
Metric	TP	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06038C100.5ISO	0.5	≥ M5	6	3.8	3	10.3	58	With	AH725
MTECB06031C70.7ISO	0.7	≥ M4	6	3.1	3	7.4	58	With	AH725
MTECB06045C100.75ISO	0.75	≥ M6	6	4.5	3	10.1	58	With	AH725
MTECB1010D240.75ISO	0.75	≥ M12	10	10	4	24.4	73	With	AH725
MTECB06038C90.8ISO	0.8	≥ M5	6	3.8	3	9.2	58	With	AH725
MTECB06046C101.0ISO	1	≥ M6	6	4.6	3	10.5	58	With	AH725
MTECB06046C141.0ISO	1	≥ M6	6	4.6	3	14.5	58	With	AH725
MTECB0606C121.0ISO	1	≥ M9	6	6	3	12.5	58	With	AH725
MTECB0808D161.0ISO	1	≥ M10	8	8	4	16.5	64	With	AH725
MTECB1010D241.0ISO	1	≥ M12	10	10	4	24.5	73	With	AH725
MTECB0606C141.25ISO	1.25	≥ M8	6	6	3	14.4	58	With	AH725
MTECB0606C191.25ISO	1.25	≥ M8	6	6	3	19.4	58	With	AH725
MTECB08078C171.5ISO	1.5	≥ M10	8	7.8	3	17	64	With	AH725
MTECB08078C241.5ISO	1.5	≥ M10	8	7.8	3	24.8	76	With	AH725
MTECB1010D211.5ISO	1.5	≥ M14	10	10	4	21.8	73	With	AH725
MTECB1212D261.5ISO	1.5	≥ M16	12	12	4	26.3	84	With	AH725
MTECB1616F331.5ISO	1.5	≥ M20	16	16	6	33.8	105	With	AH725
MTECB1009C201.75ISO	1.75	≥ M12	10	9	3	20.1	73	With	AH725
MTECB1009C281.75ISO	1.75	≥ M12	10	9	3	28.9	73	With	AH725
MTECB1010C272.0ISO	2	≥ M14	10	10	3	27	73	With	AH725
MTECB12118D272.0ISO	2	≥ M16	12	11.8	4	27	84	With	AH725
MTECB12118D392.0ISO	2	≥ M16	12	11.8	4	39	105	With	AH725
MTECB1615E332.5ISO	2.5	≥ M20	16	15	5	33.8	105	With	AH725
MTECB1615E482.5ISO	2.5	≥ M20	16	15	5	48.8	105	With	AH725
MTECB2018D583.0ISO	3	≥ M24	20	18	4	58.5	120	With	AH725

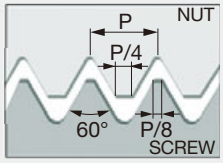
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD

MTECQ-ISO

Solid carbide deep internal threading endmill, with internal coolant hole, for ISO metric profile

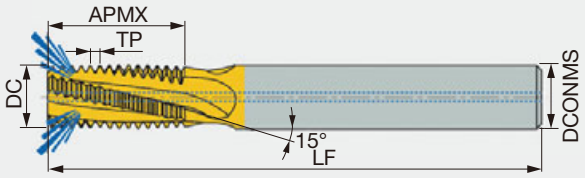


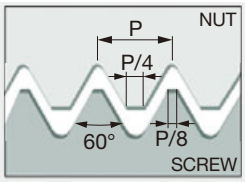


Metric	TP	Application range	DCONMS	DC	NOF	APMX	LH	LF	Coolant hole	Grade
MTECQ1212D381.0ISO	1	≥M14	12	12	4	21	38	84	With	AH725
MTECQ1010D301.5ISO	1.5	≥M13	10	10	4	18	30	73	With	AH725
MTECQ2020F562.0ISO	2	≥M24	20	20	6	34	56	105	With	AH725
MTECQ2020D453.5ISO	3.5	≥M26	20	20	4	28	45.5	105	With	AH725

MTECZ-ISO

Solid carbide internal threading endmill for through hole, with coolant hole in the flute, for ISO metric profile





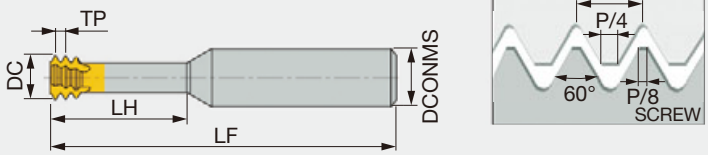
Metric	TP	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ06048C101.0ISO	1	≥ M6	6	4.8	3	10.5	58	With	AH725
MTECZ0808D161.0ISO	1	≥ M10	8	8	4	16.5	64	With	AH725
MTECZ0606C141.25ISO	1.25	≥ M8	6	6	3	14.4	58	With	AH725
MTECZ0606C191.25ISO	1.25	≥ M8	6	6	3	19.4	58	With	AH725
MTECZ08078C171.5ISO	1.5	≥ M10	8	7.8	3	17	64	With	AH725
MTECZ1010D211.5ISO	1.5	≥ M14	10	10	4	21.8	73	With	AH725
MTECZ1212D261.5ISO	1.5	≥ M16	12	12	4	26.3	84	With	AH725
MTECZ1616E331.5ISO	1.5	≥ M20	16	16	5	33.8	101	With	AH725
MTECZ1009C281.75ISO	1.75	≥ M12	10	9	3	28.9	73	With	AH725
MTECZ1010C272.0ISO	2	≥ M14	10	10	3	27	73	With	AH725
MTECZ12118D272.0ISO	2	≥ M16	12	11.8	4	27	84	With	AH725

2
3
4
5
6 or more

Reference pages: Standard cutting conditions → I070 - I072

MTECS-ISO

Small diameter solid carbide internal threading endmill, short edge type, for ISO metric profile



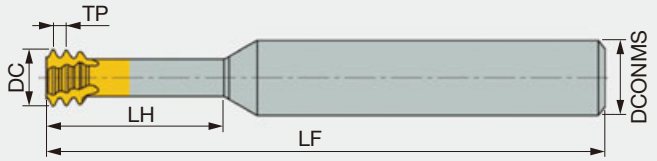
Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03007C20.25ISO	0.25	≥M1	3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2	3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4	3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH725
MTECS03016C60.4ISO	0.4	≥M2	3	1.53	3	6	39	Without	AH725
MTECS06016C40.4ISO	0.4	≥M2	6	1.53	3	4.5	58	Without	AH725
MTECS03017C70.45ISO	0.45	≥M2.2	3	1.65	3	7	39	Without	AH725
MTECS06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH725
MTECS0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH725
MTECS0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH725
MTECS06024C60.5ISO	0.5	≥M3	6	2.37	3	6.5	58	Without	AH725
MTECS06024C90.5ISO	0.5	≥M3	6	2.37	3	9.5	58	Without	AH725
MTECS06024C90.5ISOL	0.5	≥M3	6	2.37	3	9.5	105	Without	AH725
MTECS03024C120.5ISO	0.5	≥M3	3	2.4	3	12.5	39	Without	AH725
MTECS03024C150.5ISO	0.5	≥M3	3	2.4	3	15.5	39	Without	AH725
MTECS06054D200.5ISO	0.5	≥M6	6	5.35	4	20	58	Without	AH725
MTECS06028C100.6ISO	0.6	≥M3.5	6	2.75	3	10.5	58	Without	AH725
MTECS06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH725
MTECS06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH725
MTECS06031C120.7ISOL	0.7	≥M4	6	3.1	3	12.5	105	Without	AH725
MTECS06031C160.7ISO	0.7	≥M4	6	3.1	3	16.7	58	Without	AH725
MTECS06031C90.7ISO	0.7	≥M4	6	3.1	3	9	58	Without	AH725
MTECS0808D250.75ISO	0.75	≥M10	8	8	4	25	64	Without	AH725
MTECS06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH725
MTECS06038C160.8ISO	0.8	≥M5	6	3.8	3	16	58	Without	AH725
MTECS06038C160.8ISOL	0.8	≥M5	6	3.8	3	16	105	Without	AH725
MTECS06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH725
MTECS06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH725
MTECS06047C201.0ISOL	1	≥M6	6	4.65	3	20	105	Without	AH725
MTECS0606C181.25ISO	1.25	≥M8	6	6	3	18	58	Without	AH725
MTECS0606C241.25ISO	1.25	≥M8	6	6	3	24	58	Without	AH725
MTECS08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH725
MTECS08078C311.5ISO	1.5	≥M10	8	7.8	3	31.5	64	Without	AH725
MTECS1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH725
MTECS12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH725
MTECS12118D502.0ISO	2	≥M16	12	11.8	4	50	105	Without	AH725
MTECS1615E432.5ISO	2.5	≥M20	16	15	5	43	100	Without	AH725

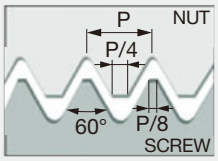
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD

MTECSH-ISO

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for ISO metric profile

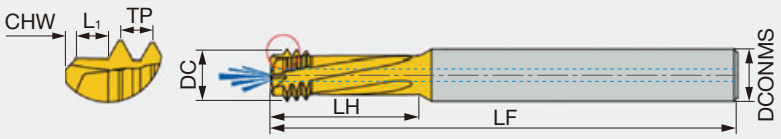


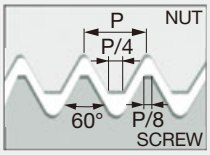


Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH750
MTECSH03016C60.4ISO	0.4	≥M2	3	1.55	3	6	39	Without	AH750
MTECSH06016C40.4ISO	0.4	≥M2	6	1.55	3	4.5	58	Without	AH750
MTECSH06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH750
MTECSH0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH750
MTECSH0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH750
MTECSH06024C60.5ISO	0.5	≥M3	6	2.35	3	6.5	58	Without	AH750
MTECSH06024C90.5ISO	0.5	≥M3	6	2.35	3	9.5	58	Without	AH750
MTECSH06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH750
MTECSH06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH750
MTECSH06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH750
MTECSH06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH750
MTECSH06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH750
MTECSH0606C181.25ISO	1.25	≥M8	6	5.95	3	18	58	Without	AH750
MTECSH0606C241.25ISO	1.25	≥M8	6	5.95	3	24	58	Without	AH750
MTECSH08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH750
MTECSH1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH750
MTECSH12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH750

MTECD-ISO

Small diameter solid carbide endmill for internal threading, drilling, and chamfering, short edge type, left hand cutting, for ISO metric profile

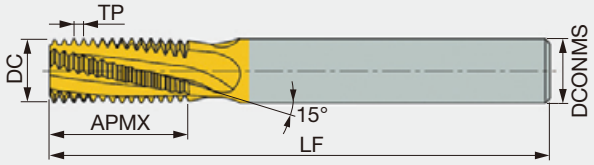


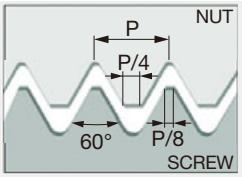


Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	CHW	L1	Coolant hole	Grade
MTECD06032C110.7ISO	0.7	M4	6	3.15	3	11.6	58	0.2	0.7	Without	AH725
MTECD0604C140.8ISO	0.8	M5	6	4	3	14.4	58	0.3	0.8	Without	AH725
MTECD08047C141.0ISO	1	M6-M7	8	4.7	3	14	64	0.4	1	With	AH725
MTECD08061D181.25ISO	1.25	M8-M9	8	6.1	4	18	64	0.5	1.3	With	AH725
MTECD08078D231.5ISO	1.5	M10-M12	8	7.8	4	23	64	0.6	1.5	With	AH725
MTECD1009D261.75ISO	1.75	M12-M14	10	9	4	26	73	0.6	1.8	With	AH725
MTECD12118D352.0ISO	2	M16-M19	12	11.8	4	35	84	0.6	2	With	AH725

MTECE-ISO

Solid carbide external threading endmill, for ISO metric profile



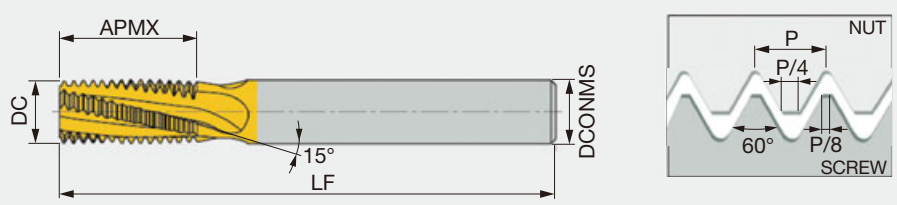


Metric	TP	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D161.0ISO	1	10	10	4	16.5	73	Without	AH725
MTECE1010D161.25ISO	1.25	10	10	4	16.9	73	Without	AH725
MTECE1010D151.5ISO	1.5	10	10	4	15.8	73	Without	AH725
MTECE1212D201.5ISO	1.5	12	12	4	20.3	84	Without	AH725
MTECE1212D201.75ISO	1.75	12	12	4	20.1	84	Without	AH725
MTECE1212D212.0ISO	2	12	12	4	21	84	Without	AH725

Unified (UN, UNC, UNF, UNFE, UNS)

MTEC-UN

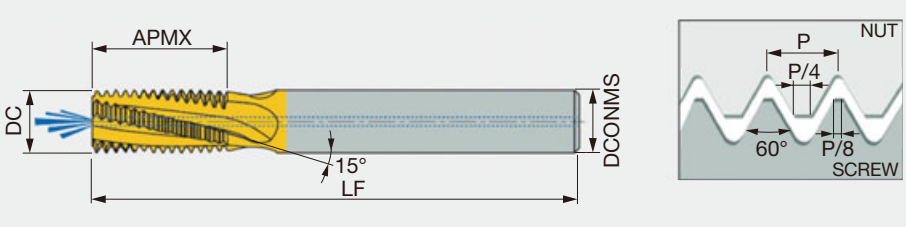
Solid carbide internal threading endmill, for UN profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC06032C632UN	32	≤ #8 (0.164)	6	3.2	3	6.8	58	Without	AH725
MTEC0604C1128UN	28	≤ 1/4	6	4	3	11.3	58	Without	AH725
MTEC0606C1428UN	28	≤ 5/16	6	6	3	14.5	58	Without	AH725
MTEC0605C1424UN	24	≤ 5/16	6	5	3	14.3	58	Without	AH725
MTEC0807C2124UN	24	≤ 3/8	8	7	3	20	64	Without	AH725
MTEC06045C1220UN	20	≤ 1/4	6	4.5	3	12.1	58	Without	AH725
MTEC0807C2120UN	20	≤ 7/16	8	7	3	20	64	Without	AH725
MTEC1212E2720UN	20	≤ 11/16	12	12	5	27.3	84	Without	AH725
MTEC0605C1418UN	18	≤ 5/16	6	5	3	14.8	58	Without	AH725
MTEC1010D2618UN	18	≤ 9/16	10	10	4	26.1	73	Without	AH725
MTEC0606C1616UN	16	≤ 3/8	6	6	3	16.7	58	Without	AH725
MTEC1212D3116UN	16	≤ 5/8	12	12	4	30	84	Without	AH725
MTEC1615E3714UN	14	≤ 13/16	16	15	5	37.2	105	Without	AH725
MTEC0808C2213UN	13	≤ 1/2	8	8	3	22.5	64	Without	AH725
MTEC1010C2612UN	12	≤ 9/16	10	10	3	26.5	73	Without	AH725
MTEC1616E4112UN	12	≤ 13/16	16	16	5	41.3	105	Without	AH725
MTEC1010C2811UN	11	≤ 5/8	10	10	3	28.9	73	Without	AH725
MTEC1212C3410UN	10	≤ 11/16	12	12	3	34.3	84	Without	AH725
MTEC1615C389UN	9	≤ 7/8	16	15	3	38.1	105	Without	AH725
MTEC1616C428UN	8	≤ 15/16	16	16	3	42.9	105	Without	AH725

MTECB-UN

Solid carbide internal threading endmill, with coolant hole, for UN profile



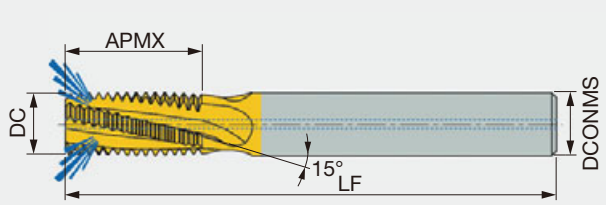
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06032C632UN	32	≥ #8 (0.164)	6	3.2	3	6.8	58	With	AH725
MTECB0606C1432UN	32	≥ 5/16	6	6	3	16	58	With	AH725
MTECB0605C1128UN	28	≥ 1/4	6	5	3	11.3	58	With	AH725
MTECB08066C1424UN	24	≥ 5/16	8	6.6	3	14.3	64	With	AH725
MTECB0808D2124UN	24	≥ 3/8	8	8	4	20.6	64	With	AH725
MTECB0808C2120UN	20	≥ 7/16	8	8	3	21	64	With	AH725
MTECB1010D2220UN	20	≥ 1/2	10	10	4	22.3	73	With	AH725
MTECB06056C1418UN	18	≥ 5/16	6	5.6	3	14.8	58	With	AH725
MTECB12113D2618UN	18	≥ 9/16	12	11.3	4	26.1	84	With	AH725
MTECB08067C1616UN	16	≥ 3/8	8	6.7	3	16.7	64	With	AH725
MTECB1212D3116UN	16	≥ 5/8	12	12	4	31	84	With	AH725
MTECB1616E3714UN	14	≥ 13/16	16	16	5	37.2	105	With	AH725
MTECB10092C2213UN	13	≥ 1/2	10	9.2	3	22.5	73	With	AH725
MTECB12114C2811UN	11	≥ 5/8	12	11.4	3	28.9	84	With	AH725
MTECB16144D3410UN	10	≥ 3/4	16	14.4	4	34.3	105	With	AH725
MTECB20195D428UN	8	≥ 1	20	19.5	4	42.9	105	With	AH725

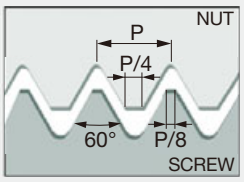
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD

MTECZ-UN

Solid carbide internal threading endmill, with coolant hole in the flute, for UN profile

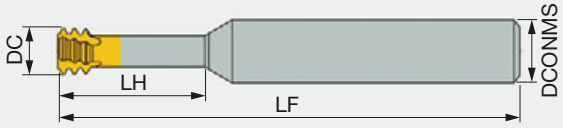


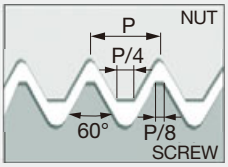


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ1010D2220UN	20	≥ 1/2	10	10	4	22.3	73	With	AH725
MTECZ12113D2618UN	18	≥ 9/16	12	11.3	4	26.1	84	With	AH725
MTECZ08067C1616UN	16	≥ 3/8	8	6.7	3	16.7	64	With	AH725
MTECZ16144D3410UN	10	≥ 3/4	16	14.4	4	34.3	101	With	AH725

MTECS-UN

Small diameter solid carbide internal threading endmill, short edge type, for UN profile



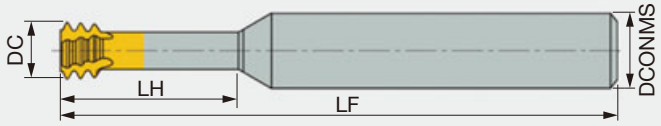


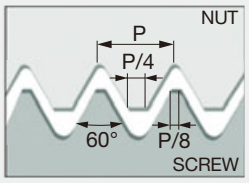
Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03012C880UN	80	≤ #0 (0.060)	3	1.15	3	8	39	Without	AH725
MTECS03015C672UN	72	≤ #1 (0.073)	3	1.45	3	6	39	Without	AH725
MTECS06016C656UN	56	≤ #2 (0.086)	6	1.65	3	6.6	58	Without	AH725
MTECS06016C456UN	56	≤ #2 (0.086)	6	1.65	3	4.4	58	Without	AH725
MTECS06019C548UN	48	≤ #3 (0.099)	6	1.9	3	5.2	58	Without	AH725
MTECS03021C1240UN	40	≤ #4 (0.112)	3	2.1	3	12	39	Without	AH725
MTECS06021C840UN	40	≤ #4 (0.112)	6	2.1	3	8	58	Without	AH725
MTECS06021C640UN	40	≤ #4 (0.112)	6	2.1	3	6.3	58	Without	AH725
MTECS06024C940UN	40	≤ #5 (0.125)	6	2.45	3	9.6	58	Without	AH725
MTECS06033C936UN	36	≤ #8 (0.164)	6	3.3	3	9	58	Without	AH725
MTECS06025C732UN	32	≤ #6 (0.138)	6	2.55	3	7.1	58	Without	AH725
MTECS06025C1032UN	32	≤ #6 (0.138)	6	2.55	3	10.5	58	Without	AH725
MTECS06032C932UN	32	≤ #8 (0.164)	6	3.2	3	9.5	58	Without	AH725
MTECS06032C1232UN	32	≤ #8 (0.164)	6	3.2	3	12.5	58	Without	AH725
MTECS06037C1032UN	32	≤ #10 (0.190)	6	3.7	3	10.5	58	Without	AH725
MTECS06037C1532UN	32	≤ #10 (0.190)	6	3.7	3	15	58	Without	AH725
MTECS0605C1428UN	28	≤ 1/4	6	5	3	14.5	58	Without	AH725
MTECS0605C1928UN	28	≤ 1/4	6	5	3	19	58	Without	AH725
MTECS08066C1724UN	24	≤ 5/16	8	6.6	3	17	64	Without	AH725
MTECS08066C2424UN	24	≤ 5/16	8	6.6	3	24	64	Without	AH725
MTECS06047C1420UN	20	≤ 1/4	6	4.75	3	14	58	Without	AH725
MTECS06047C1920UN	20	≤ 1/4	6	4.75	3	19	58	Without	AH725
MTECS06047C1920UN-L	20	≤ 1/4	6	4.75	3	19	105	Without	AH725
MTECS0808C2520UN	20	≤ 7/16	8	8	3	25	64	Without	AH725
MTECS0606C1718UN	18	≤ 5/16	6	6	3	17	58	Without	AH725
MTECS0606C2318UN	18	≤ 5/16	6	6	3	23	58	Without	AH725
MTECS1212D3518UN	18	≤ 5/8	12	12	4	35	84	Without	AH725
MTECS08067C2216UN	16	≤ 3/8	8	6.7	3	22	64	Without	AH725
MTECS08067C3016UN	16	≤ 3/8	8	6.7	3	30.2	64	Without	AH725
MTECS08077C2514UN	14	≤ 7/16	8	7.7	3	25	64	Without	AH725
MTECS10092C2713UN	13	≤ 1/2	10	9.2	3	27.5	73	Without	AH725
MTECS12114C3411UN	11	≤ 5/8	12	11.4	3	34.5	84	Without	AH725
MTECS12114C5011UN	11	≤ 5/8	12	11.4	3	50	105	Without	AH725

Reference pages: Standard cutting conditions → I070 - I072

MTECSH-UN

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for UN profile, for hardened steel

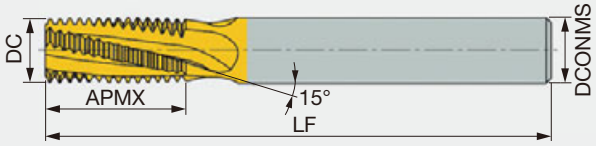


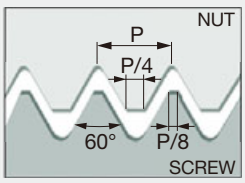


Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH06012C480UN	80	≥ #0 (0.060)	6	1.15	3	4	58	Without	AH725
MTECSH06016C656UN	56	≥ #2 (0.086)	6	1.65	3	6.6	58	Without	AH725
MTECSH06019C548UN	48	≥ #3 (0.099)	6	1.9	3	5.2	58	Without	AH725
MTECSH06021C640UN	40	≥ #4 (0.112)	6	2.1	3	6.3	58	Without	AH725
MTECSH06021C840UN	40	≥ #4 (0.112)	6	2.1	3	8	58	Without	AH725
MTECSH06024C740UN	40	≥ #5 (0.125)	6	2.45	3	7	58	Without	AH725
MTECSH06024C940UN	40	≥ #5 (0.125)	6	2.45	3	9.6	58	Without	AH725
MTECSH06025C1032UN	32	≥ #6 (0.138)	6	2.55	3	10.5	58	Without	AH725
MTECSH06032C932UN	32	≥ #8 (0.164)	6	3.2	3	9.5	58	Without	AH725
MTECSH06037C1032UN	32	≥ #10 (0.190)	6	3.7	3	10.5	58	Without	AH725
MTECSH06037C1532UN	32	≥ #10 (0.190)	6	3.7	3	15	58	Without	AH725
MTECSH06042C1128UN	28	≥ #12 (0.216)	6	4.2	3	11	58	Without	AH725
MTECSH0605C1428UN	28	≥ 1/4	6	5	3	14.5	58	Without	AH725
MTECSH06035C1024UN	24	≥ #10 (0.190)	6	3.5	3	10.6	58	Without	AH725
MTECSH08066C1724UN	24	≥ 5/16	8	6.6	3	17	64	Without	AH725
MTECSH08066C2424UN	24	≥ 5/16	8	6.6	3	24	64	Without	AH725
MTECSH06047C1920UN	20	≥ 1/4	6	4.75	3	19	58	Without	AH725
MTECSH0808C2520UN	20	≥ 7/16	8	8	3	25	64	Without	AH725
MTECSH0606C1718UN	18	≥ 5/16	6	6	3	17	58	Without	AH725
MTECSH0606C2318UN	18	≥ 5/16	6	6	3	23	58	Without	AH725
MTECSH08067C2216UN	16	≥ 3/8	8	6.7	3	22	64	Without	AH725
MTECSH08077C2514UN	14	≥ 7/16	8	7.7	3	25	64	Without	AH725
MTECSH10092C2713UN	13	≥ 1/2	10	9.2	3	27.5	73	Without	AH725
MTECSH12114C3411UN	11	≥ 5/8	12	11.4	3	34.5	84	Without	AH725

MTEC E-UN

Solid carbide external threading endmill, for UN profile





Metric	TPI	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D1624UN	24	10	10	4	16.4	73	Without	AH725
MTECE1212E2120UN	20	12	12	5	21	84	Without	AH725

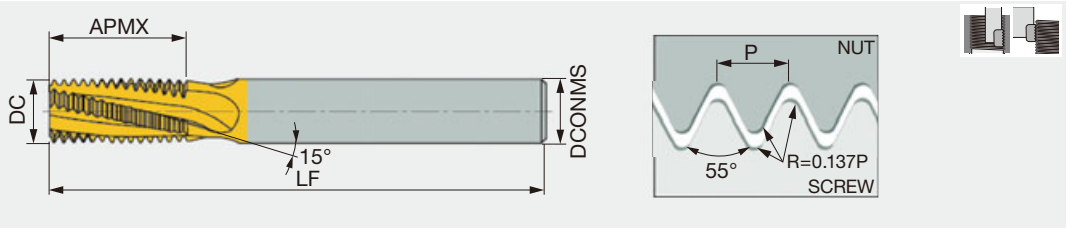
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD

Whitworth parallel pipe thread (G, Rp, BSP, PF, PS)

MTEC-W

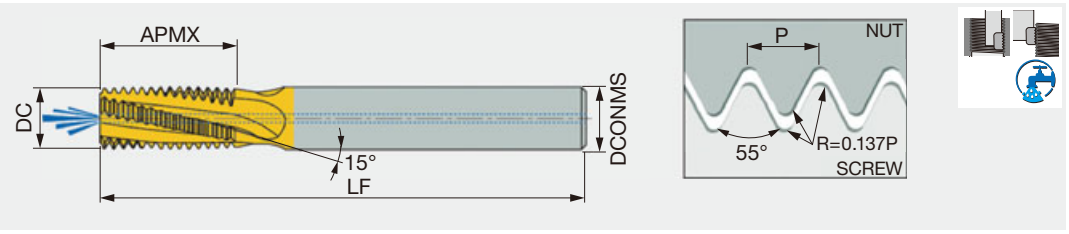
Solid carbide internal and external threading endmill, for G, BSP profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928W	28	1/16, 1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419W	19	1/4, 3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914W	14	1/2, 5/8, 3/4, 7/8	12	12	4	19.3	84	Without	AH725
MTEC1212D2614W	14	1/2, 5/8, 3/4, 7/8	12	12	4	26.3	84	Without	AH725
MTEC1212C2411W	11	≥ 1	12	12	3	24.2	84	Without	AH725
MTEC1616D3811W	11	≥ 1	16	16	4	38.1	105	Without	AH725

MTECB-W

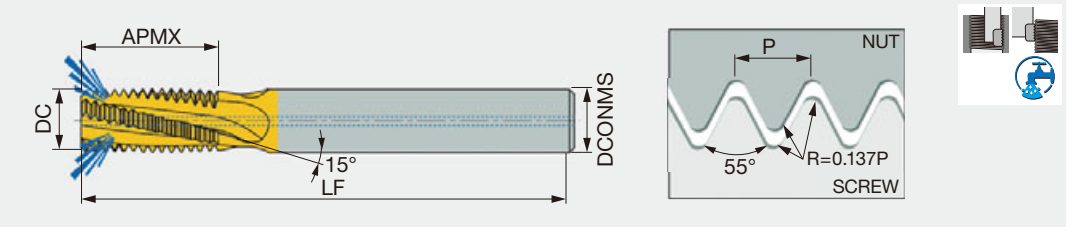
Solid carbide internal and external threading endmill, with coolant hole, for G, BSP profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08078C1428W	28	1/8	8	7.8	3	14.1	64	Without	AH725
MTECB1010D1619W	19	1/4, 3/8	10	10	4	16.7	73	Without	AH725
MTECB1616E2614W	14	1/2, 5/8, 3/4, 7/8	16	16	5	26.3	105	Without	AH725
MTECB1616D3811W	11	≥ 1	16	16	4	38.1	105	Without	AH725
MTECB2020E4711W	11	≥ 1	20	20	5	47.3	105	Without	AH725

MTECZ-W

Solid carbide internal and external threading endmill for through hole, with coolant hole, for G, BSP profile

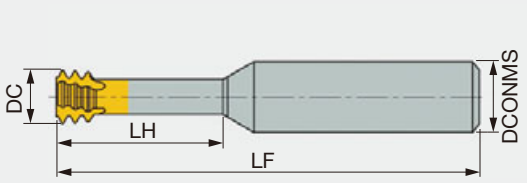


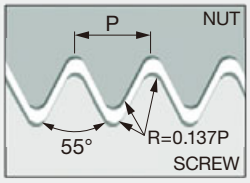
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECZ1010D1619W	19	1/4, 3/8	10	10	4	16.7	73	With	AH725
MTECZ1616E2614W	14	1/2, 5/8, 3/4, 7/8	16	16	5	26.3	101	With	AH725

Reference pages: Standard cutting conditions → I070 - I072

MTECS-W

Solid carbide internal and external threading endmill, short edge type, for G, BSP profile





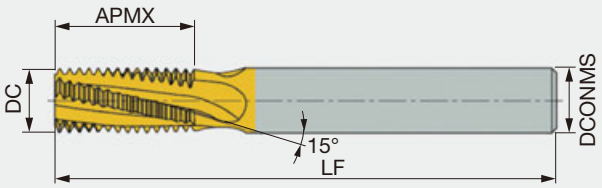


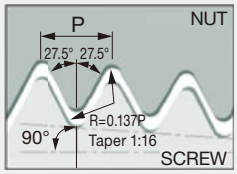
Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4, 3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2, 5/8, 3/4, 7/8	12	12	4	37	84	Without	AH725

Tapered pipe thread (R, Rc, RT, BSPT)

MTEC-BSPT

Solid carbide internal and external threading endmill. for R, RC, BSPT profile







Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928BSPT	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419BSPT	19	1/4, 3/4	8	8	3	14	64	Without	AH725
MTEC1212D1914BSPT	14	1/2, 7/8	12	12	4	19.1	84	Without	AH725
MTEC1616D2811BSPT (1)	11	1, 1 1/4, 1 1/2, 2, 2 1/2	16	16	4	28.9	105	Without	AH725

(1) When the hole depth to be threaded exceeds APMX, use ETTL025M022W25.0F043R03-RT instead.

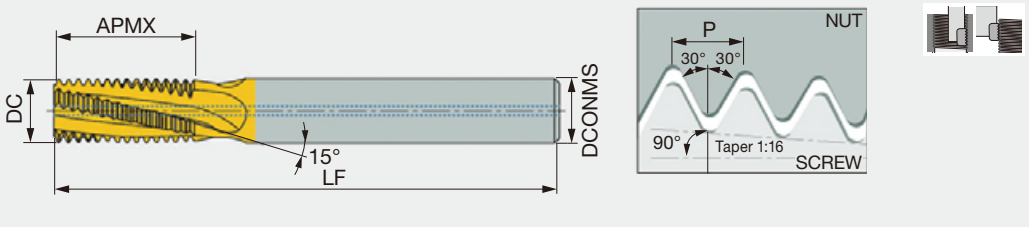
Reference pages: Standard cutting conditions → I070 - I072

SOLIDTHREAD

NPT

MTEC-NPT

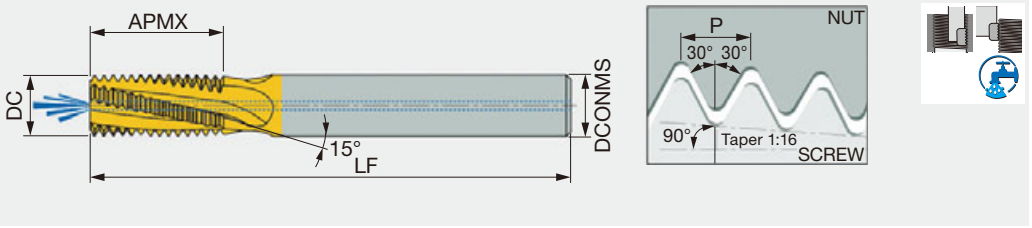
Solid carbide internal and external threading endmill. for NPT profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C927NPT	27	1/16, 1/8	6	6	3	9.9	58	Without	AH725
MTEC0808C1418NPT	18	1/4, 3/8	8	8	3	14.8	64	Without	AH725
MTEC1212D2014NPT	14	1/2, 3/4	12	12	4	20.9	84	Without	AH725
MTEC1616D2711.5NPT	11.5	1, 1 1/4, 1 1/2, 2	16	16	4	27.6	105	Without	AH725
MTEC2020D398NPT (1)	8	2 1/2 - 6	20	20	4	39.7	105	Without	AH725

MTECB-NPT

Solid carbide internal and external threading endmill, with coolant hole, for NPT profile

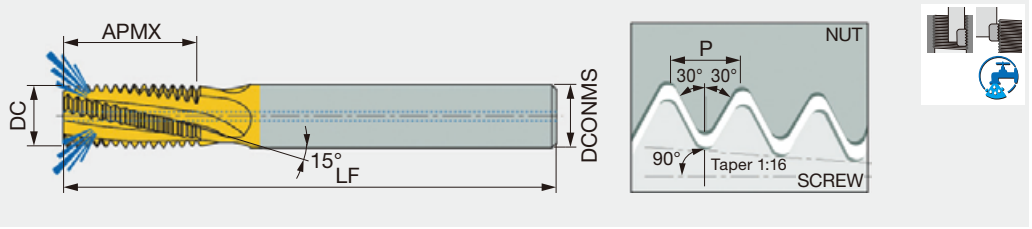


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08076C1027NPT	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECB1010D1618NPT	18	1/4, 3/8	10	10	4	16.2	73	With	AH725
MTECB16155D2214NPT	14	1/2, 3/4	16	15.5	4	22.7	105	With	AH725

NPTF

MTECZ-NPTF

Solid carbide internal and external threading endmill for through hole, with coolant hole in the flute, for NPTF profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08076C1027NPTF	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECZ1010D1618NPTF	18	1/4, 3/8	10	10	4	16.2	73	With	AH725

Reference pages: Standard cutting conditions → I070 - I072

MJ

MTECS-MJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for MJ profile

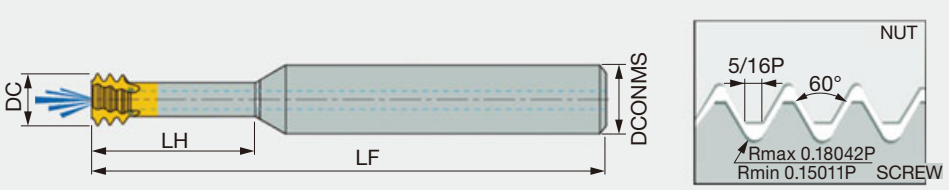


Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06032C100.7MJ	0.7	≥ 4	6	3.2	3	10	58	Without	AH725
MTECS06039C120.8MJ	0.8	≥ 5	6	3.9	3	12.5	58	Without	AH725
MTECS06048C151.0MJ	1	≥ 6	6	4.8	3	15	58	Without	AH725
MTECS08061C201.25MJ	1.25	≥ 8	8	6.1	3	20	64	With	AH725
MTECS0808C251.5MJ	1.5	≥ 10	8	8	3	25	64	With	AH725
MTECS10092C301.75MJ	1.75	≥ 12	10	9.2	3	30	73	With	AH725
MTECS1010C352.0MJ	2	≥ 14	10	10	3	35	73	With	AH725

UNJ (UNJ, UNJC, UNJF, UNJEF)

MTECS-UNJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for UNJ profile



Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06033C1032UNJ	32	≥ #8	6	3.3	3	10.5	58	Without	AH725
MTECS08051C1628UNJ	28	≥ 1/4	8	5.1	3	16	64	With	AH725
MTECS08067C2024UNJ	24	≥ 5/16	8	6.7	3	20	64	With	AH725
MTECS06049C1620UNJ	20	≥ 1/4	6	4.9	3	16	58	Without	AH725
MTECS0808C2820UNJ	20	≥ 7/16	8	8	3	28	64	With	AH725
MTECS08061C2018UNJ	18	≥ 5/16	8	6.15	3	20	64	With	AH725
MTECS08069C2416UNJ	16	≥ 3/8	8	6.9	3	24	64	With	AH725
MTECS10094C2713UNJ	13	≥ 1/2	10	9.4	3	27.5	73	With	AH725

Reference pages: Standard cutting conditions → I070 - I072

THREADMILLING

STANDARD CUTTING CONDITIONS

ISO	Material		Condition	Tensile strength [N/mm²]	Hardness HB	Cutting speed (sfm) AH725
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	328 - 820
		≥ 0.25 %C	Annealed	650	190	262 - 689
		< 0.55 %C	Quenched and tempered	850	250	213 - 558
		≥ 0.55 %C	Annealed	750	220	361 - 591
			Quenched and tempered	1000	300	312 - 525
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	295 - 525
			Quenched and tempered	930	275	213 - 656
				1000	300	230 - 689
				1200	350	312 - 525
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	427 - 558
			Quenched and tempered	1100	325	246 - 328
	Stainless steel and cast steel		Ferritic/martensitic	680	200	361 - 558
			Martensitic	820	240	230 - 509
M	Stainless steel		Annealed	600	180	279 - 328
K	Cast iron nodular (GGG)		Ferritic/martensitic	-	180	394 - 525
			Pearlitic	-	260	246 - 525
	Gray cast iron (GG)		Ferritic	-	160	230 - 492
			Pearlitic	-	250	361 - 459
	Malleable cast iron		Ferritic	-	130	394 - 525
			Pearlitic	-	230	361 - 459
N	Aluminum- wrought alloy		Not cureable	-	60	525 - 984
			Cured	-	100	-
	Aluminum-cast, alloyed	≤12% Si	Not cureable	-	75	492 - 1148
			Cured	-	90	-
		>12% Si	High temperature	-	130	328 - 820
	Copper alloys	>1% Pb	Free cutting	-	110	-
			Brass	-	90	-
			Electrolitic copper	-	100	-
	Non-metallic		Duroplastics, fiber plastics	-	-	328 - 1312
			Hard rubber	-	-	-
S	High temp. alloys	Fe based	Annealed	-	200	-
			Cured	-	280	-
		Ni or Co based	Annealed	-	250	66 - 262
			Cured	-	350	-
			Cast	-	320	-
	Titanium Ti alloys			RM 400	-	-
			Alpha+beta alloys cured	RM 1050	-	66 - 262
H	Hardened steel		Hardened	-	55 HRC	180 - 213
			Hardened	-	60 HRC	148 - 180
	Chilled cast iron		Cast	-	400	295 - 344
	Cast iron		Hardened	-	55 HRC	180 - 213

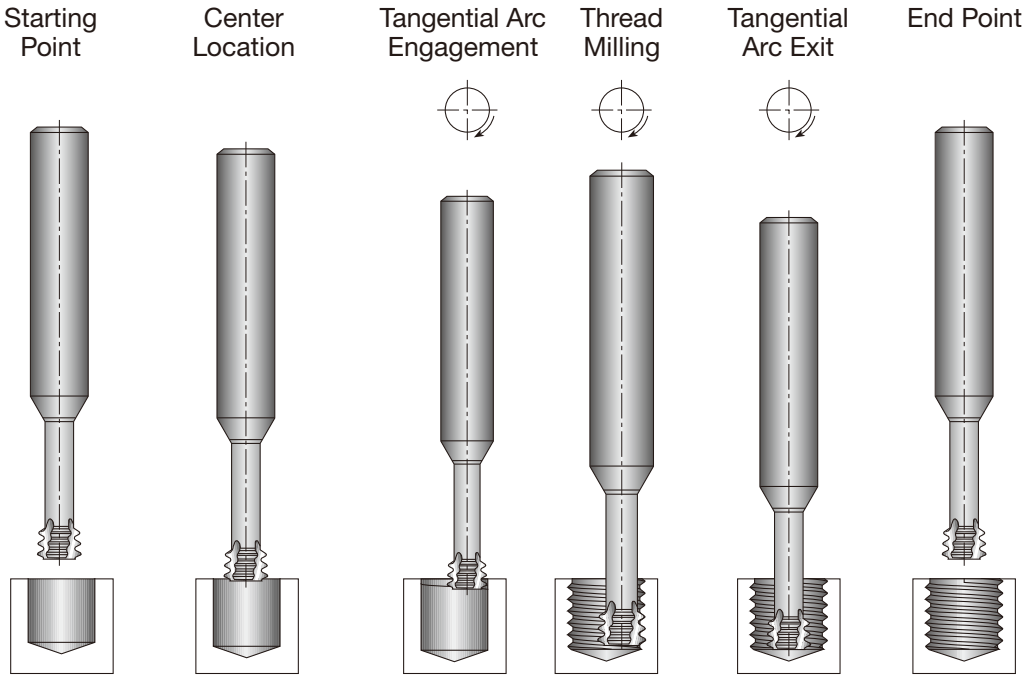
Tool dia. : mm (in)											
Feed (ipr)											
ø2 (0.079")	ø3 (0.118")	ø4 (0.157")	ø6 (0.236")	ø8 (0.315")	ø10 (0.394")	ø12 (0.472")	ø14 (0.551")	ø16 (0.630")	ø20 (0.787")	ø25 (0.984")	ø30 (1.181")
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
-	-	-	-	-	-	-	-	-	-	-	-
0.0008	0.0012	0.0012	0.002	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
0.0008	0.0012	0.0012	0.002	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0083	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
-	-	-	-	-	-	-	-	-	-	-	-
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
-	-	-	-	-	-	-	-	-	-	-	-
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0047
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
0.002	0.0024	0.0028	0.0035	0.0039	0.0043	0.0047	0.0051	0.0059	0.0071	0.0087	0.0098
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.002	0.002
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.002	0.002
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

When using long edge type tools, Feed should be reduced to 40% of above table.

THREADMILLING

MTECS
Small Diameter, Short edge type

Thread Milling - Procedure

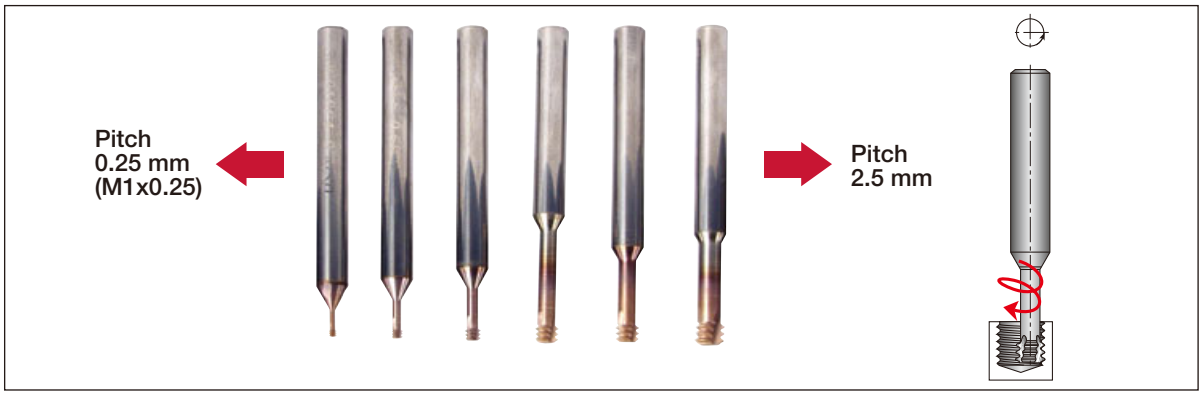


STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed (sfm)	ø0.059" (ø1.5 mm)	ø0.079" (ø2 mm)	ø0.118" (ø3 mm)	ø0.157" (ø4 mm)	ø0.197" (ø5 mm)	ø0.236" (ø6 mm)	ø0.276" (ø7 mm)	ø0.315" (ø8 mm)	ø0.354" (ø9 mm)	ø0.394" (ø10 mm)	ø0.472" (ø12 mm)	ø0.551" (ø14 mm)	ø0.591" (ø15 mm)
			Feed (ipr)												
P	Low & medium carbon steels	197 - 394	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
P	High carbon steels	197 - 295	0.0016	0.002	0.0024	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055	0.0055	0.0063	0.0067	0.0071
P	Alloy steels, treated steels	164 - 262	0.0016	0.0016	0.002	0.002	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
P	Cast steels	230 - 295	0.0016	0.0016	0.002	0.002	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
M	Stainless steels	197 - 295	0.0012	0.0012	0.0016	0.002	0.0024	0.0024	0.0028	0.0031	0.0035	0.0039	0.0043	0.0047	0.0051
K	Cast iron	131 - 262	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
N	Aluminum	262 - 492	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
N	Synthetics, duroplastics, thermoplastics	164 - 656	0.0039	0.0043	0.0047	0.0055	0.0063	0.0071	0.0075	0.0075	0.0075	0.0075	0.0075	0.0079	0.0079
S	Nickel alloys, titanium alloys	66 - 131	0.0012	0.0012	0.0016	0.0016	0.002	0.0024	0.0024	0.0024	0.0028	0.0028	0.0028	0.0031	0.0031

MTECS Small Diameter, Short edge type

SolidThread MTECS is used for the production of small internal threads. These thread mills feature a short 3-tooth cutting zone with 3 flutes and a released neck between the cutting zone and the shank. This unique tool design offers very precise profiles and a high performance AH725 submicron carbide grade with PVD titanium aluminum nitride coating. The very short profile exerts a low force which minimizes tool bending. This facilitates parallel and high thread precision for the entire length.



Compared to taps, the **SOLIDTHREAD** is more accurate, thread machining is substantially faster and there is no danger of a broken tap being stuck in the hole.

SolidThread vs. Tap

Criteria	Thread mill	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerance	4H, 5H, 6H with std. cutter	6H with standard tap, 4H with special tap
Machining time	Shorter or same as tap	Short
Machining load	Very low	High
Range of thread diameters	Wide range of diameters (able to thread a wide range of hole sizes)	Specific tap for each thread size
Right-/Left-hand threading	Same cutter	Specific tap for right- and left-hand

Features

- Minimum thread size of MTECS: **M1x0.25** (0.75 mm pre hole diameter) up to M20x2.50
- 2xD and 3xD threading lengths
- High cutting speeds
- Short cycle time
- Low cutting forces due to the short contact profile resulting in accurate and parallel thread
- Prevents oval threads near thin walls
- No more dealing with broken taps
- Reliable threading in blind holes
- Excellent performance on hardened steel, high temperature alloys and titanium

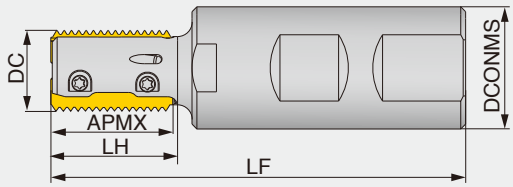


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge type





Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02 (1)	17	25	2	25	26	85	with	TL25D...
ETTL25M017W25.0F036R02 (1)	17	25	2	25	36	95	with	TL25D...
ETTL25M019W25.0F032R02	19	25	2	25	32	92	with	TL25D...
ETTL25M019W25.0F044R02	19	25	2	25	44	104	with	TL25D...
ETTL25M021W25.0F037R03	20.5	25	3	25	37	96	with	TL25D...
ETTL25M021W25.0F044R03	20.5	25	3	25	44	103	with	TL25D...
ETTL25M022W25.0F043R03	22	25	3	25	43	102	with	TL25D...
ETTL25M022W25.0F055R03	22	25	3	25	55	114	with	TL25D...
ETTL25M030W25.0F055R05	30	25	5	25	55	115	with	TL25D...

(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 9TPI are not mountable.

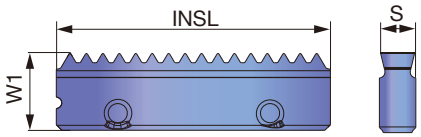
SPARE PARTS




Designation	Clamping screw	Wrench
ETTL25...	SSTM4-3.6P	T-8D

INSERT

TL25D...



P	Steel	★	
M	Stainless	☆	
K	Cast iron	☆	
N	Non-ferrous	☆	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S	Applicable thread sizes for the given cutter diameters: DC (mm) ø17	ø19	ø20.5	ø22	ø30
ISO Metric	Internal	TL25DIR1.5ISO	1.5	-	16	●	0.984	0.276	0.122	≥ M19	≥ M21	≥ M23	≥ M24	≥ M32
		TL25DIR2.0ISO	2	-	12	●	0.984	0.276	0.122	≥ M20	≥ M22	≥ M23	≥ M25	≥ M33
		TL25DIR3.0ISO (2)	3	-	8	●	0.984	0.276	0.122	-	≥ M23	≥ M25	≥ M26	≥ M34
Unified	Internal	TL25DIR20UN	-	20	19	●	0.984	0.276	0.122	≥ 3/4	≥ 7/8	≥ 7/8	≥ 15/16	≥ 1 5/16
		TL25DIR12UN	-	12	11	●	0.984	0.276	0.122	≥ 13/16	≥ 7/8	≥ 15/16	≥ 1	≥ 1 5/16
		TL25DIR9UN (2)	-	9	8	●	0.984	0.276	0.122	-	≥ 7/8	≥ 15/16	≥ 1	≥ 1 3/8
		TL25DIR8UN (2)	-	8	7	●	0.984	0.276	0.122	-	≥ 15/16	≥ 1	≥ 1 1/16	≥ 1 3/8
Whitworth (parallel pipe)	Internal and external	TL25DEIR14W	-	14	13	●	0.984	0.276	0.122	≥ G1/2	≥ G5/8	≥ G3/4	≥ G3/4	-
		TL25DEIR11W	-	11	10	●	0.984	0.276	0.122	≥ G1	≥ G1	≥ G1	≥ G1	≥ G1

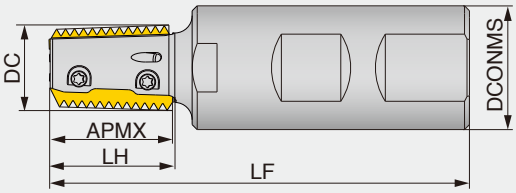
Do not use this tool when the hole depth to be threaded exceeds the cutter's LH value.
(2) Does not fit the DC = 17 mm holder

●: Line up

Reference pages: Standard cutting conditions → I077

Indexable thread milling cutter, long edge type



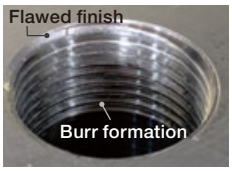


Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02-PT	17.47	25	2	25	25.5	85	with	TL25SEIR...
ETTL25M022W25.0F043R03-PT	22.2	25	3	25	43	102	with	TL25SEIR...

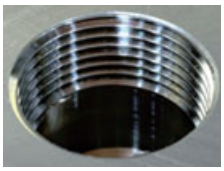
SPARE PARTS

Designation	Clamping screw	Wrench
ETTL...-PT	SSTM4-3.6P	T-8D

Excellent surface finish



Helical tap
(of HSS)

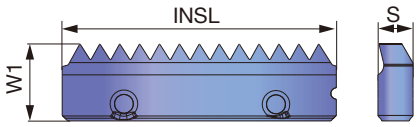


THREADMILLING
ETTL25M017W25.0F026R02-PT,
TL25SEIR11BSPT

Machine: BT50
Thread: Rc1

INSERT

TL25SEIR...



P	Steel	★	
M	Stainless	☆	
K	Cast iron	☆	
N	Non-ferrous	☆	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S	Applicable thread sizes for the given cutter diameters: DC (mm) ø17.47	ø22.2
BSPT	Internal and external	TL25SEIR14BSPT	-	14	13	●	0.984	0.276	0.122	1/2, 3/4	3/4
		TL25SEIR11BSPT	-	11	10	●	0.984	0.276	0.122	≥ 1 (1)	≥ 1 (1)
NPT	Internal and external	TL25SEIR14NPT	-	14	13	●	0.984	0.276	0.122	1/2, 3/4	3/4
		TL25SEIR11.5NPT	-	11.5	11	●	0.984	0.276	0.122	1, 1 1/4, 1 1/2, 2 (1)	1, 1 1/4, 1 1/2, 2 (1)
NPTF	Internal and external	TL25SEIR14NPTF	-	14	13	●	0.984	0.276	0.122	1/2, 3/4	3/4

(1) Do not use this insert when the hole depth to be threaded exceeds the cutter's LH.

●: Line up

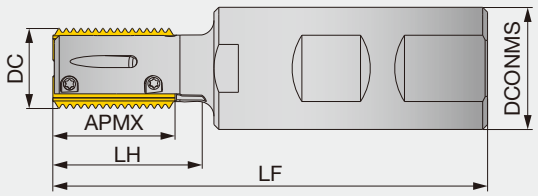
Reference pages: Standard cutting conditions → I077

THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge type





Metric	DC	APMX	CICT	DCONMS	LH	LF	Coolant hole	Insert
ETLN25M017W25.0F026R02 (1)	17	25	2	25	26	85	With	LN25....
ETLN25M017W25.0F036R02 (1)	17	25	2	25	36	95	With	LN25....
ETLN25M019W25.0F032R02	19	25	2	25	32	92	With	LN25....
ETLN25M019W25.0F044R02	19	25	2	25	44	104	With	LN25....
ETLN25M021W25.0F037R03	20.5	25	3	25	37	96	With	LN25....
ETLN25M021W25.0F044R03	20.5	25	3	25	44	103	With	LN25....
ETLN25M022W25.0F043R03	22	25	3	25	43	102	With	LN25....
ETLN25M022W25.0F055R03	22	25	3	25	55	114	With	LN25....
ETLN25M030W25.0F055R05	30	25	5	25	55	115	With	LN25....

(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI do not fit.

SPARE PARTS

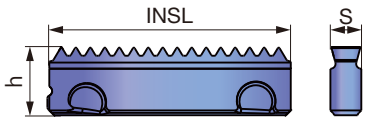



Designation	Clamping screw	Wrench
ETLN25...	SSTM3-3	T-6F

Recommended clamping torque: 1 N·m

INSERT

LN25...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Coated AH725	INSL	h	S
ISO Metric	Internal	LN25DIR1.5ISO	1.5	-	●	0.984	0.276	0.122
		LN25DIR2.0ISO	2	-	●	0.984	0.276	0.122
		LN25DIR3.0ISO (2)	3	-	●	0.984	0.276	0.122
Unified	Internal	LN25DIR20UN	-	20	●	0.984	0.276	0.122
		LN25DIR12UN	-	12	●	0.984	0.276	0.122
		LN25DIR8UN (2)	-	8	●	0.984	0.276	0.122
Whitworth	Internal and external	LN25DEIR14W	-	14	●	0.984	0.276	0.122
		LN25DEIR11W	-	11	●	0.984	0.276	0.122

(2) Does not fit the DC 17 holder

●: Line up

Reference pages: Standard cutting conditions → I077

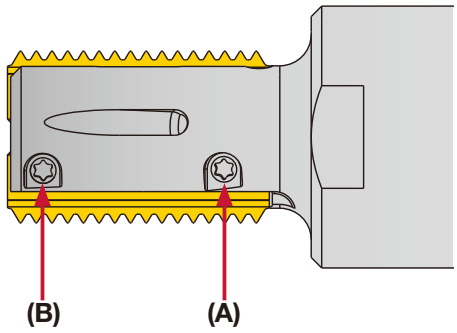
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel	AH725	328 - 656	0.004 - 0.012
	High carbon steel	AH725	230 - 492	0.004 - 0.012
	High carbon steel	AH725	230 - 558	0.004 - 0.012
	Cast steel	AH725	230 - 558	0.004 - 0.012
M	Stainless steel	AH725	295 - 459	0.004 - 0.012
K	Cast iron	AH725	197 - 427	0.002 - 0.012
N	Aluminum	AH725	262 - 1312	0.004 - 0.016
S	Heat-resistant alloys	AH725	33 - 98	0.001 - 0.004
	Titanium alloy	AH725	66 - 295	0.001 - 0.004

Climb milling is recommended.

Insert installation

1. Use airgun or rag to thoroughly clean all the insert pockets free from dust or chips.
2. Lightly tighten Screw "A" first, then Screw "B" until the insert becomes stationary.
3. Lightly tighten the screws for other insert(s) in the same matter as mentioned in #1 and #2 above.
4. Firmly tighten Screw "A", then Screw "B".
   Use the recommended torque strengths when tightening the screws.
5. Firmly tighten the screws for other insert(s) in the same manner as mentioned in #4 above.
6. Inspect to make sure there is no gap between the insert and the insert seat. Measure the radial runout before use.

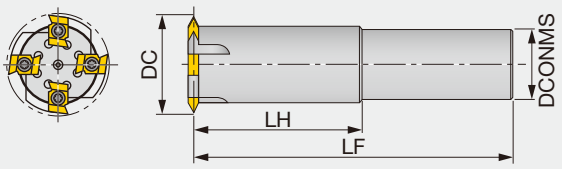


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, single tooth





Right hand, 4 inserts

Metric	DC	CICT	DCONMS	LH	LF	Range of internal thread	Insert
D23-D25-45R	23	1	25	45	115	M28 - M30	T1-R...
D25-D25-45R	25	1	25	45	115	M32 - M42	T1-R...
D38-D32-85R	38	2	32	85	165	M45 - M56	T1-R...
D50-D42-100R	50	4	42	100	190	M58 - M68	T1-R...
D55-D42-100R	55	4	42	100	190	M64 - M85	T2-R...
D60-D42-100R	60	4	42	100	190	M70 - M85	T2-R...
D80-D42-100R	80	6	42	100	190	M90 -	T2-R...

SPARE PARTS

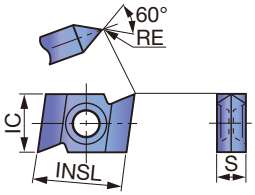



Designation	Clamping screw	Wrench
D23-D25... - D50-D42...	CSTB-4	T-15F
D55-D42... - D80-D42...	CSTB-5	T-20F

Recommended clamping torque: CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

INSERT

T*-R...



P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	RE	Coated											INSL	IC	S
		GH330													
T1-R14	0.006	●											0.567	0.375	0.187
T1-R28	0.011	●											0.567	0.375	0.187
T2-R14	0.006	●											0.701	0.500	0.250
T2-R28	0.011	●											0.701	0.500	0.250

●: Line up

Reference pages: Standard cutting conditions → I079

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels , Unhardened steels	≥ 200 HB	GH330	490 - 660	0.012 - 0.016
P	Carbon steels, Alloy steels	≥ 300 HB	GH330	490 - 660	0.007 - 0.010
P	Die steels	≥ 50 HRC	GH330	100 - 160	0.006 - 0.008
M	Stainless steels	≥ 300 HB	GH330	490 - 660	0.002 - 0.005

Climb milling is recommended.
When threading a blind hole, use a right hand cutter in right-hand rotation. Cut up from the bottom to prevent chip recutting.
When machining internal threads from the mouth, use the left-hand cutter in left-hand rotation.

THREADING MILLS AND APPLICABLE THREADS

Internal threading - Metric threads (M)

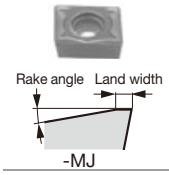
Designation	Insert	Pitch (mm)										
		1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
D23-D25-45R	T1-R14	M28	M28	M29	M29	M30	M30	-	-	-	-	-
	T1-R28	-	-	-	-	M30	M30	-	-	-	-	-
D25-D25-45R	T1-R14	M30	M30	M31	M31	M32	M32	M36	M36	-	-	-
	T1-R28	-	-	-	-	M32	M32	M36	M36	-	-	-
D38-D32-85R	T1-R14	M43	M43	M44	M44	M45	M45	M46	M46	M48	M56	-
	T1-R28	-	-	-	-	M45	M45	M46	M46	M48	M56	-
D50-D42-100R	T1-R14	M55	M55	M56	M56	M57	M57	M58	M58	M59	M59	-
	T1-R28	-	-	-	-	M57	M57	M58	M58	M59	M59	-
D55-D42-100R	T2-R14	M60	M60	M61	M61	M62	M62	M63	M63	M64	M64	M65
	T2-R28	-	-	-	-	M62	M62	M63	M63	M64	M64	M65
D60-D42-100R	T2-R14	M65	M65	M66	M66	M67	M67	M68	M68	M69	M69	M70
	T2-R28	-	-	-	-	M67	M67	M68	M68	M69	M69	M70
D80-D42-100R	T2-R14	M85	M85	M86	M86	M87	M87	M88	M88	M89	M89	M90
	T2-R28	-	-	-	-	M87	M87	M88	M88	M89	M89	M90

Internal threading - Unified threads (UN, UNC, UNF, UNEF)

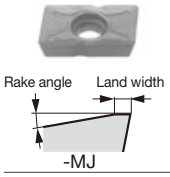
Designation	Insert	TPI												
		16	14	13	12	11	10	9	8	7	6	5	4.5	4
D23-D25-45R	T1-R14	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/16	1 3/16	1 3/16	1 3/16	-	-	-	-
	T1-R28	-	-	-	-	-	1 3/16	1 3/16	1 3/16	1 3/16	-	-	-	-
D25-D25-45R	T1-R14	1 3/16	1 3/16	1 3/16	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 5/16	1 3/8	1 3/4	-	-
	T1-R28	-	-	-	-	-	1 1/4	1 1/4	1 1/4	1 5/16	1 3/8	1 3/4	-	-
D38-D32-85R	T1-R14	1 11/16	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 13/16	1 13/16	1 7/8	2	-
	T1-R28	-	-	-	-	-	1 3/4	1 3/4	1 3/4	1 13/16	1 13/16	1 7/8	2	-
D50-D42-100R	T1-R14	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 3/8	2 3/8	2 3/8	-
	T1-R28	-	-	-	-	-	2 1/4	2 1/4	2 1/4	2 1/4	2 3/8	2 3/8	2 3/8	-
D55-D42-100R	T2-R14	2 3/8	2 3/8	2 3/8	2 3/8	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 5/8	2 5/8	2 3/4
	T2-R28	-	-	-	-	-	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 5/8	2 5/8	2 3/4
D60-D42-100R	T2-R14	2 5/8	2 5/8	2 5/8	2 5/8	2 5/8	2 5/8	2 5/8	2 5/8	2 3/4	2 3/4	2 3/4	2 7/8	3
	T2-R28	-	-	-	-	-	2 5/8	2 5/8	2 5/8	2 3/4	2 3/4	2 3/4	2 7/8	3
D80-D42-100R	T2-R14	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 5/8	3 3/4
	T2-R28	-	-	-	-	-	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 5/8	3 3/4

Milling Insert (Old item)

● ACMT**PR-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	ACMT060308PR-MJ	●	●	●	●	ELP07/09/12...
	ACMT07T308PR-MJ	●	●	●	●	
	ACMT100408PR-MJ	●	●	●	●	

● ADMT**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	T3130	
	ADMT130308PR-MJ	●	●	●	ELP13/17/21...
	ADMT17T308PR-MJ	●	●	●	
	ADMT210408PR-MJ	●	●	●	

● AECW**PEFR, AECW**PESR, AEMW**PEFR, AEMW**PETR

Shape	Designation	Coated		Cermet	Uncoated		Applicable mill
		AH120	GH330	NS740	UX30	TH10	
	AECW1403PEFR					●	EPE4000/5000/ 6000...
	AECW1403PESR	●	●	●	●		
	AECW16T3PEFR					●	
	AECW16T3PESR	●	●	●	●		
	AECW1804PEFR					●	
	AECW1804PESR	●	●	●	●		
	AEMW1403PEFR					●	
	AEMW1403PETR		●	●	●		
	AEMW16T3PEFR					●	
	AEMW16T3PETR		●	●	●		
	AEMW1804PEFR					●	
	AEMW1804PETR		●	●	●		

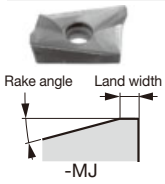
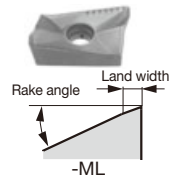
● ANEA542TN, ANEA642TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ANEA542TN	●	VSN...
	ANEA642TN	●	

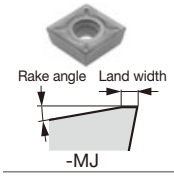
●: Line up

Milling Insert (Old item)

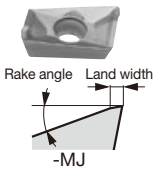
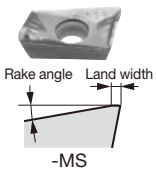
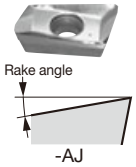
● ANMT**PPPR-MJ, ANMT**PPPR-ML

Shape	Designation	Coated			Applicable mill
		AH120	GH330	T3130	
	ANMT09T3PPPR-MJ	●	●	●	EPN09
	ANMT09T3PPPR-ML	●			EPN14...
	ANMT1404PPPR-MJ	●	●	●	TPN14...
	ANMT1404PPPR-ML	●			
					

● APMT**PN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	APMT070308PN-MJ	●	●	●	●	ELP07/09/12...
	APMT09T308PN-MJ	●	●	●	●	
	APMT120408PN-MJ	●	●	●	●	

● ASMT17**PDPR-MJ, ASGT17**PDFR-AJ, ASMT170508PDPR-MS

Shape	Designation	Coated						Cermet	Uncoated	Applicable mill
		AH120	AH130	AH140	T1115	T3130	DS1100	NS740	KS05F	
	ASMT170504PDPR-MJ	●			●	●		●		TPS17...
	ASMT170508PDPR-MJ	●			●	●		●		EPS17...
	ASMT170512PDPR-MJ	●				●				
	ASMT170516PDPR-MJ	●				●		●		
	ASMT170520PDPR-MJ	●								
	ASMT170530PDPR-MJ	●								
	ASMT170532PDPR-MJ	●				●		●		
	ASMT170508PDPR-MS		●	●						
	ASGT170504PDFR-AJ						●		●	
	ASGT170508PDFR-AJ						●		●	
										

●: Line up

Milling Insert (Old item)

● CPMW**-EN, CPMT**-EN

Shape	Designation	Coated						Uncoated							Applicable mill
		GH330						UX30							
	CPMW050208EN	●						●							EVP1000
	CPMW06T208EN	●						●							
	CPMT080308EN	●						●							

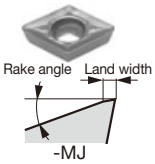
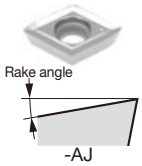
● EDKW53ZTR

Shape	Designation	Coated						Uncoated							Applicable mill
		GH330						UX30							
	EDKW53ZTR	●						●							ESD5000

● ENEQ**TN-T

Shape	Designation	Coated													Applicable mill
		AH120													
	ENEQ090508TN-T	●													VSNE09...
	ENEQ100508TN-T	●													VSNE10...
	ENEQ130608TN-T	●													VSNE13...
	ENEQ160608TN-T	●													VSNE16...

● GDMT**PDPR-MJ, GDGT**PDFR-AJ

Shape	Designation	Coated						Uncoated							Applicable mill
		AH120	AH140	AH330	T3130	DS1100		UX30	TH10						
	GDMT10H3PDPR-MJ	●	●	●	●			●							TSD10/17...
	GDMT17X6PDPR-MJ	●	●	●	●			●							ESD10/17...
	GDGT10H3PDFR-AJ					●			●						HSD10/17...
	GDGT17X6PDFR-AJ					●			●						
															

● HEHN532FN

Shape	Designation	Uncoated													Applicable mill
		TH10													
	HEHN532FN	●													QYE5300

●: Line up

Milling Insert (Old item)

● HPKN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HPKN532FN	●	QYP5300

● LNCA64ZTR

Shape	Designation	Coated	Uncoated	Applicable mill
		T3130	UX30	
	LNCA64ZTR	●	●	VSN6000I

● RDCA2004TN, RDCN2004TN, RDKN2004...

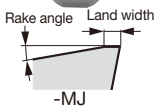
Shape	Designation	Coated	Uncoated		Applicable mill
		AH120	UX30	TH10	
	RDCA2004TN		●		TRD6000 ERD6000
	RDCN2004TN		●		
	RDKN2004FN			●	
	RDKN2004TN	●	●		

● RDCM1203TN, RDMA1203TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	RDCM1203TN	●	ERD4000
	RDMA1203TN	●	

● RDMT**ZDPN-MJ, RDMW**ZDSN

Shape	Designation	Coated				Uncoated		Applicable mill
		AH120	AH130	AH140	AH330	T3130	UX30	
	RDMT1204ZDPN-MJ	●		●	●	●	●	TRD12/16... ERD12/16...
	RDMW1204ZDSN	●		●		●		
	RDMT1606ZDPN-MJ	●	●	●	●	●	●	
	RDMW1606ZDSN	●		●		●		





●: Line up

Milling Insert (Old item)

● RFEN2004ZFTN, RFEN2004M0TN

Shape	Designation	Coated			Uncoated							Applicable mill
		AH120	GH330		UX30	KS20						
	RFEN2004ZFTN	●	●		●	●						TRF6000 ERF6000
	RFEN2004M0TN		●		●	●						

● SDCN1504ZDSR, SDEN1504ZDSR, SDNN1504ZDSR

Shape	Designation	Coated										Applicable mill
		AH120	AH140	T1115	T3130							
	SDCN1504ZDSR	●	●		●							MILLFEED TXD15...
	SDEN1504ZDSR	●	●	●	●							
	SDNN1504ZDSR	●	●	●	●							

● SDKN42EF..., SDEN42EFTR24

Shape	Designation	Coated			Cermet		Uncoated					Applicable mill
		T3130			NS740		TH10	UX30				
	SDKN42EFTR	●			●							TMD4100I
	SDKN42EFFR						●					
	SDEN42EFTR24				●			●				

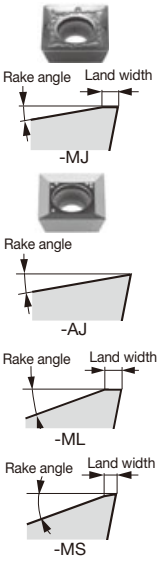
● SDMT1204AFPN-MJ, SDMT1204AFTN-MJ, SDMT1204AFPN-ML, SDMT1204AFPN-MS, SDGT1204AFTN-MJ, SDGT1204AFFN-AJ

Shape	Designation	Coated					Cermet		Uncoated				Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10				
 Rake angle Land width -MJ	SDMT1204AFPN-MJ	●	●	●	●	●							TAD12... EAD12...
	SDMT1204AFTN-MJ						●						
	SDMT1204AFPN-ML	●		●									
	SDMT1204AFPN-MS		●										
	SDGT1204AFTN-MJ	●		●			●						
	SDGT1204AFFN-AJ								●				
 Rake angle -AJ													
Rake angle Land width -ML													
Rake angle Land width -MS													

●: Line up

Milling Insert (Old item)

● SDMT1204PDSR-MJ, SDMT1204PDTR-MJ, SDMT1204PDPR-ML, SDMT1204PDPR-MS SDGT1204PDTR-MJ, SDGT1204PDFR-AJ

Shape	Designation	Coated					Cermet		Uncoated			Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10			
	**SDMT1204PDSR-MJ**	●	●	●	●	●						TPD12... EPD12...
	SDMT1204PDTR-MJ						●					
	SDMT1204PDPR-ML	●		●								
	SDMT1204PDPR-MS		●									
	SDGT1204PDTR-MJ	●		●			●					
	SDGT1204PDFR-AJ								●			

● SDMW090308TN, SDMW120408TN

Shape	Designation	Uncoated										Applicable mill
		UX30										
	**SDMW090308TN**	●										ELD3000 ELD4000
	SDMW120408TN	●										

● SECN422TN, SECN422FN, SEEN422TN, SEEN422FN, SECN422FN-DIA

Shape	Designation	ISO Designation (Metric)	Cermet			Uncoated			PCD			Applicable mill
			NS740	N308		UX30	TH10		DX140			
	**SECN422TN**	**SECN120308TN**	●	●		●						EGE4000 QHE4000
	SECN422FN	**SECN120308FN**					●					
	SEEN422TN	**SEEN120308TN**	●	●		●						
	SEEN422FN	**SEEN120308FN**					●					
	SECN422FN-DIA	**SECN120308FN-D**							●			

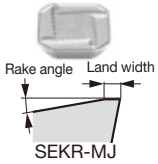
DX140: Packing quantity = 1pc.

●: Line up

Milling Insert (Old item)

● SEEN1203AFTNCR-14, SEKN42AFTN, SEKN42AFFN, SEKN42AFTN16, SEKR42AFSR-MJ, SEKR1203AFPN-MS, SEKR1203AFTN-MJ, SEMR1203AFTN-MJ

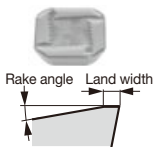
Shape	Designation	ISO Designation (Metric)	Coated					Cermet	Uncoated		Applicable mill
			AH120	AH130	AH140	GH330	T3130	NS740	TH10	UX30	
	SEEN1203AFTNCR-14							●			TGE4400I
	SEKN42AFTN	SEKN1203AFTN	●	●	●	●				●	EGE4400
	SEKN42AFFN	SEKN1203AFFN							●		
	SEKN42AFTN16	SEKN1203AFTN-16					●	●			
	SEKR42AFSR-MJ	SEKR1203AFSR-MJ				●	●				
	SEKR1203AFPN-MS				●						
	SEKR1203AFTN-MJ							●			
	SEMR1203AFTN-MJ							●			



● SECN42EFTRCR, SEEN42EFTRCR, SEKN42EFTR, SEKN42EFFR

Shape	Designation	ISO Designation (Metric)	Coated		Cermet	Uncoated			Applicable mill
			GH330	T3130	NS740	UX30	TH10		
	SECN42EFTRCR	SECN1203EFTR			●				EGE4100
	SEEN42EFTRCR	SEEN1203EFTR			●				
	SEKN42EFTR	SEKN1203EFTR	●	●	●				
	SEKN42EFFR	SEKN1203EFFR					●		

●SEKR1504AFSR-MJ

Shape	Designation	Coated	Applicable mill
		T3130	
	SEKR1504AFSR-MJ	●	

●: Line up

Milling Insert (Old item)

● SF*N42ZFN, SFCN42ZFN-DIA

Shape	Designation	Uncoated			PCD						Applicable mill
		TH10			DX140						
 -DIA	SFCN42ZFN	●									THF4400RIA
	SFEN42ZFN	●									
	SFCN42ZFN-DIA				●						

DX140: Packing quantity = 1pc.

● SF*N53ZFN, SFCN53ZFN-DIA

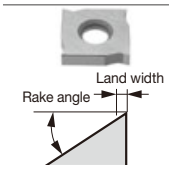
Shape	Designation	Uncoated			PCD						Applicable mill
		TH10			DX140						
 -DIA	SFCN53ZFN	●									THF5400RIA
	SFEN53ZFN	●									
	SFCN53ZFN-DIA				●						

DX140: Packing quantity = 1pc.

● SNCN43Z..., SNKF43Z..., SNKN43ZTN

Shape	Designation	Coated			Cermet		Ceramic	Uncoated			Applicable mill
		T1115	T3130		NS740	N308	FX105	UX30	TH10		
	SNCN43ZFN								●		TGN4200R-A
	SNCN43ZTN				●	●		●			
	SNKF43ZFN								●		
	SNKF43ZTN	●						●			
	SNKN43ZTN	●	●		●		●	●			

● SNEN12**Z...

Shape	Designation	Uncoated									Applicable mill
		UX30	TH10								
	SNEN12T2ZFN		●								SVN4000
	SNEN12T2ZTN	●									
	SNEN1233ZFN		●								
	SNEN1233ZTN	●									

● SNMN1204**TN

Shape	Designation	Coated			Cermic		Uncoated				Applicable mill
		AH120	T1115	T3130	FX105		UX30				
	SNMN120408TN				●						TGN4200R-A
	SNMN120412TN	●	●	●	●		●				
	SNMN120416TN				●						
	SNMN120420TN				●						
	SNMN120424TN				●						

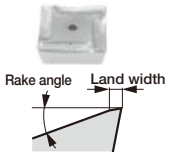
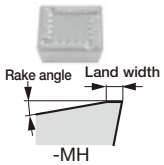
●: Line up

Milling Insert (Old item)

● SPGN120412TN

Shape	Designation	Coated			Ceramic						Applicable mill
		T1115			FX105						
	SPGN120412TN	●			●						QFP4000

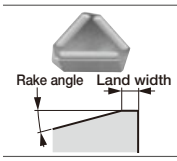
● SPMR1605PPTR-MJ, SPMR1605PPPR-ML, SPMR1605PPTR-MH

Shape	Designation	Coated			Uncoated						Applicable mill
		GH330	T1115	T3130	UX30						
 -MJ	SPMR1605PPTR-MJ	●	●	●	●						TPP16...
	SPMR1605PPPR-ML	●									
 -ML	SPMR1605PPTR-MH	●		●	●						
 -MH											

●TDMN**N

Shape	Designation	Cermet			Uncoated						Applicable mill
		NS740			TH10	UX30					
	TDMN110304TN	●				●					ESD2000
	TDMN110304FN				●						
	TDMN110308TN	●				●					

●TNKF64ZTR

Shape	Designation	Uncoated									Applicable mill
		UX30									
	TNKF64ZTR	●									TPN6400I

●: Line up

Milling Insert (Old item)

●TNMN43ZENS

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNMN43ZENS	●	TSN4000 ESN4000

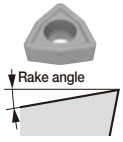
● TPCA43ZTRW1, TPMA432TNW1

Shape	Designation	Cermet	Uncoated		Applicable mill
		NS740	UX30	TH10	
	TPCA43ZTRW1			●	PES1500...
	TPMA432TNW1	●	●	●	

●TPMN**TN

Shape	Designation	Cermet	Applicable mill
		NS740	
	TPMN110304TN	●	
	TPMN110308TN	●	
	TPMN160308TN	●	
	TPMN160312TN	●	
	TPMN220408TN	●	
	TPMN220412TN	●	

● WCMT**-D4

Shape	Designation	Coated		Applicable mill
		AH120	AH140	
	WCMT050308-D4	●	●	EVX... HVX...
	WCMT06T308-D4	●	●	

● WFCN**ZFR-DIA

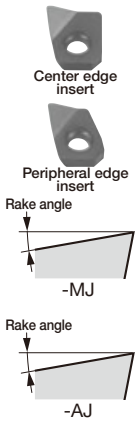
Shape	Designation	PCD	Applicable mill
		DX140	
	WFCN42ZFR-DIA	●	THF4400RIA THF5400RIA
	WFCN53ZFR-DIA	●	

DX140: Packing quantity = 1pc.

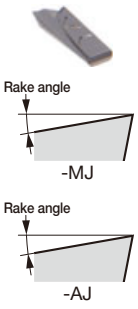
●: Line up

Milling Insert (Old item)

● XVGT**EC-MJ, XVGT**EP-MJ, XVGT**FC-AJ, XVGT**FP-AJ

Shape	Designation	Coated AH730	Coated DS1200	Applicable mill
	XVGT06H205EC-MJ	●		HYBRIDTACMILL EVH...
	XVGT07X305EC-MJ	●		
	XVGT09X405EC-MJ	●		
	XVGT06H205EP-MJ	●		
	XVGT07X305EP-MJ	●		
	XVGT09X405EP-MJ	●		
	XVGT06H205FC-AJ		●	
	XVGT07X305FC-AJ		●	
	XVGT09X405FC-AJ		●	
	XVGT06H205FP-AJ		●	
	XVGT07X305FP-AJ		●	
	XVGT09X405FP-AJ		●	

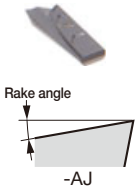
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated AH730	Coated DS1200	Applicable mill
	XHGR110202ER-MJ	●		HYBRIDTACMILL EPH11/13/18...
	XHGR110204ER-MJ	●		
	XHGR110205ER-MJ	●		
	XHGR110208ER-MJ	●		
	XHGR110210ER-MJ	●		
	XHGR110212ER-MJ	●		
	XHGR110215ER-MJ	●		
	XHGR110216ER-MJ	●		
	XHGR110220ER-MJ	●		
	XHGR130202ER-MJ	●		
	XHGR130204ER-MJ	●		
	XHGR130205ER-MJ	●		
	XHGR130208ER-MJ	●		
	XHGR130210ER-MJ	●		
	XHGR130212ER-MJ	●		
	XHGR130215ER-MJ	●		
	XHGR130216ER-MJ	●		
	XHGR130220ER-MJ	●		
	XHGR18T202ER-MJ	●		
	XHGR18T204ER-MJ	●		
	XHGR18T205ER-MJ	●		
	XHGR18T208ER-MJ	●		
	XHGR18T210ER-MJ	●		
	XHGR18T212ER-MJ	●		
	XHGR18T215ER-MJ	●		
	XHGR18T216ER-MJ	●		
	XHGR18T220ER-MJ	●		
	XHGR110200FR-AJ		●	
	XHGR110202FR-AJ		●	
	XHGR110204FR-AJ		●	
	XHGR110205FR-AJ		●	
	XHGR110208FR-AJ		●	
	XHGR110210FR-AJ		●	

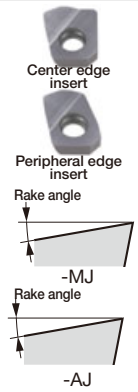
●: Line up

Milling Insert (Old item)

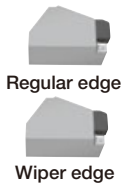
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
 Rake angle -AJ	XHGR130212FR-AJ		●	HYBRIDTACMILL EPH11/13/18...
	XHGR130215FR-AJ		●	
	XHGR130216FR-AJ		●	
	XHGR130220FR-AJ		●	
	XHGR18T200FR-AJ		●	
	XHGR18T202FR-AJ		●	
	XHGR18T204FR-AJ		●	
	XHGR18T205FR-AJ		●	
	XHGR18T208FR-AJ		●	
	XHGR18T210FR-AJ		●	
	XHGR18T212FR-AJ		●	
	XHGR18T215FR-AJ		●	
	XHGR18T216FR-AJ		●	
	XHGR18T220FR-AJ		●	

● XXGT**EC-MJ, XXGT**FC-AJ, XXGT**EP-MJ, XXGT**FP-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
 Center edge insert Peripheral edge insert Rake angle -MJ Rake angle -AJ	XXGT06H205EC-MJ	●		HYBRIDTACMILL EXH...
	XXGT07X305EC-MJ	●		
	XXGT09X408EC-MJ	●		
	XXGT06H205FC-AJ		●	
	XXGT07X305FC-AJ		●	
	XXGT09X408FC-AJ		●	
	XXGT06H205EP-MJ	●		
	XXGT07X305EP-MJ	●		
	XXGT09X408EP-MJ	●		
	XXGT06H205FP-AJ		●	
	XXGT07X305FP-AJ		●	
	XXGT09X408FP-AJ		●	

● YDEN1505ADFR-D, YDEN1505ADFR-WD

Shape	Designation	PCD	Applicable mill
		DX140	
 Regular edge Wiper edge	YDEN1505ADFR-D	●	DAD15...
	YDEN1505ADFR-WD	●	

DX140: Packing quantity = 1pc.

●: Line up

Milling Insert (Old item)

● YDEN1505PDFR-D, YDEN1505PDFR-WD

Shape	Designation	PCD	Applicable mill
		DX140	
 Regular edge	YDEN1505PDFR-D	●	DPD15... EDPD15...
	YDEN1505PDFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN2405PDFR-D, YDEN2405PDFR-WD, YDEN2405PDFR-BD

Shape	Designation	PCD	Applicable mill
		DX140	
 Regular edge	YDEN2405PDFR-D	●	DPD24...
	YDEN2405PDFR-WD	●	
	YDEN2405PDFR-BD	●	
 Wiper edge			
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● ZDCA**TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ZDCA0804TN	●	TBF1000
	ZDCA1105TN	●	

●: Line up

Milling Insert (Old item) CBN

● 2QP-SNGN..

Shape	Designation	CBN								Applicable mill
		BX910								
	2QP-SNGN090308	●								
	2QP-SNGN090312	●								

● 2QP-SPGW..., 2QP-SPGN...

Shape	Designation	CBN								Applicable mill
		BX910								
 2QP-SPGW	2QP-SPGW09T308	●								
	2QP-SPGW09T312	●								
	2QP-SPGW120408	●								
	2QP-SPGW120412	●								
 2QP-SPGN	2QP-SPGW120416	●								
	2QP-SPGN090308	●								
	2QP-SPGN090312	●								

● 3QP-TPGW..., 3QP-TPGN...

Shape	Designation	CBN								Applicable mill
		BX910								
 3QP-TPGW	3QP-TPGW110308	●								
	3QP-TPGN110308	●								
	3QP-TPGN110312	●								
 3QP-TPGN										

● S-CNGN..., S-RNGN..., S-SNGN..., S-TNGN...

Shape	Designation	CBN								Applicable mill
		BXC90								
 S-CNGN	S-CNGN090308	●								
	S-CNGN090312	●								
	S-CNGN120408	●								
	S-CNGN120412	●								
 S-RNGN	S-RNGN090300	●								
	S-RNGN120400	●								
 S-SNGN	S-SNGN090308	●								
	S-SNGN090312	●								
	S-SNGN120308	●								
	S-SNGN120312	●								
	S-SNGN120408	●								
	S-SNGN120412	●								
 S-TNGN	S-TNGN110308	●								
	S-TNGN110312	●								
	S-TNGN160408	●								
	S-TNGN160412	●								

●: Line up

Alphanumeric Index

Milling

Designation	Product name	Page
1QP-SECW12X4ZETR-B	TFE insert	H112
1QP-SECW12X4ZETR-W	TFE insert	H112
2QP-SECW12X412ZETR	TFE insert	H112
A		
AOGT□□□□□□PDFR-AJ	TungRec insert	H167
AOGT070204PDFR-AJ	TungRec insert	H167
AOMT□□□□□□PDPR-MJ	TungRec insert	H167
AOMT070□□□PDPR-MJ	TungRec insert	H167
AOMT070208PDPR-HJ	TungRec insert	H167
APMR190616PR-MJ	TZP19 insert	H262
APMT120416PR-MJ	TZP12 insert	H261
ASG□□N...	TungMini-Slit side cutter	H211
ASGT11T□□□PDFR-AJ	TungRec insert	H167
ASGW11T30□PDFR-D	TungRec insert	H167
ASMT11T□□□PDPR-MJ	TungRec insert	H167
ASMT11T304PDPR-MS	TungRec insert	H167
ASN□□R□□□M...	TecTangential-Slot axial drive slot mill	H220
ASV□□N...	TungThinSlit axial drive slot mill	H215
ASW□□N...	TungUniversalSlot axial drive slot mill	H217
AVGT□□□□□□PBER-MJ	TungForce-Rec insert	H141
AVGT□□□□□□PBFR-AJ	TungForce-Rec insert	H141
AVGT□□□□□□PDFR-AM	TungForce-Rec insert	H141
AVMT□□□□□□PDER-MM	TungForce-Rec insert	H141
AVMT□□□□□□PPER-MM	TungForce-Rec insert	H141
C		
C□TLA15M□□□R□□L...	Tung-Tri roughing cutter with TungCap connection	H151
D		
D□□-D□□-□□R	Indexable threading cutter	I078
DCMW□□□□04TN	EBP insert	H241
DPCW11T3ZFR	TZF11 insert	H263
DPD09...	DPD09 cutter body	H114
E		
EASD05M□□□C...	TungQuad chamfering cutter	H244
EAW13R□□□M...	TungMill face endmill, shank type	H072
EBB□□□MS	EBB endmill	H242
EBD...	EBD endmill	H243
EBFM□□□□□C...	BallFinishNose endmill, shank type	H225
EBFM□□□□□S...	BallFinishNose endmill, shank type	H225
EBFU□□□S□□□C...	BallFinishNose endmill, shank type	H225
EBFU□□□T□□□S...	BallFinishNose endmill, shank type	H225
EBP...	EBP endmill	H240
EBRM□□T□□S...	BallRoughNose endmill, shank type	H234
EBRU□□□W□□□S...	BallRoughNose endmill, shank type	H234
ECC31005R-...	Chamfering cutter	H248
ECC31005RU-...	Chamfering cutter	H248
ECP44□□R	Chamfering cutter	H247

Designation	Product name	Page
ECP44□□R-U	Chamfering cutter	H247
EDPD09063R	EDPD09 endmill, shank type	H114
EEN09R□□□M...	DoPent endmill, shank type	H076
EEN09R□□□U0125W...	DoPent endmill, shank type	H076
EFE12050R	TFE endmill, shank type	H110
EFE12050RU	TFE endmill, shank type	H110
EFP40□□R	EFP4000R endmill, shank type	H268
EGD44□□R	EGD4400 endmill, shank type	H125
ELD05R□□□M...	TungQuad roughing endmill, shank type	H170
ELD05R□□□U□□□□W...	TungQuad roughing endmill, shank type	H170
ELS11R□□□M...	TungRec roughing endmill, shank type	H164
ELS11R□□□U□□□□W...	TungRec roughing endmill, shank type	H164
EMD4403RI-S32	EMD4400RI endmill, shank type	H120
EME44□□R...	EME4400 endmill, shank type	H117
EMS09080R	EMS09 endmill, shank type	H264
EPA□□R□□□M...	Tung-Tri endmill, shank type	H146, H147
EPA□□R□□□U□□□□-□□N	Tung-Tri endmill, shank type	H146
EPA□□R□□□U□□□□W...	Tung-Tri endmill, shank type	H146
EPAV□□M□□□C...	TungForce-Rec endmill, shank type	H136, H137
EPAV□□U□.□□C□.□□R...	TungForce-Rec endmill, shank type	H136
EPAV□□U□.□□W□.□□R...	TungForce-Rec endmill, shank type	H136
EPD05R□□□M...	TungQuad chamfering cutter	H169
EPD05R□□□U□□□□-...	TungQuad chamfering cutter	H169
EPD05R□□□U□□□□W...	TungQuad chamfering cutter	H169
EPM11R□□□M...	TecMill square shoulder endmill, shank type	H189
EPM11R□□□U□□□□W...	TecMill square shoulder endmill, shank type	H189
EPO□□R□□□M...	TungRec endmill, shank type	H158, H159
EPO□□R□□□U□□□□-...	TungRec endmill, shank type	H158
EPO□□R□□□U□□□□W...	TungRec endmill, shank type	H158
EPQ□□R□□□M...	DoRec endmill, shank type	H175
EPQ□□R□□□U□□□W...	DoRec endmill, shank type	H175
EPTC16M□□□C...	TungTri-Shred endmill, shank type	H197
EPTC16U2.00W1.25R04	TungTri-Shred endmill, shank type	H197
EPTN□□M0□□C...	DoForce-Tri endmill, shank type	H171
EPTN□□U□.□□C...	DoForce-Tri endmill, shank type	H171
EPV16R□□□M...	Tung-AluMill endmill, shank type	H183
EPV16R□□□U□□□□W...	Tung-AluMill endmill, shank type	H183
EPW13R□□□M...	TungMill endmill, shank type	H194
EPYD06M050C32.0R...	TungSpeed-Mill endmill, shank type	H105
EPYD06U2.00C1.25R08	TungSpeed-Mill endmill, shank type	H105
EPYP12M□□□C...	TungSpeed-Mill cutter body	H180
ERC□□R0□□M...	RoundSplit endmill, shank type	H081
ERC□□R□□□U□□□□-...	RoundSplit endmill, shank type	H081
ERC□□R□□□U□□□□W...	RoundSplit endmill, shank type	H081
ERP□□R□□□M...	FixRMill endmill, shank type	H088
ERP□□R□□□U□□□□-...	FixRMill endmill, shank type	H088
ERRQ12M040C32.0R04	FixRMill -New design- endmill, shank type	H086
ESE30□□R	ESE3000R endmill, shank type	H202
ESE40□□R...	ESE4000R endmill, shank type	H204
ETLN25M□□□W25.0F□□□R...	Indexable threading cutter	I076
ETTL25M□□□W25.0F□□□R...	Indexable threading cutter	I074

Designation	Product name	Page
ETTL25M□□□W25.0F□□□R□□-PT	Indexable threading cutter	I075
EVLX□□M□□□C□□.0R...	DoMultiRec endmill	H255
EVLX□□U□.□□C□.□□R...	DoMultiRec endmill	H255
EVLX□□U□.□□W□.□□R...	DoMultiRec endmill	H255
EVX...	Endmill with central cutting edge, shank type	H259
EVX□□□□□...U	Endmill with central cutting edge, shank type	H259
EWD□□□□□R	EWD05/07/10 endmill, shank type	H236
EWD□□□□□RU	EWD05/07/10 endmill, shank type	H236
EXLN□□M□□□C...	DoTwistBall endmill, shank type	H048
EXLN□□U□.□□C□.□□R...	DoTwistBall endmill, shank type	H048
EXLS02M□□□C...	TungForceFeed endmill, shank type	H040
EXLS02U□.□□C...	TungForceFeed endmill, shank type	H040
EXN02R□□□M...	AddDoFeed endmill, shank type	H020
EXN02R□□□U...	AddDoFeed endmill, shank type	H020
EXN03R□□□M...	DoFeed endmill, shank type	H024, H025
EXN03R□□□U...	DoFeed endmill, shank type	H024
EXN06R□□□M...	DoFeed endmill, shank type	H025
EXN06R□□□U...	DoFeed endmill, shank type	H025
EXP□□□□□R...	MillFeed endmill, shank type	H053
EXP□□□□□R...U	MillFeed endmill, shank type	H053
EXSW09M□□□C...	MillQuadFeed cutter head	H060
EXSW09U□.□□C...	MillQuadFeed cutter head	H060
EXWX03M□□□C...	DoFeedTri endmill, shank type	H044
EXWX03U□.□□C...	DoFeedTri endmill, shank type	H044

H

HBFM□□M...	BallFinishNose cutter head	H226
HBRM□□M...	BallRoughNose cutter head	H234
HFWX04M□□□M...	DoMini-Mill cutter head	H233
HFZN10M□□□M□□R...	AddForceBarrel cutter head	H231
HPA□□R□□□MM...	Tung-Tri cutter head	H147
HPAV□□M□□□M...	TungForce-Rec cutter head	H139
HPAV06M□□□S...	TungForce-Rec cutter head	H138
HPO□□R□□□MM...	TungRec cutter head	H160
HRP□□R□□□MM...	FixRMill cutter head	H089
HVLX□□M□□□M□□R02	DoMultiRec cutter head	H256
HWD07R□□□MM...	HWD07 Cutter head	H236
HXLN□□M□□□M...	DoTwistBall cutter head	H048
HXLS02M□□□M...	TungForceFeed cutter head	H040
HXN02R□□□M...	AddDoFeed cutter head	H020
HXN03R□□□MM...	DoFeed cutter head	H026
HXSW09M□□□M...	MillQuadFeed cutter head	H061
HXWX03M□□□C...	DoFeedTri cutter head	H044

L

LMEU□□□□□□ZNEN-MJ	TecTangential-Slot insert	H222
LMMU□□□□□□PNER-MJ	TecMill insert	H192
LN25D...	Insert for threading cutter	I076
LNCQ0906□-...	NMS09 / EMS09 insert	H265
LNGU0303ZER-MH	DoFeed 03insert	H031
LNGU06X5ZER-MH	DoFeed 06insert	H031
LNGU06X5ZER-W	DoFeed 06insert	H031
LNMU0202ZER-MM	AddDoFeed 02insert	H021
LNMU0303□ER-MJ	DoFeed 03insert	H031
LNMU0303□ER-ML	DoFeed 03insert	H031
LNMU0303ZER-MS	DoFeed 03insert	H031
LNMU06X5ZER-MJ	DoFeed 06insert	H031
LNMU06X5ZER-ML	DoFeed 06insert	H031
LNMX□□□□R□-MJ	DoTwistBall insert	H050
LNMX□□□□R□-ML	DoTwistBall insert	H050
LNMX□□□□ZER-HJ	DoTwistBall insert	H050
LNMX0405ZER-HL	DoTwistBall insert	H050
LPTC16□□□□B...	TungTri-Shred roughing cutter	H199
LPTC16U□.□□B...	TungTri-Shred roughing cutter	H199
LQMU□□□□□□P□ER-MJ	DoRec insert	H177
LSMT0202R2-MM	TungForceFeed insert	H041
LSMT0202ZER-HM	TungForceFeed insert	H041
LXMU□□□□□□PER-MM	DoMultiRec insert	H257

M

MS□□R/L	MS cutter body	H266
MTEC□□□□□□□□.□ISO	60° solid carbide threading endmill	I058
MTEC□□□□□□□□BSPT	BSPT solid carbide threading endmill	I067
MTEC□□□□□□□□UN	60° solid carbide threading endmill	I063
MTEC□□□□□□□□NPT	BSPT solid carbide threading endmill	I068
MTEC□□□□□□□□W	BSPT solid carbide threading endmill	I066

Designation	Product name	Page
MTECB□□□□□□□□.□ISO	ISO solid carbide threading endmill, with coolant hole	I059
MTECB□□□□□□□□□NPT	NPT solid carbide threading endmill, with coolant hole	I068
MTECB□□□□□□□□□UN	ISO solid carbide threading endmill, with coolant hole	I063
MTECB□□□□□□□□□W	NPT solid carbide threading endmill, with coolant hole	I066
MTECD□□□□□□□□.□ISO	ISO solid carbide thread mill for boring, threading, chamfering	I062
MTECE□□□□□□□□.□ISO	ISO solid carbide external threading endmill	I062
MTECE□□□□□□□□□UN	ISO solid carbide external threading endmill	I065
MTECI□□□□□C□□.□ISO	60° solid carbide threading endmill	I058
MTECI□□□□C□A60	60° solid carbide threading endmill	I057
MTECI□□□□D□□A60	60° solid carbide threading endmill	I057
MTECI□□□□E□□A60	60° solid carbide threading endmill	I057
MTECQ□□□□□□□□.□ISO	ISO solid carbide deep threading endmill, with coolant hole, with coolant hole	I060
MTECS□□□□□□□□.□ISO	ISO small diameter solid carbide threading endmill, short edge type	I061
MTECS□□□□□□□□.□ISOL	ISO small diameter solid carbide threading endmill, short edge type	I061
MTECS□□□□□□□□.□MJ	MJ small diameter solid carbide threading endmill, short edge type, with coolant hole	I069
MTECS□□□□□□□□.□MJ	MJ small diameter solid carbide threading endmill, short edge type, with coolant hole	I069
MTECS□□□□□□□□□UN-L	ISO small diameter solid carbide threading endmill, short edge type	I064
MTECS□□□□□□□□□UNJ	MJ small diameter solid carbide threading endmill, short edge type, with coolant hole	I069
MTECS□□□□□□□□□UN	ISO small diameter solid carbide threading endmill, short edge type	I064
MTECS□□□□□□□□□UNJ	MJ small diameter solid carbide threading endmill, short edge type, with coolant hole	I069
MTECS□□□□□□□□□W	Whitworth solid carbide thread mill for threading, short edge type	I067
MTECS06047C1920UN-L	ISO small diameter solid carbide threading endmill, short edge type	I064
MTECSH□□□□□□□.□ISO	ISO solid carbide thread mill for machining, short edge type, left hand	I062
MTECSH□□□□□□□□□UN	ISO solid carbide thread mill for machining, short edge type, left hand	I065
MTECZ□□□□□□□□.□ISO	ISO solid carbide threading endmill, with coolant hole	I060
MTECZ□□□□□□□□□UN	ISO solid carbide threading endmill, with coolant hole	I064
MTECZ□□□□□□□□□W	NPT solid carbide threading endmill, with coolant hole	I066
MTECZ08076C1027NPTF	NPT solid carbide threading endmill, with coolant hole	I068
MTECZ1010D1618NPTF	NPT solid carbide threading endmill, with coolant hole	I068

N

NMS09□□□R	NMS09 cutter body	H264

O

ON□U0507ANEN-MJ	DoTriple-Mill insert	H097
ON□U0705AN□N-ML	DoOcto insert	H103
ON□U0705ANPN-MJ	DoOcto insert	H103
ONGU0507ANEN-W	DoTriple-Mill insert	H097
ONHU0705ANPR-W	DoOcto insert	H103
OWHT05T3C07AFER-MM	TungEight-Mill insert	H093
OWHT05T3C07AFER-MW	TungEight-Mill insert	H093
OWMT05T3AFER-MM	TungEight-Mill insert	H093
OWMT0807AAER-ML	DoOcto insert	H103
OWMT0807ZNER-HJ	DoOcto insert	H103

P

PN□U0905GNE□-MJ	DoPent insert	H079
PNCU0905GNEN-ML	DoPent insert	H079
PNCU0905GNER-W	DoPent insert	H079
PNCU0905GNFR-AJ	DoPent insert	H079

Q

QA□□K/M	Adapter for TAC mill/QC system	H132

Alphanumeric Index

Designation	Product name	Page
QACB-□□MR/L	A-type set bolt for TAC mill/QC system	H133
R		
R1.□□-...	TungMini-Slit drive flange set for side cutter	H213
RCMT□□□□EN-MJ	RoundSplit insert	H084
RCMT□□□□EN-NMJ	RoundSplit insert	H084
RCMT□□□□FN-NAJ	RoundSplit insert	H084
RDMW□□□□M0	Insert for EWD/HWD	H237
RNGN120700...	CeramicSpeed-Mill insert	H116
RNMU1307ZNER-MJ	DoTriple-Mill insert	H097
RPMT□□□□EN-MJ	FixRMill insert	H090
RPMT□□□□EN-ML	FixRMill insert	H090
RQMT1204ENC□-MM	FixRMill -New design- insert	H087
S		
SCMT□□□□08-23	EBD insert	H243
SD□□42Z...	TMD4400R/LI, EMD4400RI insert	H122, H126
SD□□42Z□N...	TGD4400-A, EGD4400 insert	H122, H126
SD□N42ZTNCR	TGD4400-A, EGD4400 insert	H122, H126
SD□N53Z□N...	TMD5401RI insert	H124
SD□R1203AETN-MJ	TMD4400R/LI, EMD4400RI, TGD4400-A,EGD4400 insert	H122, H126
SD□R42ZSR-MJ	TMD4400R/LI, EMD4400RI, TGD4400-A,EGD4400 insert	H122, H126
SDCN42ZFN-DIA	TMD4400R/LI, EMD4400RI insert	H122, H126
SDHT050204FN-AJ	TungQuad insert	H170, H244
SDKR42ZPN-MS	TMD4400R/LI, EMD4400RI, TGD4400-A,EGD4400 insert	H122, H126
SDKR53ZSR-MJ	TMD5401RI insert	H124
SDMT050204PN-MJ	TungQuad insert	H170, H244
SE□N1203AG□N	TME4400R/LI, TME4400RB, EME4400 insert	H118
SE□N1203AG□N-T	TME4400R/LI, TME4400RB, EME4400 insert	H118
SE□N1203AGTNCR	TME4400R/LI, TME4400RB, EME4400 insert	H118
SE□N1504AG□N	TME5400RI insert	H119
SE□N42ZFR	THE4000RIA insert	H201
SECN42ZFR-DIA	THE4000RIA insert	H201
SEEN1203AGTNCR-14	TME4400R/LI, TME4400RB, EME4400 insert	H118
SEGT12X4ZEFR-AJ	TFE insert	H112
SEGW12X4ZE□R	TFE insert	H112
SEGW12X4ZEFR-BD	TFE insert	H112
SEGW12X4ZEFR-D	TFE insert	H112
SEGW12X4ZEFR-WD	TFE insert	H112
SEKN1504AGTN-T	TME5400RI insert	H119
SEKR1203AGPN-MS	TME4400R/LI, TME4400RB, EME4400 insert	H118
SEKR1203AGSR-MJ	TME4400R/LI, TME4400RB, EME4400 insert	H118
SEKR1504AGSR-MJ	TME5400RI insert	H119
SFP40□□R	SFP4000R cutter body	H267
SM□□-L...	TungFlex Steel modular shank	H038
SM□□-L□□□C□□-H	TungFlex carbide modular shank	H039
SM□□-L□□□C□□-H-N	TungFlex carbide modular shank	H039
SNAA56FTR	MS insert	H266
SN□U1307ANEN-MJ	DoTriple-Mill insert	H097
SN□U1706ANPR-MJ	DoOcto insert	H103
SN□U1706ANTR-ML	DoOcto insert	H103
SNGU1307ANEN-MH	DoTriple-Mill insert	H097
SNGU1307ANEN-W	DoTriple-Mill insert	H097
SNHU1706ANFN-W	DoOcto insert	H103
SNMU1206□□EN-MM	DoQuad-Mill insert	H182
SNMU120608HNEN-MM	DoQuad-Mill insert	H182
SP□N423□N	TGP4200R-A insert	H127, H128
SP□N42S...	TGP4100RIA/BA insert	H127
SP□N42Z...	TGP4200R-A insert	H128
SP□N53S...	TGP5100RIA insert	H129
SPGN120312TN	TGP4100RIA/BA insert	H127
SPHA431FNW	TFP4000IA insert	H209
SPHA435FNW	SFP4000R, EFP4000R insert	H268
SPKN53STR20	TGP5100RIA insert	H129
SPKR42SSR-MJ	TGP4100RIA/BA insert	H127
SPKR53SSR-MJ	TGP5100RIA insert	H129
SPMA422□N	ECP insert	H247
SPMM□□□ERD	TCB insert	H253
SPMP□□□-CG	TCB insert	H253
SPMP□□□ER-CG	TCB insert	H253
SPMP□□□ERD	TCB insert	H253
SPMP831DS	TCB insert	H253
SQMU1206ZSR-MJ	DoFeedQuad insert	H068
SSG□□R...	TungMini-Slit side cutter	H211
SSM□□N	TungMini-Slit insert	H212
SSS□□N	TungMini-Slit insert	H212
SW□□-...	TungMini-Slit drive shank for side cutter	H213
SW□T1304PDPR-MJ	TungMill insert	H196
SW□T13T3AFPR-MJ	TungMill insert	H075
SW1.□□-...	TungMini-Slit drive shank for side cutter	H213
SWGT1304PDFR-AJ	TungMill insert	H196
SWGT13T3AFFR-AJ	TungMill insert	H075
SWMT0904□ER-MM	MillQuadFeed insert	H063
SWMT1304PDER-ML	TungMill insert	H196
SWMT1304PDPR-MS	TungMill insert	H196
SWMT13T3AFER-ML	TungMill insert	H075
SWMT13T3AFPR-HJ	TungMill insert	H075
SWMT13T3AFPR-MS	TungMill insert	H075
SWMT1506□ER-MM	MillQuadFeed insert	H063
SWMT1506ZER-MT	MillQuadFeed insert	H063
SWMW13T3AFTR	TungMill insert	H075
T		
T□-R...	Insert for threading cutter	I078
TAOW05M□□□B...	TungEight-Mill cutter body	H092
TAOW05U□.□□B□.□□R...	TungEight-Mill cutter body	H092
TAN07R□□□M...	DoOcto cutter body	H100, H102
TAN07R□□□U...	DoOcto cutter body	H099, H101
TASN13M□□□B...	DoTriple-Mill cutter body	H096
TASN13J□□□B...	DoTriple-Mill cutter body	H096
TASN13U□.□□B...	DoTriple-Mill cutter body	H095
TASN13U4.00B1.50R□□LF2.5	DoTriple-Mill cutter body	H095
TAW13R□□□M...	TungMill cutter body	H074
TAW13R□□□U...	TungMill cutter body	H073
TBN□□□□S	TBN1000 endmill	H238
TCB-...	Boring cutter	H250
TCB□□□-□□□F32	Boring cutter, cartridge type	H251
TCB□□□F...	Boring cutter	H250
TCGT1606□□PDER-MJ	TungTri-Shred insert	H200
TCGT1606□□PDER-NMJ	TungTri-Shred insert	H200
TE□N32Z□R	TSE3000R, ESE3000Rinsert	H203
TE□N43Z□R	TSE4000RIA, ESE4000R insert	H206
TECN32ZFR-DIA	TSE3000R, ESE3000R insert	H203
TECN43ZFR-DIA	TSE4000RIA, ESE4000R insert	H206
TEKR1603PEPR-MS	TSE3000R, ESE3000R insert	H203
TEKR2204PEPR-MS	TSE4000RIA, ESE4000R insert	H206
TEN09R/L□□□M...	DoPent cutter body	H078
TEN09R□□□U...	DoPent cutter body	H077
TFE12□□□R	TFE cutter body	H110
TFE12□□□RU	TFE cutter body	H110
TFE12R□□□M...	TFE cutter body	H111
TFMRN□□□-□□R-12FL	CeramicSpeed-Mill cutter body	H116
TFMRN□.□□-12...	CeramicSpeed-Mill cutter body	H116
TFP40□□RIA	TFP4000IA cutter body	H208
TGD44□□R-A	TGD4400-A cutter body	H125
TGM16R□□□M□□.□-□□SA	TecMill 60° face mill	H191
TGM16R□□□M□□.□E□□SA	TecMill 60° face mill	H191
TGP41□□RBA	TGP4100RIA/RBA/RBAE cutter body	H127
TGP41□□RBAE	TGP4100RIA/BA/BAE cutter body	H127
TGP41□□RIA	TGP4100RIA/RBA/RBAE cutter body	H127
TGP42□□R-A	TGP4200R-A cutter body	H128
TGP51□□RIA	TGP5100RIA cutter body	H129
THE400□RIA	THE4000RIA cutter body	H201
THSN12J□□□B...	DoQuad-Mill cutter body	H181
THSN12M□□□B...	DoQuad-Mill cutter body	H181
THSN12U□.□□B...	DoQuad-Mill cutter body	H181
TL25D...	Insert for threading cutter	I074
TL25SEIR...	Insert for threading cutter	I075
TLA10R□□□L054M...	Tung-Tri roughing cutter	H149
TLA10R□□□L213U...	Tung-Tri roughing cutter	H149
TLA15R□□□L□□□-□□S	Tung-Tri roughing cutter, subunit	H150
TLA15R□□□L110A□□S	Tung-Tri roughing cutter, subunit	H150
TLA15R□□□L□□□BT50-0□M	Tung-Tri roughing cutter with BT shank	H151
TLA15R□□□L□□□M...	Tung-Tri roughing cutter, main unit	H150
TLA15R□□□L□□□U...	Tung-Tri roughing cutter, main unit	H150
TLM11R□□□M...	TecMill roughing cutter	H192
TLS11R050M22.0E04	TungRec roughing cutter	H164
TLS11R200U0075A04	TungRec roughing cutter	H164
TMD44□□R...	TMD4400R/LI cutter body	H121
TMD44□□RI-U	TMD4400R/LI cutter body	H121
TMD54□□RI...	TMD5400RI cutter body	H123

Designation	Product name	Page
TMD54□□RI-U	TMD5400RI cutter body	H123
TME44□□R...	TME4400R/LI cutter body	H117
TME54□□RI	TME5400RI cutter body	H119
TN□U□□□□□□PER-MJ	DoForce-Tri insert	H173
TNMU120708PER-NMJ	DoForce-Tri insert	H173
TNMU1207R□□PER-MJ	DoForce-Tri insert	H173
TO□T□□□□□□PDER-MJ	Tung-Tri insert	H153
TOGT□□□□□□PDFR-AJ	Tung-Tri insert	H153
TOMT0402□□PXER-MM	Tung-Tri insert	H153
TOMT150604PDER-NMJ	Tung-Tri insert	H153
TP□N43Z...	TFP4000IA insert	H209
TPA□□R□□□M...	Tung-Tri cutter body	H148
TPA□□R□□□U...	Tung-Tri cutter body	H148
TPAV□□M□□□B...	TungForce-Rec cutter body	H140
TPAV12U□.□□B...	TungForce-Rec cutter body	H140
TPD05R□□□M...	TungQuad cutter body	H169
TPD05R□□□U...	TungQuad cutter body	H169
TPEN43ZTRCR	TFP4000IA insert	H209
TPKR43ZSR-MJ	TFP4000IA insert	H209
TPM□□R□□□M...	TecMill square cutter body	H190
TPM□□R□□□U...	TecMill square cutter body	H190
TPM16R□□□M□□.□-□□SA	TecMill square cutter body with shims	H191
TPM16R□□□M□□.□E□□SA	TecMill square cutter body with shims	H191
TPMR2204PDSR-MJ	TFP4000IA insert	H209
TPO□□R□□□M...	TungRec cutter body	H162
TPO□□R□□□U...	TungRec cutter body	H162
TPQ□□R□□□M...	DoRec cutter body	H176
TPQ□□R□□□U...	DoRec cutter body	H176
TPTC16M□□□B...	TungTri-Shred cutter body	H198
TPTC16U□.□□B...	TungTri-Shred cutter body	H198
TPTN□□J□□□B...	DoForce-Tri cutter body	H172
TPTN□□M□□□B...	DoForce-Tri cutter body	H172
TPTN□□U□.□□B...	DoForce-Tri cutter body	H172
TPV16R□□□M...	Tung-AluMill cutter body	H185
TPV16R□□□U...	Tung-AluMill cutter body	H185
TPW13R□□□M...	TungMill cutter body	H195
TPW13R□□□U...	TungMill cutter body	H194
TPYD06J□□□B...	TungSpeed-Mill cutter body	H106
TPYD06M□□□B...	TungSpeed-Mill cutter body	H106
TPYD06U□.□□B...	TungSpeed-Mill cutter body	H106
TPYP12J□□□B...	TungSpeed-Mill cutter body	H108
TPYP12M□□□B...	TungSpeed-Mill cutter body	H108
TRC□□R□□□M...	RoundSplit cutter body	H082
TRC□□R□□□U...	RoundSplit cutter body	H082
TRP□□R□□□M...	FixRMill cutter body	H089
TRP□□R□□□U...	FixRMill cutter body	H089
TRRQ12M□□□B...	FixRMill -New design- cutter body	H086
TSE30□□R	TSE3000R cutter body	H202
TSE30□□R-E	TSE3000R cutter body	H202
TSE30□□RIA	TSE3000R cutter body	H202
TSE40□□RIA	TSE4000RIA cutter body	H204
TSE400□RIAU	TSE4000RIA cutter body	H204
TSN□□R□□□M...	TecTangential-Slot radial drive slot mill	H221
TSP40□□RIA	TSP4000IA cutter body	H207
TSP400□RIA-U	TSP4000IA cutter body	H207
TSW□□R...	TungUniversalSlot radial drive slot mill	H218
TSW□□R□□□-U...	TungUniversalSlot radial drive slot mill	H218
TVKX□□□□□□FN-MJ	TungThinSlit insert	H216
TVKX□□□□□□TN-MJ	TungThinSlit insert	H216
TXLN□□M□□□B...	DoTwistBall cutter body	H049
TXLN□□U□.□□B...	DoTwistBall cutter body	H049
TXN03R□□□M...	DoFeed cutter body	H027
TXN03R□□□U...	DoFeed cutter body	H027
TXN06R□□□M...	DoFeed cutter body	H028
TXN06R□□□U...	DoFeed cutter body	H028
TXP□□□□□R...	MillFeed cutter body	H054
TXP□□□□□RU...	MillFeed cutter body	H054
TXP□□□□□RBU	MillFeed cutter body	H054
TXQ12R□□□M...	DoFeedQuad cutter body	H067
TXQ12R□□□U...	DoFeedQuad cutter body	H067
TXSW□□J□□□B...	MillQuadFeed cutter body	H062
TXSW□□M□□□B...	MillQuadFeed cutter body	H062
TXSW□□U□.□□B...	MillQuadFeed cutter body	H062
TXWX03M□□□B...	DoFeedTri cutter body	H045
TXWX03U□.□□B...	DoFeedTri cutter body	H045
TZF110...	TZF11 cutter body	H263
TZP120...	TZP12 cutter body	H261

Designation	Product name	Page
TZP19□□□R	TZP19 cutter body	H262
V		
VAD□□□L□□□S08-S-M...	TungMeister adapter for TungFlex connection	I053
VBB□□□L□□.□-BG-02S...	TungMeister head	I026
VBB□□□L□□-BG-U02S...	TungMeister head	I026
VBB□□□L□□.□-BM-02S...	TungMeister head	I026
VBB□□□L□□□-BM-U02S...	TungMeister head	I026
VBB□□□L□□.□-SG-02S...	TungMeister head	I028
VBB□□□L□□-SG-U02S...	TungMeister head	I028
VBD□□□L□□.□-BG-02S...	TungMeister head	I027
VBD□□□L□□-BG-U02S...	TungMeister head	I027
VBD□□□L□□.□-BG-04S...	TungMeister head	I027
VBD□□□L□□-BG-U04S...	TungMeister head	I027
VBE□□□L□□.□-BG-04S...	TungMeister head	I027
VBE□□□L□□-BG-U04S...	TungMeister head	I027
VBE□□□L□□.□-BGA02S...	TungMeister head	I028
VBE□□□L□□-BGAU02S...	TungMeister head	I028
VBL□□□L□.□□R□□□-6S...	TungMeister head	I033
VBN□□□L□□.□R□□□-6S...	TungMeister head	I032
VBO□□□L□□.□R□□□-4S...	TungMeister head	I032
VBO□□□L□□.□R□□□-5S...	TungMeister head	I032
VCR□□□L□□.□R□□-02S...	TungMeister head	I035
VCA□□□□L□□.□A45-04S...	TungMeister head	I035
VCA□□□□L□□.□A45-06S...	TungMeister head	I035
VCA0375L16A45-U04S06	TungMeister head	I035
VCP□□□L□□.□A□□-02S...	TungMeister head	I036
VCW118L05.0A45-02S06	TungMeister head	I035
VDP□□□L□.□□A30-02S...	TungMeister head	I038
VDP□□□L□□.□A30-02S...	TungMeister head	I038
VDP□□□L□□.□B30-02S...	TungMeister head	I038
VDS□□□A45-02S...	TungMeister head	I037
VED□□□L□□.□C□□R04S...	TungMeister head	I018
VED□□□L□□.□C□□R05S...	TungMeister head	I018
VED□□□L□□.□C□□R06S...	TungMeister head	I018
VED□□□L□□.□C□□RU04S...	TungMeister head	I018
VED□□□L□□.□C□□RU05S...	TungMeister head	I018
VED□□□L□□.□C□□RU06S...	TungMeister head	I018
VED□□□L□□.□R□□-04S...	TungMeister head	I014
VED□□□L□□R□□□-U04S...	TungMeister head	I013
VED□□□L□□.□R□□-06S...	TungMeister head	I020
VED□□□L□□R□□□-U06S...	TungMeister head	I020
VED□□□L□□.□R□□-08S...	TungMeister head	I021
VED□□□L□□R□□□-U08S...	TungMeister head	I021
VED□□□L□□.□R□□-10S...	TungMeister head	I021
VED□□□L□□R□□□-U10S...	TungMeister head	I021
VED□□□L□□.□R□□I07S...	TungMeister head	I021
VED□□□L□□.□R□□I09S...	TungMeister head	I021
VED250L37.0C50I06S15	TungMeister head	I018
VEE□□□L□□.□C□□-06S...	TungMeister head	I020
VEE□□□L□□C□□□-U06S...	TungMeister head	I020
VEE□□□L□□.□C□□-08S...	TungMeister head	I021
VEE□□□L□□C□□□-U08S...	TungMeister head	I021
VEE□□□L□□.□C□□-10S...	TungMeister head	I021
VEE□□□L□□C□□□-U10S...	TungMeister head	I021
VEE□□□L□□.□C□□C04S...	TungMeister head	I019
VEE□□□L□□C□□□CU04S...	TungMeister head	I019
VEE□□□L□□.□C□□I04S...	TungMeister head	I015
VEE□□□L□□C□□□IU04S...	TungMeister head	I015
VEE□□□L□□.□C□□R04S...	TungMeister head	I018
VEE□□□L□□C□□□RU04S...	TungMeister head	I018
VEE□□□L□□.□C□□R05S...	TungMeister head	I018
VEE□□□L□□C□□□RU05S...	TungMeister head	I018
VEE□□□L□□.□C□□R06S...	TungMeister head	I018
VEE□□□L□□C□□□RU06S...	TungMeister head	I018
VEE□□□L□□.□R□□-03S...	TungMeister head	I016
VEE□□□L□□R000-U03S...	TungMeister head	I016
VEE□□□L□□.□R□□-04S...	TungMeister head	I014
VEE□□□L□□R□□□-U04S...	TungMeister head	I013
VEE□□□L□□.□R□□-06S...	TungMeister head	I020
VEE□□□L□□R□□□-U06S...	TungMeister head	I020
VEE□□□L□□.□R□□A02S...	TungMeister head	I016
VEE□□□L□□R□□□AU02S...	TungMeister head	I016
VEE□□□L□□.□R□□A03S...	TungMeister head	I017
VEE□□□L□□R□□□AU03S...	TungMeister head	I017
VEE□□□L□□.□R□□I04S...	TungMeister head	I015
VEE□□□L□□R□□□IU04S15	TungMeister head	I015

Alphanumeric Index

Designation	Product name	Page
VEH□□□L□□.□R□□I04S...	TungMeister head	I012
VER□□AL□□□S□□-S	TungMeister adapter for ER collet connection	I054
VFM□□□L□□.□R□□I06S...	TungMeister head	I023
VFX□□□L□.□□R□□E04S...	TungMeister head	I025
VFX□□□L□.□□R□□E06S...	TungMeister head	I025
VFX□□□L□.□□R□□H04S...	TungMeister head	I025
VFX□□□L□□.□R□□-02S...	TungMeister head	I024
VGC□□□L□□.□R□□-02S...	TungMeister head	I039
VGC□□□L□□R□□□-U02S...	TungMeister head	I039
VMT□□□L□□IS□□-...	TungMeister head	I044
VMT□□□L□□UN□□-...	TungMeister head	I044
VMT□□□L□□W□□-...	TungMeister head	I045
VRB□□□L□□.□R□□-02S...	TungMeister head	I030
VRB□□□L□□R□□□-U02S...	TungMeister head	I030
VRC□□□L□□.□R□□-02S...	TungMeister head	I030
VRD□□□L□□.□R□□-06S...	TungMeister head	I030
VRD□□□L□□R□□□-U06S...	TungMeister head	I030
VSC□□□L□□□S□□-...	TungMeister shank	I053
VSSD□□L□□□LS□□-C-A	TungMeister shank	I049
VSSD□□L□□□LS□□-S-A	TungMeister shank	I049
VSSD□□L□□□S□□-C	TungMeister shank	I048, I049
VSSD□□L□□□S□□-C-A	TungMeister shank	I049
VSSD□□L□□□S□□-S	TungMeister shank	I048, I049
VSSD□□L□□□S□□-S-A	TungMeister shank	I049
VSSD□□L□□□S□□-W-A	TungMeister shank	I050
VSSD□□L□□□W□□-S	TungMeister shank	I050
VSSD□□L□□□W□□US	TungMeister shank	I050
VSTD□□L□□□S□□-S	TungMeister shank	I053
VST□□□L□□□S□□US	TungMeister shank	I053
VST□□□L□□.□□A45-□S...	TungMeister head	I041
VST□□□W□.□□R□□□-3S06	TungMeister head	I040
VST□□□W□.□□R□□□-4S08	TungMeister head	I041
VST□□□W□.□□R□□□-6S10	TungMeister head	I041
VTB□□□W□.□□R04-06S...	TungMeister head	I042
VTB□□□W□□□R016-U06S...	TungMeister head	I042
VTB135W2.00C15-06S05	TungMeister head	I043
VTB05W□□□C006-U06S05	TungMeister head	I043
VTR□□□L□□IS□□-□S...	TungMeister head	I045
VTR220L24W14-4S08	TungMeister head	I045
VTS□□□L□□□S□□UC	TungMeister shank	I051
VTS□□□L□□□S□□US	TungMeister shank	I051
VTS□□□L□□□S□□UW	TungMeister shank	I051
VTSD□□L□□□S□□-C	TungMeister shank	I052
VTSD□□L□□□S□□-S	TungMeister shank	I052
VTSD□□L□□□S□□-W-A	TungMeister shank	I052

W		
WCMT□□□□□□-D4	EVX insert	H260
WDCN42ZFR-DIA	TMD4400R/LI, EMD4400RI, TGD4400-A, EGD4400 insert	H122, H126
WECN42ZFR-DIA	THE4000RIA insert	H201
WNGU□□□□□□TN-MJ	TungUniversalSlot insert	H219
WPAN42SFR	TGP4100RIA/BA insert	H127
WPAN42SFRS	TGP4100RIA/BA insert	H127
WPAN42ZFR	TGP4200R-A insert	H128
WPMT□□□□□□ZPR-DML	MillFeed insert	H056
WPMT□□□□□□ZPR-MH	MillFeed insert	H056
WPMT□□□□□□ZPR-ML	MillFeed insert	H056
WPMW□□□□□□ZPR	MillFeed insert	H056
WPMT080615ZSR	MillFeed insert	H056
WPMT090725ZSR	MillFeed insert	H056
WWCW13T3AF□R-WS	TungMill insert	H075
WWCW13T3AFFR-WD	TungMill insert	H075
WXHU0403□□R-MJ	DoMini-Mill insert	H233
WXMU0303ZER-MM	DoFeedTri insert	H045

X		
XCET310404ER	ECC insert	H248
XVCT16□□□□R-AJ	Tung-AluMill insert	H186
XVCT16□□□□PEFR-AM	Tung-AluMill insert	H186
XXMU□□□□□PR-MJ	EVX insert	H260

Y		
YDEN0603□□PDFR-D	TungSpeed-Mill insert	H107
YDEN0603PD□R-D	TungSpeed-Mill insert	H107
YDEN0603PDCR-LD	TungSpeed-Mill insert	H107
YDEN0603PDFR-BD	TungSpeed-Mill insert	H107
YDEN0603PDFR-WD	TungSpeed-Mill insert	H107
YDEN0905PDFR-BD	DPD09 / EDPD09 insert	H115
YDEN0905PDFR-D	DPD09 / EDPD09 insert	H115
YDEN0905PDFR-WD	DPD09 / EDPD09 insert	H115
YPEB12X3-□□□□R-D	TungSpeed-Mill insert	H109

Z		
ZDMT□□□□-MJ	EBD insert	H243
ZFBM□□□R00-MJ	BallFinishNose insert	H228
ZFBU□□□R00-MJ	BallFinishNose insert	H227
ZFBU□□□R00-ML	BallFinishNose insert	H227
ZFCBM□□□R□□□-MM	BallFinishNose insert	H228
ZFRM□□□R□□-MJ	BallFinishNose insert	H228
ZFRU□□□R□□□-MJ	BallFinishNose insert	H227
ZNCA□□□□FN	TBN1000 insert	H238
ZNCA1002FN2	TBN1000 insert	H238
ZNHU1003R□0-MM	AddForceBarrel insert	H231
ZNMM□□□□EN	TBN1000 insert	H238
ZPCW□□□□-QBN	EBB insert	H242
ZPET□□□□-MJ	EBP insert	H241
ZPET□□□U-MJ	EBP insert	H241
ZRBM□□□-MM	BallRoughNose insert	H235
ZRBU□□□-MM	BallRoughNose insert	H235

MEMO

MEMO

MEMO

Worldwide Network





Tungaloy Corporation Head Office
11-1 Yoshima Kogyodanchi
Iwaki 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
tungaloy.com/jp

Iwaki Plant
Products: Cutting Tools

Nagoya Plant
Products: Cutting Tools

Kyushu Plant
Products: CBN
PCD Tools
Deep Hole Drills

Nirasaki Plant
Products: Cutting Tools
Friction Materials (TungFric)
Wear Resistant Tools
Civil Engineering Tools

Tungaloy-NTK America Inc.
3726 N. Ventura Drive
Arlington Heights
IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford
Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C/ Los Arellano 113
Parque Industrial Siglo XXI
Aguascalientes, AGS
Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
tungaloy.com/mx

Tungaloy-NTK do Brasil Ltda.
Avd. Independencia N4158
Residencial Flora
13280-000 Vinhedo
São Paulo, Brazil
Phone: +55-19-38262757
Fax: +55-19-38262757
tungaloy.com/br

Tungaloy-NTK Germany GmbH.
Katzbergstr. 3a
D-40764 Langenfeld, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
tungaloy.com/de

Tungaloy France s.a.s
Les Fjords
19 avenue de Norvège
91140 Villebon Sur Yvette, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
tungaloy.com/fr

Tungaloy Italia S.r.l.
Viale Sarca 336/Edificio 13
20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
tungaloy.com/it

Tungaloy Czech s.r.o
Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
tungaloy.com/cz

Tungaloy Ibérica S.L.
C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
tungaloy.com/es

Tungaloy Scandinavia AB
Bultgatan 38, 442 40
Kungälv, Sweden
Phone: +46-462119200
Fax: +46-462119207
tungaloy.com/se

Tungaloy Rus, LLC
Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
tungaloy.com/ru

Tungaloy Polska Sp. z o.o.
ul. Irysowa 1, 55-040 Bielany
Wrocławskie, Poland
Phone: +48 607 907 237
tungaloy.com/pl

Tungaloy-NTK UK Ltd.
Suite 3, Pioneer House, Mill Street,
Cannock, WS11 0EF, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
tungaloy.com/uk

Tungaloy Hungary Kft
Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
tungaloy.com/hu

Tungaloy Turkey
Serifali Mah.bayraktar
Bulvari Kule Sk. No:26
34775 Umraniye / Istanbul / Turkey
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
tungaloy.com/tr

Tungaloy Benelux b.v.
Tjalk 70
NL-2411 NZ Bodegraven Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
tungaloy.com/nl

Tungaloy Croatia
Ulica bana Josipa Jelačića 87,
10430 Samobor, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
tungaloy.com/hr

Tungaloy Cutting Tool (Shanghai) Co. Ltd.
Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
tungaloy.com/cn

Tungaloy-NTK Cutting Tool (Thailand) Co.,Ltd.
Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok
10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
tungaloy.com/th

Tungaloy Cutting Tools Taiwan Co. Ltd.
9F. No.293, Zhongyang Rd,
Xinzhuang Dist, New Taipei City,
24251 Taiwan
Phone: +886-2-8521-9986
Fax: +886-2-8521-8935
tungaloy.com/tw

Tungaloy Singapore (Pte.), Ltd.
62 Ubi Road 1
#06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
tungaloy.com/sg

Tungaloy-NTK Vietnam LLC
3rd Floor, Licogi 13 Tower, 164 Khuat Duy Tien, Nhan Chinh, Thanh Xuan District, Hanoi, Vietnam
Phone: +84 24 63282086
tungaloy.com/vn

Tungaloy India Pvt. Ltd.
One International Center,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai -400013, India
Phone: +91-22-6124-8803
Fax: +91-22-6124-8899
tungaloy.com/in

Tungaloy Korea Co., Ltd
#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
tungaloy.com/kr

Tungaloy Malaysia Sdn Bhd
50 K-2, Kelana Mall, Jalan
SS6/14, Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
tungaloy.com/my

Tungaloy Australia Pty Ltd
Unit 68 1470 Ferntree Gully Road
Knoxfield 3180 Victoria, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
tungaloy.com/au

PT. Tungaloy Indonesia
Ruko Blok AA.10 No3&5, Grand
Wisata, Lambangjaya, Tambun
Selatan, Bekasi, 17510 Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
tungaloy.com/id





Tungaloy Corporation (Head office)
11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima, 970-1144 Japan
Phone: +81-246-36-8501 Fax: +81-246-36-8542
tungaloy.com

Tungaloy-NTK America Inc.
3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394 Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779 Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C Los Arellano 113, Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone:+52-449-929-5410 Fax:+52-449-929-5411
tungaloy.com/mx





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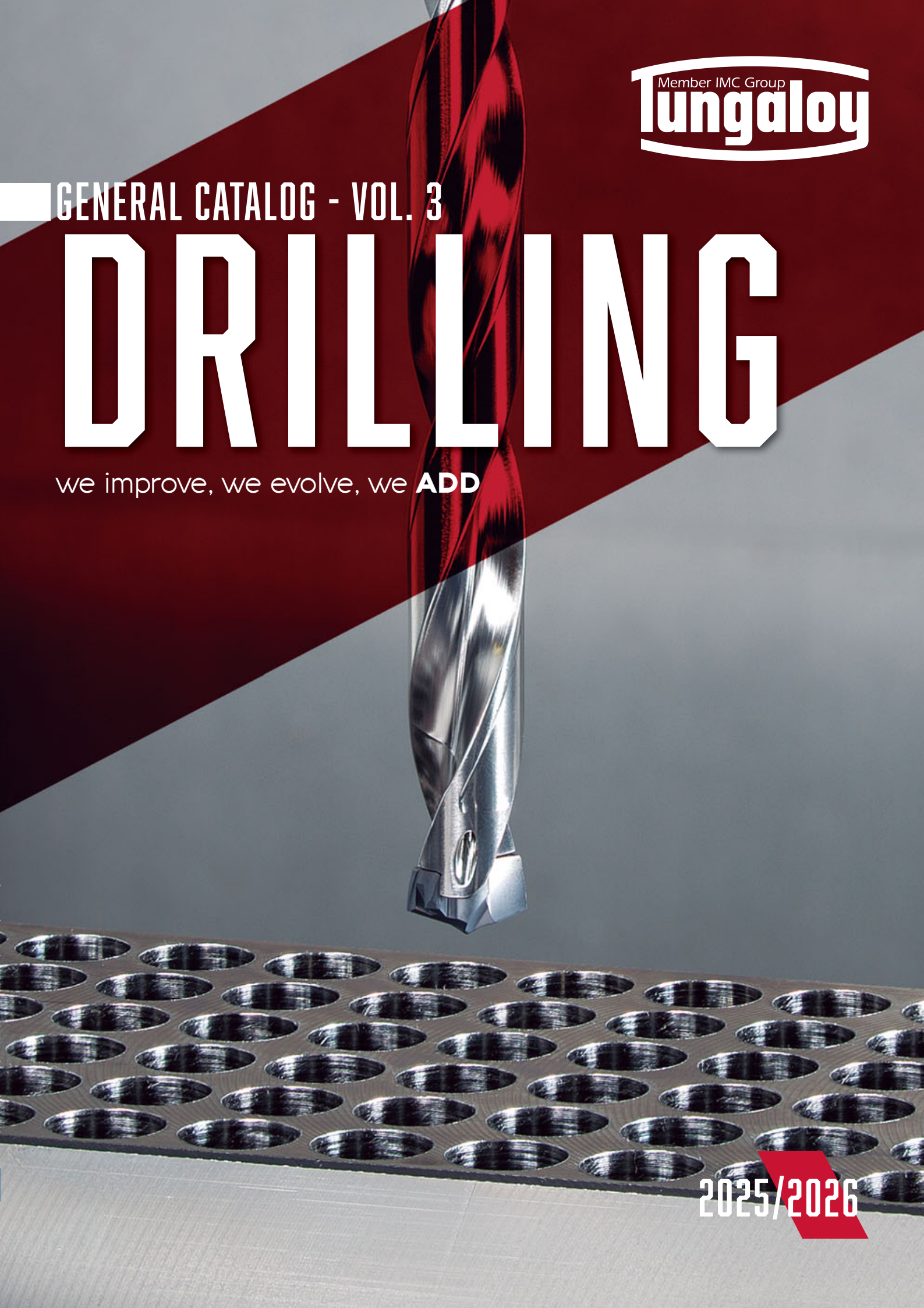
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Tungaloy

GENERAL CATALOG - VOL. 3

DRILLING

we improve, we evolve, we **ADD**



2025/2026



Member IMC Group Tungaloy

Tungaloy's Insights – Smart Manufacturing

Tungaloy, as one of the leaders in the metal removal industry, offers the latest innovations in grades and geometries for superb performance and tool life.

Tungaloy's latest innovations in cutting tools contribute to carbon neutrality

TUNGALOY ADDFORCE ACCELERATED LINES

THINK GREEN

VOL. 3

DRILLING

A Grade A001 -

B Insert B001 -

C External Toolholder C001 -

D Internal Toolholder D001 -

E Threading Tool E001 -

F Parting, Grooving F001 -

G Miniature Machining G001 -

H Milling Cutter H001 -

I Endmill I001 -

J Drilling Tool J001 -

K Tooling System K001 -

L User's Guide L001 -

M Alphanumeric Index M001 -

About Tungaloy Cutting Tool Catalog

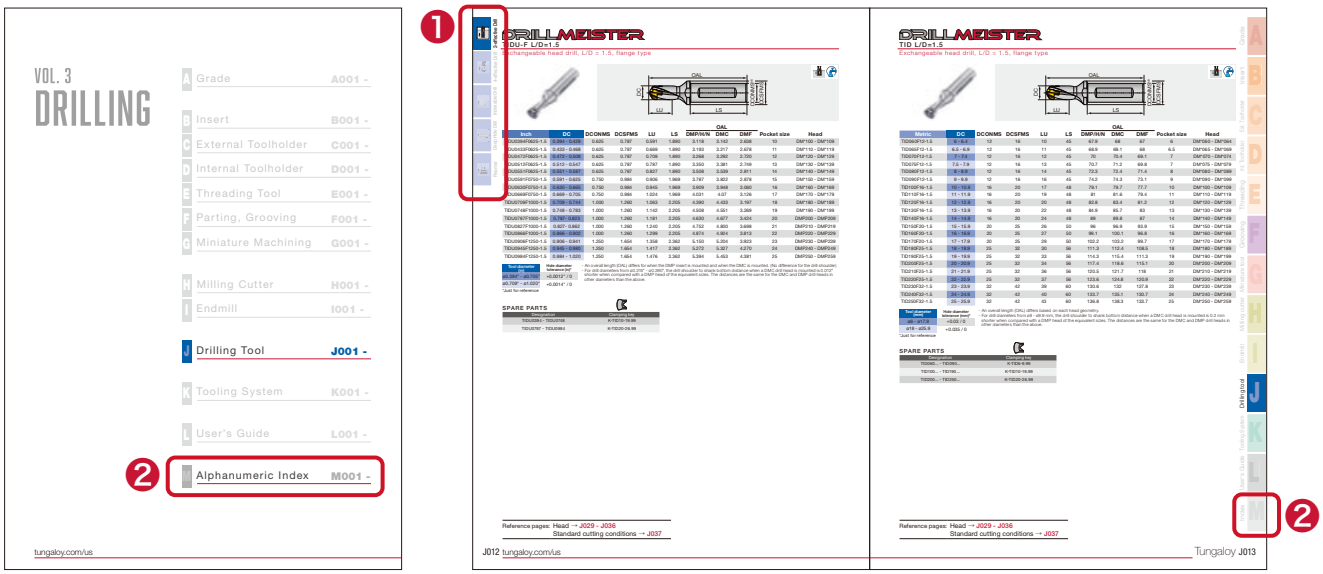
Note in using this catalog:

★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in inch (in) and millimeters (mm) where applicable.

★ For indexable tools, such as drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:



❶ Select the tool type at the application index on the left pages.

❷ The index is in the alphanumerical order. Use it for your product search.

How to read the list for the standard items:

★ Designations for indexable tools – drill bodies, holders, etc.

· Orders are to be received for the tools with the designations in the catalog.

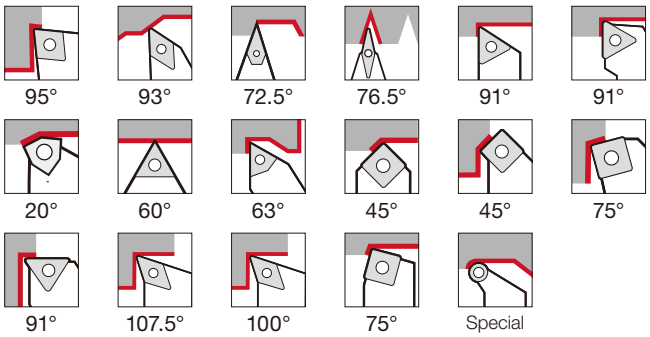
★ Lineup for drill heads and solid tools

Blank : Please contact us regarding the product.

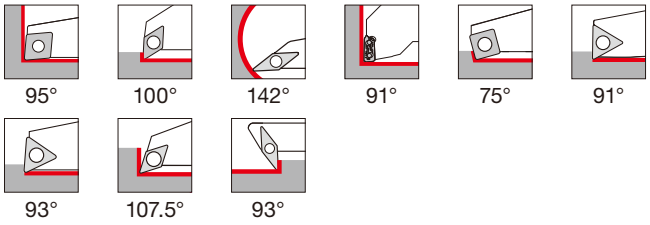
About Tungaloy Cutting Tool Catalog

Icons at the left side of each page

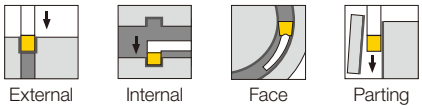
External toolholder (cutting edge shape / angle)



Internal toolholder (cutting edge shape / angle)



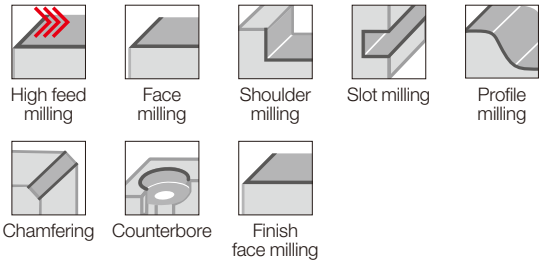
Parting, Grooving



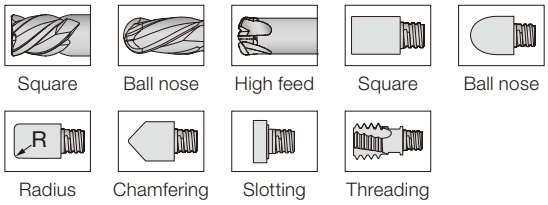
Miniature machining



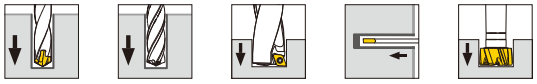
Mill



Endmill

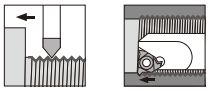


Drill

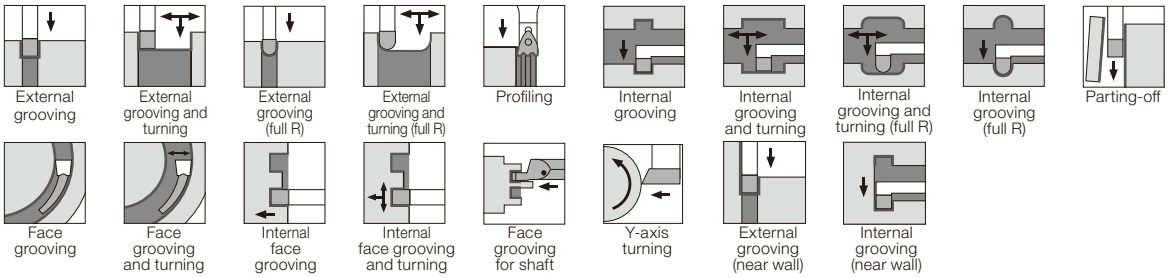


Icons for applications of each product

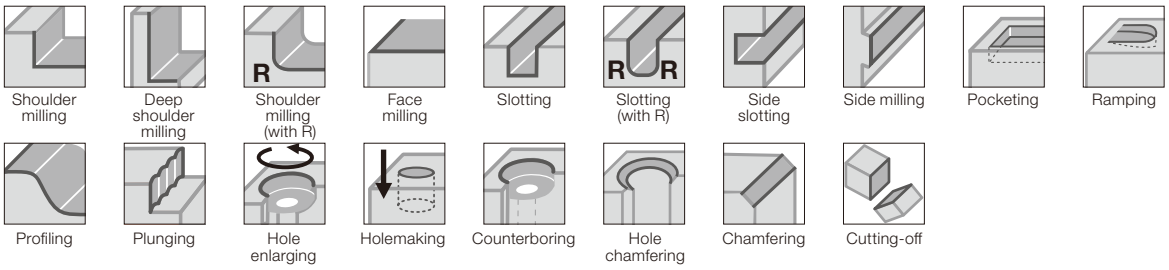
Threading



Grooving



Milling



Drilling



About the dimension symbols conforming to ISO13399

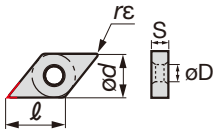
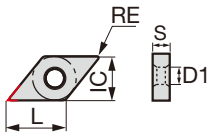
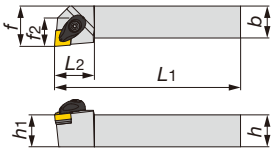
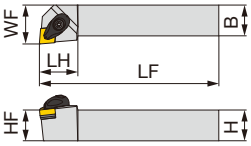
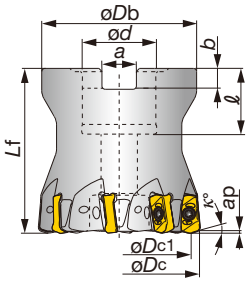
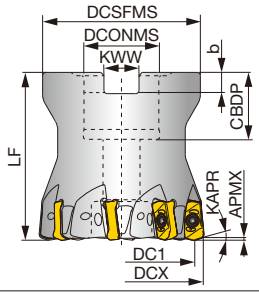
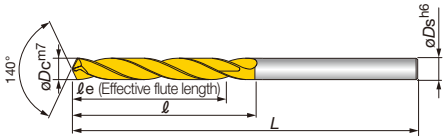
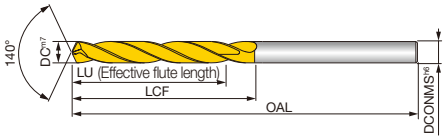
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard.
Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition to General Catalog (paper catalog), we are also updating the symbols in e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. *ap*	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	*ød*1	Mounting hole diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DMIN	*øDm*	Minimum machining diameter
EPSR	-	Nose angle
GAN	-	Rake angle (insert)
IC	*ød*	Inscribed circle diameter
INSD	A	Insert diameter (round type)
INSL	B	Insert length
KAPR	κ	Approach angle
LBB	-	Chipbreaker width
LE	A	Effective cutting edge length
LF	*L*1	Standard length
M	m	Distance from inscribed circle to cutting edge (m dimension)
PDX	t	Thread position (X direction)
PDY	*ℓ*3	Thread position (Y direction)
PNA	*θ*	Cutting edge angle
PSIRL	*θ*	Left-hand front cutting edge angle
PSIRR	*θ*	Right-hand front cutting edge angle
RE	*r*	Corner radius
S	T	Thickness
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	*øD*1, *øD*2, *øD*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	*øD*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	*øD*m	Minimum diameter in face grooving
DAXX	*øD*max	Maximum diameter in face grooving
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød*2	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	*θ*	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	*β*	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

About the dimension symbols conforming to ISO13399

Tooling system

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
BTED	*ød1*	Taper tip diameter
CRKS	S	Mounting screw size
DBC	*ød3*	Bolt hole pitch diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α, R.R.	Radial rake angle
GAMP	*θ*, A.R.	Axial rake angle
KAPR	κ	Cutting edge angle
LB	*L2*, *L3*	Body length
LF	*L*	Standard length
LPR	*L1*	Parting length
LS	*ℓs*	Shank length
LSC	*Lmin*	Clamp length
LSCX	*Lmax*	Maximum clamp length
OAH	H4	Overall height
OAL	*L*	Overall length
OAW	*W*	Overall width
THID	-	Mounting screw size
WB	*W*	Body width
WF	*f*	Standard width

Drilling

New symbol	Old symbol	Description
BD	*øD1*, *øD2*, *øD3*	Body external diameter
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CRKS	*S*	Mounting screw size
DC	*øDc*	Machining diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øD*	Connecting part diameter
KAPR	κ	Cutting edge angle
LCF	*ℓ*	Flute length
LF	*Lf*	Standard length (from the drill shoulder)
LPR	-	Parting length (from flange to tip)
LS	*ℓs*	Shank length
LU	*ℓ*	Machinable depth
NOF	z	Number of flutes
OAL	*L*	Overall length (from tip)
PL	PL	Distance from drill tip to shoulder
ZEFP	Z eff	Number of effective cutting edges on periphery

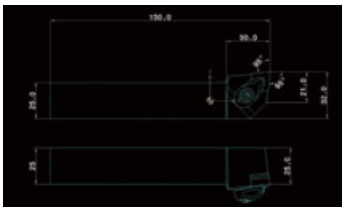
Milling

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
CBDP	*ℓ*	Mounting hole depth
CDX	Max. *ae*	Maximum slot width
CHW	k	Chamfer width on the corner
CICT	z	Number of inserts
CRKS	S	Mounting screw size
CW	W	Slotting edge width
CWN	-	Minimum slotting edge width
CWX	-	Maximum slotting edge width
DBC	*ød3*	Bolt hole pitch diameter
DC	*øDc*	Machining diameter
DCONMS	*ød*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øDb*	Mounting surface diameter on the machine
DCX	*øDc1*	Maximum machining diameter
GAMF	R.R.	Radial rake angle
GAMP	A.R.	Axial rake angle
H	T	Width across flat
KAPR	κ	Cutting edge angle
KWW	*a*	Drive key width
LF	*Lf*	Standard length
LH	*Lf*	Neck length
LS	*ℓs*	Shank length
NOF	z	Number of flutes
OAL	*L*, *L6*	Overall length
PDX	*t*	Thread position (X direction)
PNA	*θ*	Cutting edge angle
PSIR	*β*	Lead angle
RMPX	*θ*	Maximum ramping angle
THUB	T	Hub height (slot mill)
WT	Kg	Weight
ZEFP	Z eff	Number of effective cutting edges on the periphery

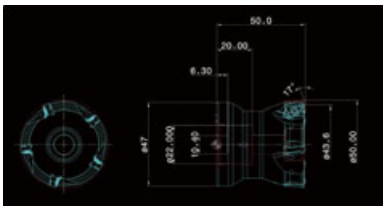
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● 2D data (DXF format file)



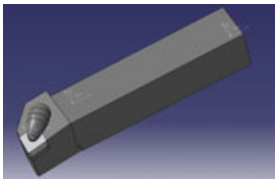
Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● 3D data Light type (STP format file): Can be used to check tool path and interference.

Turning: Equipped with an insert with a standard corner radius.

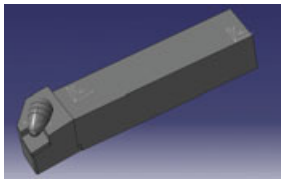


Milling: A rotating body model of an actual cutting edge curve and a body cross section.



● 3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on a CAD software.)

Turning



Milling



Drilling Tool



Drilling Tool - Content structure

- Products are listed in the order of 2 effective drill, 4 effective drill, indexable drill, deep hole drill, then reamer.
- The lists for each item start from the smallest tool diameter.

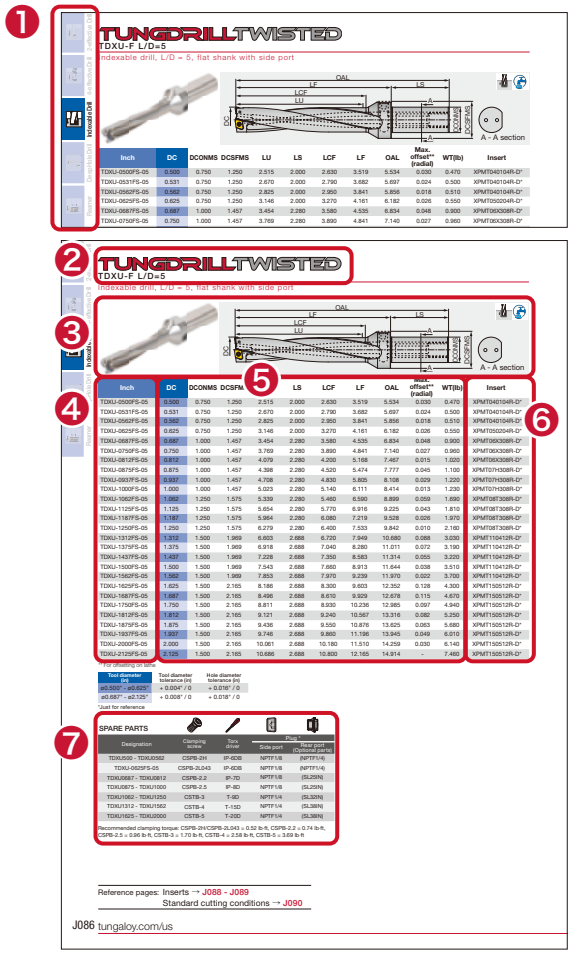
How to use the page

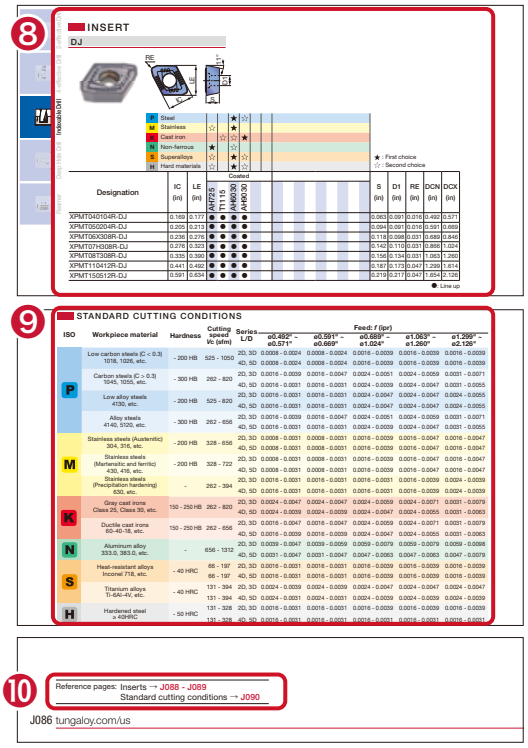
Method ① Select the drill shape described at the left edge of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❺). Applicable inserts are shown in (❻) and (❽).

Method ② Select the drill shape on J003 and check the details on the product page.

Method ③ Select the drill series name on J004 - J005 and check the details on each page.

Method ④ Select an item from Quick Guide on J006 - J007.



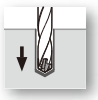
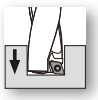
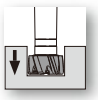


❶ : Drill Shape
❷ : Name of the series
❸ : Appearance and dimensions
❹ : Designation
❺ : Dimension
❻ : Applicable inserts

❼ : Spare parts
❽ : Inserts
❾ : Standard cutting conditions
❿ : Reference page

When ordering
- Please specify the designation and quantity for Indexable drills.
  e.g. **TDXU-0625S-02...** 1 (one Indexable drill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **XPMT050204R-DJ AH725 ...** 10 (10 inserts per package)
  *You will find a note if the number per package is not 10.
- Please specify the designation and quantity for solid/brazed drills.
  e.g. **DSW030-014-06DE3 ...** 1 (one solid/brazed drill per package)

Drilling Tool

	Inch	Metric
 2 Effective Drill — J004, J006 J009 -	✓	✓
 4 Effective Drill — J004, J006 J066	✓	✓
 Indexable Drill — J004, J006 - J069 -	✓	✓
 Deep Hole Drill — J004, J007 J105 -	✓	✓
 Reamer — J007 J182 -	✓	✓

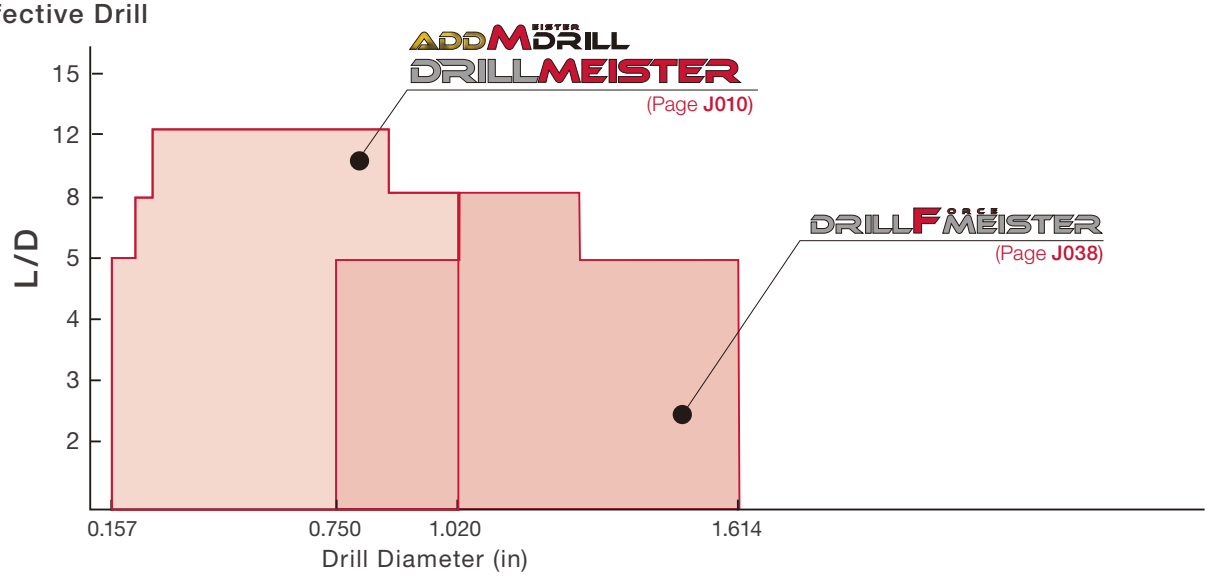
Basic Selection of Drilling Tools

Application ranges of drilling tools

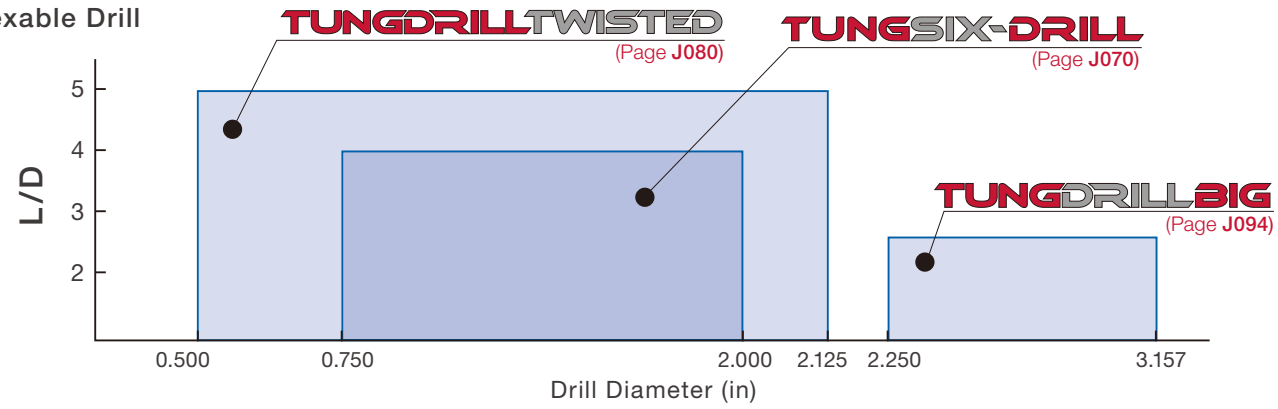
Exchangeable Head Drills & Indexable Drills

Inch

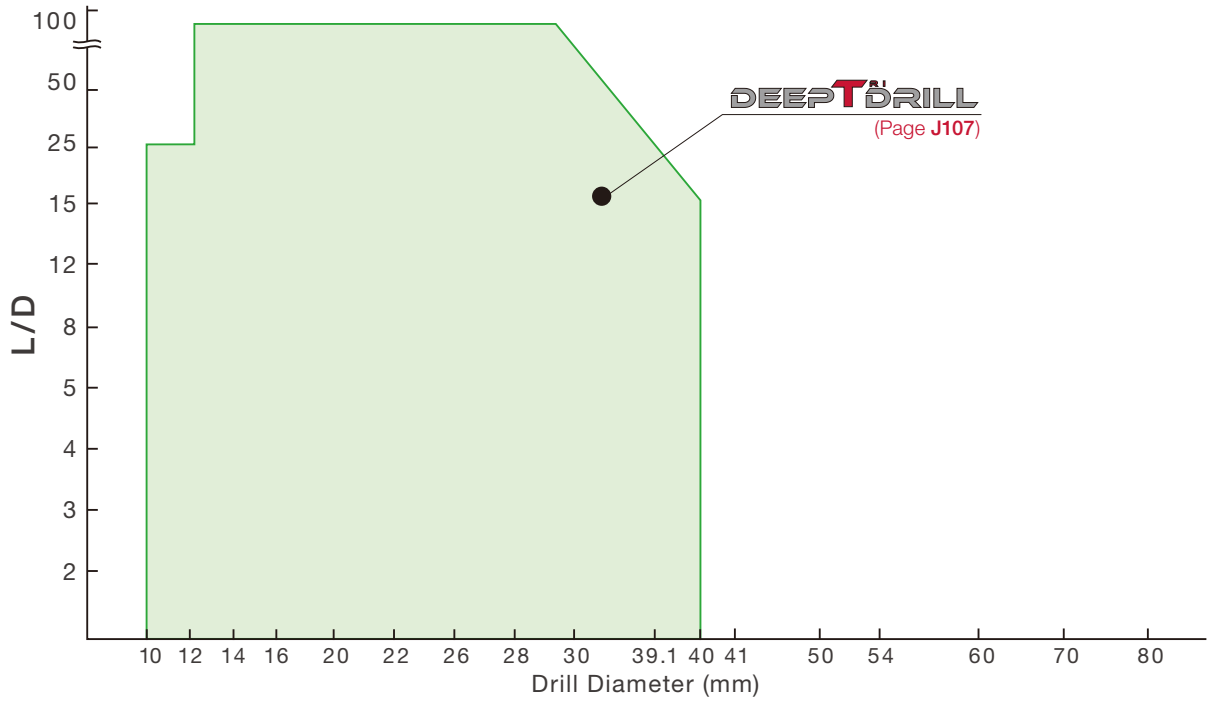
2 Effective Drill



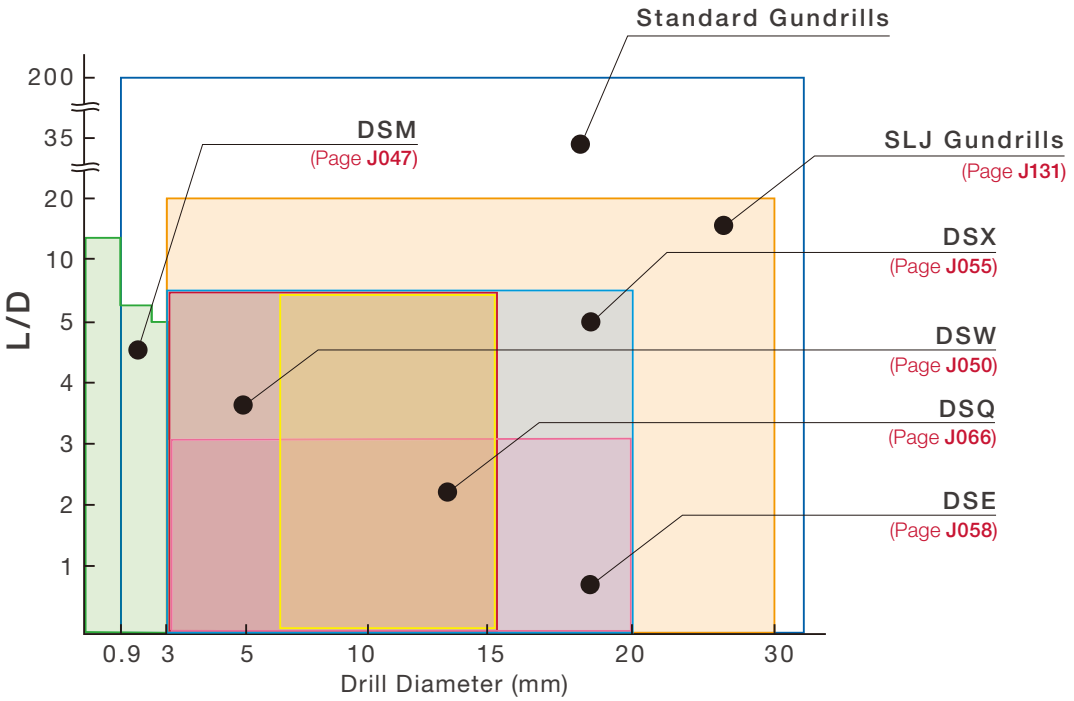
Indexable Drill



Deep Hole Drill



Solid Drills, Brazed Carbide Drills



Hole diameter tolerance*

*Just for reference

TUNGSIX-DRILL

L/D	in / mm	Tool diameter	Hole diameter tolerance*
2	inch	ø0.750 - ø1.062	+ 0.014 / 0
	mm	ø20 - ø27	+ 0.25 / 0
		ø28 - ø54	+ 0.3 / 0
3	inch	ø0.750 - ø1.062	+ 0.014 / 0
	mm	ø20 - ø27	+ 0.25 / 0
		ø28 - ø54	+ 0.3 / 0
4	inch	ø0.750 - ø2.000	+ 0.014 / 0
	mm	ø20 - ø27	+ 0.3 / 0
		ø28 - ø54	+ 0.35 / 0

TUNGDRILL TWISTED

L/D	in / mm	Tool diameter	Hole diameter tolerance*
2	inch	ø0.500 - ø0.625	+ 0.010 / 0
		ø0.687 - ø2.125	+ 0.012 / 0
	mm	ø12.5 - ø17	+ 0.25 / 0
		ø17.5 - ø54	+ 0.3 / 0
3	inch	ø0.500 - ø0.625	+ 0.010 / 0
		ø0.687 - ø2.125	+ 0.012 / 0
	mm	ø12.5 - ø17	+ 0.25 / 0
		ø17.5 - ø54	+ 0.3 / 0
4	inch	ø0.500 - ø0.625	+ 0.016 / 0
		ø0.687 - ø2.125	+ 0.019 / 0
	mm	ø12.5 - ø17	+ 0.4 / 0
		ø17.5 - ø54	+ 0.45 / 0
5	inch	ø0.500 - ø0.625	+ 0.016 / 0
		ø0.687 - ø2.125	+ 0.018 / 0
	mm	ø12.5 - ø17	+ 0.4 / 0
		ø17.5 - ø54	+ 0.45 / 0

ADDMEISTER DRILL

L/D	in / mm	Tool diameter	Hole diameter tolerance*
3	mm	ø4 - ø5.9	+ 0.04 / 0
5	mm	ø4 - ø5.9	+ 0.05 / 0

DRILLMEISTER

L/D	in / mm	Tool diameter	Hole diameter tolerance*
1.5	inch	ø0.394 - ø0.705	+ 0.0012 / 0
		ø0.709 - ø1.020	+ 0.0014 / 0
	mm	ø6 - ø17.9	+ 0.03 / 0
		ø18 - ø25.9	+ 0.035 / 0
2	inch	ø0.236 - ø0.665	+0.0016 / 0
	mm	ø6 - ø16.9	+ 0.04 / 0
3	inch	ø0.394 - ø0.705	+ 0.0015 / 0
		ø0.709 - ø1.020	+ 0.0018 / 0
	mm	ø6 - ø17.9	+ 0.04 / 0
		ø18 - ø25.9	+ 0.045 / 0
3.5	inch	ø0.236 - ø0.783	+0.0016 / 0
	mm	ø6 - ø19.9	+ 0.04 / 0
5	inch	ø0.394 - ø1.020	+ 0.0020 / 0
	mm	ø6 - ø25.9	+ 0.05 / 0
6	inch	ø0.236 - ø0.705	+0.0019 / 0
		ø0.709 - ø0.783	+0.0021 / 0
	mm	ø6 - ø17.9	+ 0.05 / 0
		ø18 - ø19.9	+ 0.055 / 0
8	inch	ø0.394 - ø0.705	+ 0.0020 / 0
		ø0.709 - ø1.020	+ 0.0022 / 0
	mm	ø7 - ø17.9	+ 0.05 / 0
		ø18 - ø25.9	+ 0.055 / 0
12	inch	ø0.315 -ø0.705	+0.0019 / 0
		ø0.709 - ø1.020	+0.0021 / 0
	mm	ø8 - ø17.9	+ 0.05 / 0
		ø18 - ø25.9	+ 0.055 / 0

DRILLFORCE MEISTER

L/D	in / mm	Tool diameter	Hole diameter tolerance*
3	inch	ø1.024 - ø1.177	+ 0.0020 / 0
		ø1.181 - ø1.614	+ 0.0024 / 0
	mm	ø20 - ø29.9	+ 0.05 / 0
		ø30 - ø41	+ 0.06 / 0
5	inch	ø1.024 - ø1.177	+ 0.0030 / 0
		ø1.181 - ø1.614	+ 0.0035 / 0
	mm	ø20 - ø29.9	+ 0.08 / 0
		ø30 - ø41	+ 0.09 / 0
8	inch	ø0.787 - ø1.177	+0.0031 / 0
		ø1.181 - ø1.614	+0.0035 / 0
	mm	ø26 - ø29.9	+ 0.08 / 0
		ø30 - ø33.9	+ 0.09 / 0

DEEP TRI DRILL

L/D	in / mm	Tool diameter	Hole diameter tolerance*
8	inch	ø1.303 - ø1.539	+0.0019 / -0.0039
	mm	ø33.1 - ø39.1	+ 0.05 / - 0.1
10	inch	ø0.625 - ø1.062	+ 0.002 / - 0.004
		ø1.125 - ø1.500	+ 0.002 / - 0.004
	mm	ø16 - ø26	+ 0.05 / - 0.1
		ø28.58 - ø40	+ 0.05 / - 0.1
15	inch	ø0.472 - ø1.102	+ 0.002 / - 0.004
		ø1.125 - ø1.500	+ 0.002 / - 0.004
	mm	ø12 - ø13.99	+ 0.05 / - 0.11
		ø14 - ø28	+ 0.05 / - 0.1
		ø28.58 - ø40	+ 0.05 / - 0.1
20	inch	ø0.472 - ø0.5507	+0.0019 / -0.0043
		ø0.5512 - ø0.591	+0.0019 / -0.0039
	mm	ø12 - ø13.99	+ 0.05 / - 0.11
		ø14 - ø15	+ 0.05 / - 0.1
25	inch	ø0.437 - ø1.102	+ 0.002 / - 0.004
		ø0.578 - ø0.937	+ 0.002 / - 0.004
		ø1.125 - ø1.500	+ 0.002 / - 0.004
	mm	ø10 - ø13.99	+ 0.05 / - 0.11
		ø14 - ø28	+ 0.05 / - 0.1
		ø28.58 - ø38.1	+ 0.05 / - 0.1
35, 40, 45	inch	ø0.4374	+ 0.002 / - 0.004
	mm	ø12 - ø13.99	+ 0.05 / - 0.11
		ø14 - ø15	+ 0.05 / - 0.1

General drilling - Quick Guide

★ : First choice
☆ : Second choice

Tool series	Designation	Appearance	Tool diameter	Effective Cutting edge	L/D	Coolant supply	IT class	Workpiece material P	M	K	N	S	H	Remark	Page
ADDMEISTER DRILL	TID		ø0.157" - ø0.232" ø4 - ø5.9 mm	2	3 5	Int.	8 - 10	★	★	★	★	★	★	Exchange-able head drill	J010 -
DRILLMEISTER	TIDU TID TIDC TIDCF		ø0.394" - ø1.020" ø6 - ø25.9 mm	2	1.5 2 3 3.5 5 6 8 12	Int. / Ext.	8 - 10	★	★	★	★	★	★	Exchange-able head drill	J012 -
DRILLFMEISTER	TIS		ø1.024" - ø1.614" ø20 - ø41 mm	2	3 5 8	Int.	9 - 10	★	★	★	☆	★	★	Exchange-able head drill	J038 -
SOLIDDRILL	DSM DSM-CP		ø0.1 - ø3 mm	2	5 10 15	Ext.	9 -10	★	★	★	☆	☆	☆	Solid drill	J047 -
	CDS		ø1 - ø9 mm	2	3 - 8	Ext.	9 - 10			★	★			Solid drill	J049
	DSW		ø3 - ø12 mm	2	3 5 8	Int. / Ext.	9 - 10	★	★	★	☆	★	☆	Solid drill	J050 -
	DSXU DSX		13/64" - 21/32", ø3 - ø20 mm	2	3 5 8	Int.	9 - 10	★	★	★	☆	☆	☆	Solid drill	J055 -
	DSE		ø3 - ø15 mm	2	2 3	Ext.	9 - 10	★	☆	☆	☆	★	☆	Solid Drill	J058
	FDCU FDC		ø0.203" - ø0.344", ø5 - ø16 mm	2	5 8	Int.	9 - 10			★	★			Solid Drill	J060
	DMXU DMX		#34" - 25/32", ø3 - ø16.5 mm	2	2 3	Ext.	9 - 10	★	☆	☆	☆	★	☆	Solid Drill	J061
	DMX-F		ø3 - ø12.5 mm	2	3 5	Ext.	9 - 10			★	★			Solid Drill	J064 -
	FDS		ø11 mm	2	3	Ext.	8 - 10			★	★			Solid Drill	J065
SOLID 4 FLUTES DRILL	DSQ		ø0.236" - ø0.630", ø6 - ø16 mm	4	3 5	Ext.	9 - 10			★				Solid Drill	J066
TUNGSIX-DRILL	TDS		ø0.750" - ø1.062", ø20 - ø54 mm	1	2 3 4	Int.	11 - 13	★	★	★	☆	★	★	Indexable drill	J070 -
TUNGDRILLTWISTED	TDX		0.500" - 2.125", ø12.5 - ø54 mm	1	2 3 4 5	Int.	11 - 13	★	★	★	☆	★	★	Indexable drill	J080 -
TUNGDRILLBIG	TDS TDX		ø2.250" - ø3.157", ø55 - ø80 mm	1	2.5	Int.	11 - 13	★	★	★	☆	★	★	Indexable drill	J094 -

Deep drilling - Quick Guide

★ : First choice
☆ : Second choice

Tool series	Designation	Appearance	Tool diameter	Effective Cutting edge	L/D	Coolant supply	IT class	Workpiece material P	M	K	N	S	H	Remark	Page
DEEP TWIST DRILL	MCTR/ TRLG		0.394" - 1.575", ø10 - ø40 mm	1	8 10 15 20 25 35 40 45 (for machining centers) Length ≤ 1650 mm (for gundrill machines)	Int.	IT10-11	★	☆	★	☆	☆	☆	Indexable drill	J107 -
GUNDRILL	SLJ		ø3 - ø12.2 mm	1	Length ≤ 1650 mm (for gundrill machines)	Int.	IT7-8	☆	☆	★	★	☆	☆	Brazed tool	J131
TRI-FINE	FNTR		ø0.630" - ø1.102", ø16 - ø28 mm	1	-	Int.	IT10	★	★	★	☆	★	★	Indexable drill	J134 -
FINE-BEAM	FNBM		ø0.984" - ø3.504" ø25 - ø65 mm	1	-	Int.	IT10	★	★	★	☆	★	★	Indexable drill	J139 -
UNIDEX	MBU/ UTE/BTU		ø1.496" - ø11.574" ø38 - ø106.99 mm	1	-	Int.	IT10	★	★	★	☆	☆	☆	Indexable drill	J147 -
Brazed BTA drill	MBU/ UTE/BTU		ø0.315" - ø2.559", ø8 - ø65 mm	1	-	Int.	IT9	★	★	★	☆	☆	☆	Brazed tool	J168 -
HF drill	HF		ø30 - ø69 mm	1	6 - 14	Int.	IT10	★	☆	★	☆	★	☆	Indexable drill	J181

Reaming - Quick Guide

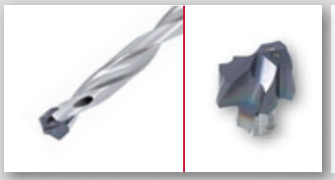
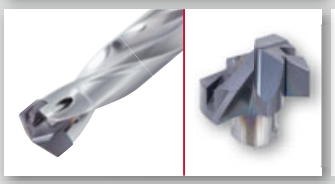
★ : First choice
☆ : Second choice

Tool series	Designation	Appearance	Tool diameter	Effective Cutting edge	L/D	Coolant supply	IT class	Workpiece material P	M	K	N	S	H	Remark	Page
REAMMEISTER	TRM		ø0.453" - ø1.260, ø11.5 - ø32 mm	6, 8	1.5 3 5 8	Int.	IT7	★	★	★	☆	★	★	Indexable drill	J182 -

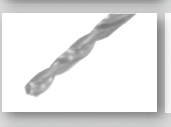
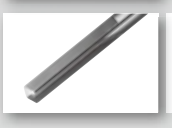


DrillMeister

Exchangeable head drill

		Inch	Metric
	**ADDMEISTER DRILL** Exchangeable head drill series ø0.157" - ø0.232" ø4 mm - ø5.9 mm L/D = 3, 5		✓
		J010 - J029 -	
	**DRILLMEISTER** Exchangeable head drill series ø0.236" - ø1.020", ø6 mm - ø25.9 mm L/D = 1.5, 2, 3, 3.5, 5, 6, 8, 12	✓	✓
		J010 J012 - J029 -	
	**DRILLFORCE MEISTER** Two cutting edges for productivity in large diameter drilling ø0.787" - ø1.614" , ø20 mm - ø41 mm L/D = 3, 5, 8	✓	✓
		J038 -	

Solid Drill

		Inch	Metric
	**SOLIDDRILL** High performance solid carbide drill	✓	✓
		J047 -	
	**DSM / DSM-CP** ø0.1 mm - ø3 mm / L/D = 5, 10, 15		✓
		J047 -	
	**CDS** ø0.4 mm - ø9 mm / L/D = 3 - 8		✓
		J049	
	**DSW** ø3 mm - ø12 mm / L/D = 3, 5, 8		✓
		J050 -	
	**DSXU / DSX** 13/64" - 21/32", ø3 mm - ø20 mm / L/D = 3, 5, 8	✓	✓
		J055 -	
	**DSE** ø3 mm - ø15 mm / L/D = 2, 3		✓
		J058 -	
	**FDCU / FDC** ø0.203" - ø0.345", ø5 mm - ø16 mm / L/D = 5, 8	✓	✓
		J060	
	**DMXU / DMX / DMX-F** #34" - 25/32", ø3 mm - ø16.5 mm / L/D = 2, 3, 5	✓	✓
		J061 -	
	**FDS** ø11 mm / L/D = 3		✓
		J065	

ADDMEISTER DRILL / DRILLMEISTER



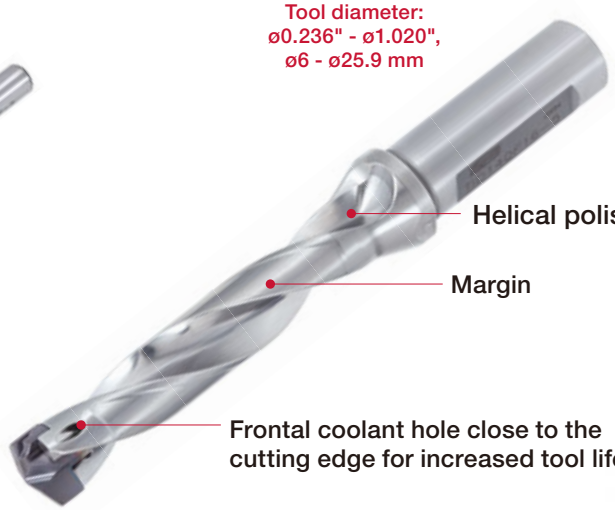
Exchangeable head drills for unparalleled tool life and machining performance

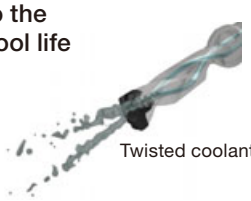
- Helical margin to prevent chip adhesion between the body and the hole during machining
- Tool body made from highest grade of steel with superior hardness for high wear resistance
- Wide variety of geometries for every drilling application
- Advanced grade options to ensure stable and long tool life.
- Supply efficient internal coolant channels and lubrication during the drilling process.

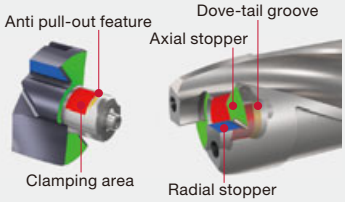
ADDMEISTER DRILL
Tool diameter:
ø0.157" - ø0.232",
ø4 - ø5.9 mm



DRILLMEISTER
Tool diameter:
ø0.236" - ø1.020",
ø6 - ø25.9 mm







Quick and precise head changing with advanced self-clamping system

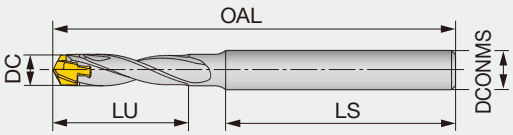
- Drilling head pocket designed to withstand high machining cutting conditions
- Allows easy and fast head indexing, minimizing machine downtime

Reference pages: J011 - J037,
Technical reference → L081 -

TID-R L/D=3

Exchangeable head drill, L/D = 3, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL DMP	OAL DMC	Pocket size	Head
TID040R06-3	4 - 4.4	6	13	35	57.7	58.1	4	DM*040 - DM*044
TID045R06-3	4.5 - 4.9	6	14	35	59.7	59.9	4.5	DM*045 - DM*049
TID050R06-3	5 - 5.4	6	16	35	61.4	61.8	5	DM*050 - DM*054
TID055R06-3	5.5 - 5.9	6	17	35	64	64.3	5.5	DM*055 - DM*059

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø4 - ø5.9	+0.04 / 0

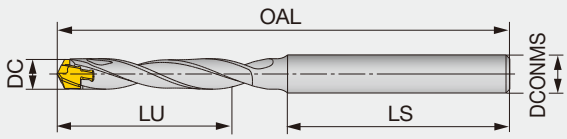
*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

TID-R L/D=5

Exchangeable head drill, L/D = 5, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL DMP	OAL DMC	Pocket size	Head
TID040R06-5	4 - 4.4	6	21	35	65.7	66.1	4	DM*040 - DM*044
TID045R06-5	4.5 - 4.9	6	23	35	68.7	68.9	4.5	DM*045 - DM*049
TID050R06-5	5 - 5.4	6	26	35	71.3	71.6	5	DM*050 - DM*054
TID055R06-5	5.5 - 5.9	6	28	35	74.2	74.5	5.5	DM*055 - DM*059

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø4 - ø5.9	+0.05 / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS

Designation	Clamping key
TID040..., TID045...	K-TID4-4.99
TID050..., TID055...	K-TID5-5.99

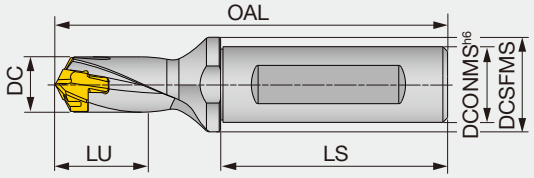
Reference pages: Head → J029 - J032
Standard cutting conditions → J037

DRILLMEISTER

TIDU-F L/D=1.5

Exchangeable head drill, L/D = 1.5, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-1.5	0.394 - 0.429	0.625	0.787	0.591	1.890	3.118	3.142	2.638	10	DM*100 - DM*109
TIDU0433F0625-1.5	0.433 - 0.468	0.625	0.787	0.669	1.890	3.193	3.217	2.678	11	DM*110 - DM*119
TIDU0472F0625-1.5	0.472 - 0.508	0.625	0.787	0.709	1.890	3.268	3.292	2.720	12	DM*120 - DM*129
TIDU0512F0625-1.5	0.512 - 0.547	0.625	0.787	0.787	1.890	3.350	3.381	2.749	13	DM*130 - DM*139
TIDU0551F0625-1.5	0.551 - 0.587	0.625	0.787	0.827	1.890	3.508	3.539	2.811	14	DM*140 - DM*149
TIDU0591F0750-1.5	0.591 - 0.625	0.750	0.984	0.906	1.969	3.787	3.822	2.878	15	DM*150 - DM*159
TIDU0630F0750-1.5	0.630 - 0.665	0.750	0.984	0.945	1.969	3.909	3.948	3.060	16	DM*160 - DM*169
TIDU0669F0750-1.5	0.669 - 0.705	0.750	0.984	1.024	1.969	4.031	4.07	3.126	17	DM*170 - DM*179
TIDU0709F1000-1.5	0.709 - 0.744	1.000	1.260	1.063	2.205	4.390	4.433	3.197	18	DM*180 - DM*189
TIDU0748F1000-1.5	0.748 - 0.783	1.000	1.260	1.142	2.205	4.508	4.551	3.269	19	DM*190 - DM*199
TIDU0787F1000-1.5	0.787- 0.823	1.000	1.260	1.181	2.205	4.630	4.677	3.424	20	DMP200 - DMP209
TIDU0827F1000-1.5	0.827- 0.862	1.000	1.260	1.240	2.205	4.752	4.800	3.698	21	DMP210 - DMP219
TIDU0866F1000-1.5	0.866 - 0.902	1.000	1.260	1.299	2.205	4.874	4.924	3.813	22	DMP220 - DMP229
TIDU0906F1250-1.5	0.906 - 0.941	1.250	1.654	1.358	2.362	5.150	5.204	3.923	23	DMP230 - DMP239
TIDU0945F1250-1.5	0.945 - 0.980	1.250	1.654	1.417	2.362	5.272	5.327	4.270	24	DMP240 - DMP249
TIDU0984F1250-1.5	0.984 - 1.020	1.250	1.654	1.476	2.362	5.394	5.453	4.381	25	DMP250 - DMP259

Tool diameter (in)	Hole diameter tolerance (in)*
ø0.394" - ø0.705"	+0.0012" / 0
ø0.709" - ø1.020"	+0.0014" / 0

*Just for reference

- An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)
- For drill diameters from ø0.315" - ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



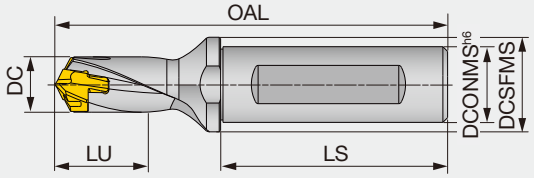
Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TID L/D=1.5

Exchangeable head drill, L/D = 1.5, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-1.5	6 - 6.4	12	16	10	45	67.9	68	67	6	DM*060 - DM*064
TID065F12-1.5	6.5 - 6.9	12	16	11	45	68.9	69.1	68	6.5	DM*065 - DM*069
TID070F12-1.5	7 - 7.4	12	16	12	45	70	70.4	69.1	7	DM*070 - DM*074
TID075F12-1.5	7.5 - 7.9	12	16	13	45	70.7	71.2	69.8	7	DM*075 - DM*079
TID080F12-1.5	8 - 8.9	12	16	14	45	72.3	72.4	71.4	8	DM*080 - DM*089
TID090F12-1.5	9 - 9.9	12	16	16	45	74.2	74.3	73.1	9	DM*090 - DM*099
TID100F16-1.5	10 - 10.9	16	20	17	48	79.1	79.7	77.7	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	81	81.6	79.4	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20	48	82.8	83.4	81.2	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22	48	84.9	85.7	83	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	24	48	89	89.8	87	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	26	50	96	96.9	93.9	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	27	50	99.1	100.1	96.8	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29	50	102.2	103.2	99.7	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30	56	111.3	112.4	108.5	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	33	56	114.3	115.4	111.3	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	34	56	117.4	118.6	115.1	20	DM*200 - DM*209
TID210F25-1.5	21 - 21.9	25	32	36	56	120.5	121.7	118	21	DM*210 - DM*219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.6	124.8	120.9	22	DM*220 - DM*229
TID230F32-1.5	23 - 23.9	32	42	39	60	130.6	132	127.8	23	DM*230 - DM*239
TID240F32-1.5	24 - 24.9	32	42	40	60	133.7	135.1	130.7	24	DM*240 - DM*249
TID250F32-1.5	25 - 25.9	32	42	43	60	136.8	138.3	133.7	25	DM*250 - DM*259

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø17.9	+0.03 / 0
ø18 - ø25.9	+0.035 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

Designation	Clamping key
TID060... - TID090...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

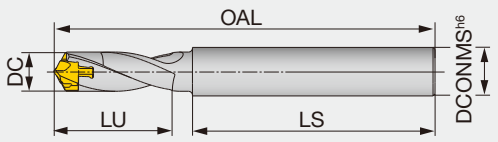
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID-R-2E L/D=2

Exchangeable head drill, L/D = 2, Cylindrical shank, for external coolant supply





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-2E	6 - 6.4	8	12	45	66.1	66.2	65.2	6	DM*060 - DM*064
TID065R8-2E	6.5 - 6.9	8	13	45	67.2	67.3	66.3	6.5	DM*065 - DM*069
TID070R8-2E	7 - 7.4	8	13	45	68	68.4	67.1	7	DM*070 - DM*074
TID075R8-2E	7.5 - 7.9	8	14	45	69	69.4	68.1	7	DM*075 - DM*079
TID080R10-2E	8 - 8.9	10	15	50	75.2	75.3	74.3	8	DM*080 - DM*089
TID090R10-2E	9 - 9.9	10	17	50	77.4	77.5	76.3	9	DM*090 - DM*099
TID100R12-2E	10 - 10.9	12	22	60	94.3	94.9	92.9	10	DM*100 - DM*109
TID110R12-2E	11 - 11.9	12	24	60	96.5	97.1	94.9	11	DM*110 - DM*119
TID120R14-2E	12 - 12.9	14	26	65	103.6	104.2	102	12	DM*120 - DM*129
TID130R14-2E	13 - 13.9	14	27	65	108.8	109.6	106.9	13	DM*130 - DM*139
TID140R16-2E	14 - 14.9	16	29	70	115	115.8	113	14	DM*140 - DM*149
TID150R16-2E	15 - 15.9	16	32	70	118	118.9	115.9	15	DM*150 - DM*159
TID160R18-2E	16 - 16.9	18	33	70	122.2	123.2	119.9	16	DM*160 - DM*169

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø16.9	+0.04 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



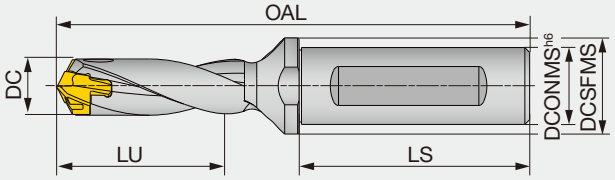
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDU-F L/D=3

Exchangeable head drill, L/D = 3, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-3	0.394 - 0.409	0.625	0.787	1.181	1.890	3.709	3.733	2.993	10	DM*100 - DM*104
TIDU0413F0625-3	0.413 - 0.429	0.625	0.787	1.260	1.890	3.768	3.792	3.062	10	DM*105 - DM*109
TIDU0433F0625-3	0.433 - 0.449	0.625	0.787	1.299	1.890	3.843	3.867	3.133	11	DM*110 - DM*114
TIDU0453F0625-3	0.453 - 0.469	0.625	0.787	1.378	1.890	3.902	3.926	3.192	11	DM*115 - DM*119
TIDU0472F0625-3	0.472 - 0.488	0.625	0.787	1.417	1.890	3.976	4.000	3.283	12	DM*120 - DM*124
TIDU0492F0625-3	0.492 - 0.508	0.625	0.787	1.457	1.890	4.035	4.059	3.342	12	DM*125 - DM*129
TIDU0512F0625-3	0.512 - 0.528	0.625	0.787	1.535	1.890	4.118	4.149	3.410	13	DM*130 - DM*134
TIDU0532F0625-3	0.532 - 0.547	0.625	0.787	1.614	1.890	4.177	4.208	3.469	13	DM*135 - DM*139
TIDU0551F0625-3	0.551 - 0.567	0.625	0.787	1.654	1.890	4.335	4.366	3.650	14	DM*140 - DM*144
TIDU0571F0625-3	0.571 - 0.587	0.625	0.787	1.732	1.890	4.394	4.425	3.709	14	DM*145 - DM*149
TIDU0591F0750-3	0.591 - 0.626	0.750	0.984	1.772	1.969	4.673	4.708	3.776	15	DM*150 - DM*159
TIDU0630F0750-3	0.630 - 0.665	0.750	0.984	1.890	1.969	4.854	4.893	3.835	16	DM*160 - DM*169
TIDU0669F0750-3	0.669 - 0.705	0.750	0.984	2.008	1.969	5.035	5.074	3.906	17	DM*170 - DM*179
TIDU0709F1000-3	0.709 - 0.744	1.000	1.260	2.126	2.205	5.453	5.496	3.965	18	DM*180 - DM*189
TIDU0748F1000-3	0.748 - 0.783	1.000	1.260	2.244	2.205	5.630	5.673	4.037	19	DM*190 - DM*199
TIDU0787F1000-3	0.787 - 0.823	1.000	1.260	2.362	2.205	5.811	5.838	4.096	20	DMP200 - DMP209
TIDU0827F1000-3	0.827 - 0.862	1.000	1.260	2.480	2.205	5.992	6.040	4.250	21	DMP210 - DMP219
TIDU0866F1000-3	0.866 - 0.902	1.000	1.260	2.598	2.205	6.173	6.223	4.309	22	DMP220 - DMP229
TIDU0906F1250-3	0.906 - 0.941	1.250	1.654	2.718	2.362	6.508	6.562	4.584	23	DMP230 - DMP239
TIDU0945F1250-3	0.945 - 0.980	1.250	1.654	2.835	2.362	6.689	6.744	4.757	24	DMP240 - DMP249
TIDU0984F1250-3	0.984 - 1.020	1.250	1.654	2.953	2.362	6.870	6.939	4.927	25	DMP250 - DMP259

Tool diameter (in)	Hole diameter tolerance (in)*
ø0.394" - ø0.705"	+0.0015" / 0
ø0.709" - ø1.020"	+0.0018" / 0

*Just for reference

- An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

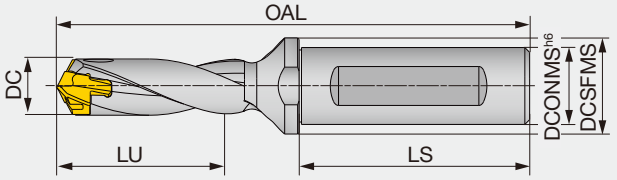
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID L/D=3

Exchangeable head drill, L/D = 3, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-3	6 - 6.4	12	16	19	45	76.9	77	76	6	DM*060 - DM*064
TID065F12-3	6.5 - 6.9	12	16	21	45	78.7	78.8	77.8	6.5	DM*065 - DM*069
TID070F12-3	7 - 7.4	12	16	22	45	80.5	80.9	79.6	7	DM*070 - DM*074
TID075F12-3	7.5 - 7.9	12	16	24	45	82	82.4	81.1	7	DM*075 - DM*079
TID080F12-3	8 - 8.4	12	16	26	45	84.3	84.4	83.4	8	DM*080 - DM*084
TID085F12-3	8.5 - 8.9	12	16	28	45	85.8	85.9	84.9	8	DM*085 - DM*089
TID090F12-3	9 - 9.4	12	16	29	45	87.7	87.8	86.6	9	DM*090 - DM*094
TID095F12-3	9.5 - 9.9	12	16	31	45	89.2	89.3	88.1	9	DM*095 - DM*099
TID100F16-3	10 - 10.4	16	20	32	48	94.1	94.7	92.7	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	34	48	95.6	96.2	94.2	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.5	98.1	95.9	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37	48	99	99.6	97.4	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38	48	100.8	101.4	99.2	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39	48	102.3	102.9	100.7	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41	48	104.4	105.2	102.5	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	44	48	105.9	106.7	104	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	45	48	110	110.8	108	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	47	48	111.5	112.3	109.5	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	48	50	118.5	119.4	116.4	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	51	50	123.1	124.1	120.8	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54	50	127.7	128.7	125.2	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57	56	138.3	139.4	135.5	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	61	56	142.8	143.9	139.8	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	64	56	147.4	148.6	145.1	20	DM*200 - DM*209
TID210F25-3	21 - 21.9	25	32	67	56	152	153.2	149.5	21	DM*210 - DM*219
TID220F25-3	22 - 22.9	25	32	70	56	156.6	157.8	153.9	22	DM*220 - DM*229
TID230F32-3	23 - 23.9	32	42	73	60	165.1	166.5	162.3	23	DM*230 - DM*239
TID240F32-3	24 - 24.9	32	42	76	60	169.7	171.1	166.7	24	DM*240 - DM*249
TID250F32-3	25 - 25.9	32	42	80	60	174.3	175.8	171.2	25	DM*250 - DM*259

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø17.9	+0.04 / 0
ø18 - ø25.9	+0.045 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



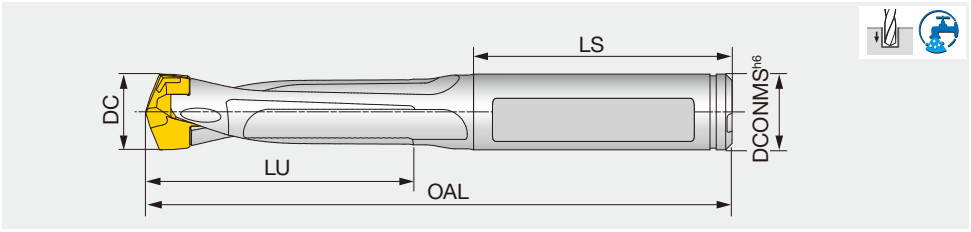
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDC L/D=3

Exchangeable head drill, L/D = 3, Cylindrical shank, for chamfering adapter





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TIDC075C8-3	7.5 - 7.9	8	23	36	70.1	70.6	69.2	7	DM*075 - DM*079
TIDC080C8-3	8 - 8.4	8	24	36	70.6	70.8	69.7	8	DM*080 - DM*084
TIDC085C9-3	8.5 - 8.9	9	26	36	72.8	73	71.9	8	DM*085 - DM*089
TIDC090C9-3	9 - 9.4	9	27	36	74.7	74.9	73.7	9	DM*090 - DM*094
TIDC095C10-3	9.5 - 9.9	10	29	36	76.2	76.4	75.2	9	DM*095 - DM*099
TIDC100C10-3	10 - 10.4	10	32	41	86.1	86.7	84.8	10	DM*100 - DM*104
TIDC105C11-3	10.5 - 10.9	11	33	41	87.6	88.2	86.3	10	DM*105 - DM*109
TIDC110C11-3	11 - 11.4	11	35	41	89.5	90.2	88	11	DM*110 - DM*114
TIDC115C12-3	11.5 - 11.9	12	37	41	91	91.7	89.5	11	DM*115 - DM*119
TIDC120C12-3	12 - 12.4	12	38	41	92.8	93.4	91.2	12	DM*120 - DM*124
TIDC125C13-3	12.5 - 12.9	13	40	46	98.3	98.9	96.7	12	DM*125 - DM*129
TIDC130C13-3	13 - 13.4	13	41	47	102.4	103.2	100.5	13	DM*130 - DM*134
TIDC135C14-3	13.5 - 13.9	14	43	43	99.9	100.7	98	13	DM*135 - DM*139
TIDC140C14-3	14 - 14.4	14	45	44	103	103.8	101	14	DM*140 - DM*144
TIDC145C15-3	14.5 - 14.9	15	46	45	105.5	106.3	103.5	14	DM*145 - DM*149
TIDC150C15-3	15 - 15.9	15	48	45	107.5	108.4	105.4	15	DM*150 - DM*159
TIDC160C16-3	16 - 16.9	16	51	48	117.5	118.5	115.2	16	DM*160 - DM*169
TIDC170C17-3	17 - 17.9	17	54	48	119.7	120.7	117.2	17	DM*170 - DM*179
TIDC180C18-3	18 - 18.9	18	57	48	123.3	124.4	120.5	18	DM*180 - DM*189
TIDC190C19-3	19 - 19.9	19	61	54	132.4	133.5	129.4	19	DM*190 - DM*199

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø7.5 - ø17.9	+0.04 / 0
ø18 - ø19.9	+0.045 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS



Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC190...	K-TID10-19.99

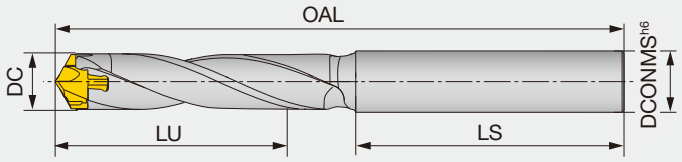
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID-R L/D=3.5

Exchangeable head drill, L/D = 3.5, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-3.5	6 - 6.4	8	21	45	75.6	75.8	74.8	6	DM*060 - DM*064
TID065R8-3.5	6.5 - 6.9	8	23	45	77.5	77.6	76.6	6.5	DM*065 - DM*069
TID070R8-3.5	7 - 7.4	8	25	45	79.1	79.5	78.2	7	DM*070 - DM*074
TID075R8-3.5	7.5 - 7.9	8	26	45	80.8	81.3	80	7	DM*075 - DM*079
TID080R10-3.5	8 - 8.4	10	28	50	87.8	87.9	86.9	8	DM*080 - DM*084
TID085R10-3.5	8.5 - 8.9	10	30	50	89.5	89.7	88.6	8	DM*085 - DM*089
TID090R10-3.5	9 - 9.4	10	32	50	91.4	91.6	90.4	9	DM*090 - DM*094
TID095R10-3.5	9.5 - 9.9	10	33	50	93.2	93.3	92.1	9	DM*095 - DM*099
TID100R12-3.5	10 - 10.4	12	42	60	114	114.7	112.7	10	DM*100 - DM*104
TID105R12-3.5	10.5 - 10.9	12	44	60	115.7	116.3	114.4	10	DM*105 - DM*109
TID110R12-3.5	11 - 11.4	12	46	65	123.1	123.8	121.6	11	DM*110 - DM*114
TID115R12-3.5	11.5 - 11.9	12	48	65	124.8	125.4	123.2	11	DM*115 - DM*119
TID120R14-3.5	12 - 12.4	14	50	65	127.2	127.8	125.6	12	DM*120 - DM*124
TID125R14-3.5	12.5 - 12.9	14	52	65	128.8	129.5	127.3	12	DM*125 - DM*129
TID130R14-3.5	13 - 13.4	14	54	65	132.7	133.5	130.9	13	DM*130 - DM*134
TID135R14-3.5	13.5 - 13.9	14	56	65	134.4	135.2	132.5	13	DM*135 - DM*139
TID140R16-3.5	14 - 14.4	16	58	70	142.2	143	140.2	14	DM*140 - DM*144
TID145R16-3.5	14.5 - 14.9	16	60	70	143.8	144.7	141.9	14	DM*145 - DM*149
TID150R16-3.5	15 - 15.9	16	64	70	148.4	149.4	146.3	15	DM*150 - DM*159
TID160R18-3.5	16 - 16.9	18	68	70	153.9	154.9	151.7	16	DM*160 - DM*169
TID170R18-3.5	17 - 17.9	18	72	70	158.5	159.4	155.9	17	DM*170 - DM*179
TID180R20-3.5	18 - 18.9	20	76	70	164	165.1	161.2	18	DM*180 - DM*189
TID190R20-3.5	19 - 19.9	20	80	70	168.4	169.5	165.4	19	DM*190 - DM*199

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø19.9	+0.04 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



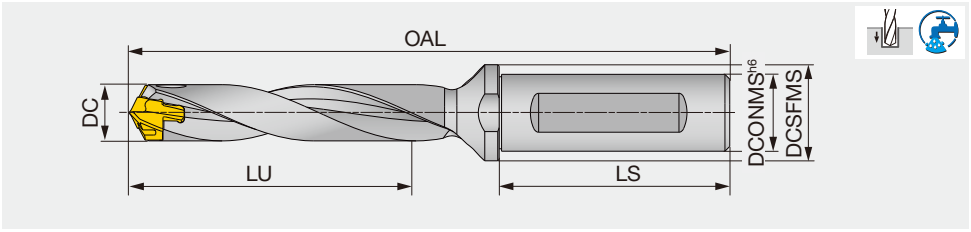
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDU-F L/D=5

Exchangeable head drill, L/D = 5, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-5	0.394 - 0.409	0.625	0.787	1.969	1.890	4.496	4.514	3.465	10	DM*100 - DM*104
TIDU0413F0625-5	0.413 - 0.429	0.625	0.787	2.087	1.890	4.594	4.618	3.574	10	DM*105 - DM*109
TIDU0433F0625-5	0.433 - 0.449	0.625	0.787	2.165	1.890	4.709	4.733	3.684	11	DM*110 - DM*114
TIDU0453F0625-5	0.453 - 0.469	0.625	0.787	2.283	1.890	4.807	4.831	3.783	11	DM*115 - DM*119
TIDU0472F0625-5	0.472 - 0.488	0.625	0.787	2.362	1.890	4.921	4.945	3.913	12	DM*120 - DM*124
TIDU0492F0625-5	0.492 - 0.508	0.625	0.787	2.441	1.890	5.020	5.044	4.011	12	DM*125 - DM*129
TIDU0512F0625-5	0.512 - 0.528	0.625	0.787	2.559	1.890	5.142	5.173	4.119	13	DM*130 - DM*134
TIDU0532F0625-5	0.532 - 0.547	0.625	0.787	2.677	1.890	5.240	5.271	4.217	13	DM*135 - DM*139
TIDU0551F0625-5	0.551 - 0.567	0.625	0.787	2.756	1.890	5.440	5.471	4.438	14	DM*140 - DM*144
TIDU0571F0625-5	0.571 - 0.587	0.625	0.787	2.874	1.890	5.539	5.570	4.536	14	DM*145 - DM*149
TIDU0591F0750-5	0.591 - 0.626	0.750	0.984	2.953	1.969	5.854	5.889	4.642	15	DM*150 - DM*159
TIDU0630F0750-5	0.630 - 0.665	0.750	0.984	3.150	1.969	6.114	6.153	4.740	16	DM*160 - DM*169
TIDU0669F0750-5	0.669 - 0.705	0.750	0.984	3.346	1.969	6.374	6.413	4.851	17	DM*170 - DM*179
TIDU0709F1000-5	0.709 - 0.744	1.000	1.260	3.543	2.205	6.870	6.913	4.949	18	DM*180 - DM*189
TIDU0748F1000-5	0.748 - 0.783	1.000	1.260	3.740	2.205	7.126	7.169	5.060	19	DM*190 - DM*199
TIDU0787F1000-5	0.787 - 0.823	1.000	1.260	3.937	2.205	7.386	7.432	5.159	20	DMP200 - DMP209
TIDU0827F1000-5	0.827 - 0.862	1.000	1.260	4.134	2.205	7.646	7.694	5.353	21	DMP210 - DMP219
TIDU0866F1000-5	0.866 - 0.902	1.000	1.260	4.331	2.205	7.906	7.956	5.451	22	DMP220 - DMP229
TIDU0906F1250-5	0.906 - 0.941	1.250	1.654	4.528	2.362	8.319	8.373	5.765	23	DMP230 - DMP239
TIDU0945F1250-5	0.945 - 0.980	1.250	1.654	4.724	2.362	8.579	8.634	6.017	24	DMP240 - DMP249
TIDU0984F1250-5	0.984 - 1.020	1.250	1.654	4.921	2.362	8.839	8.898	6.266	25	DMP250 - DMP259

Tool diameter (in)	Hole diameter tolerance (in)*
ø0.394" - ø1.020"	+0.0020" / 0

*Just for reference

- An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

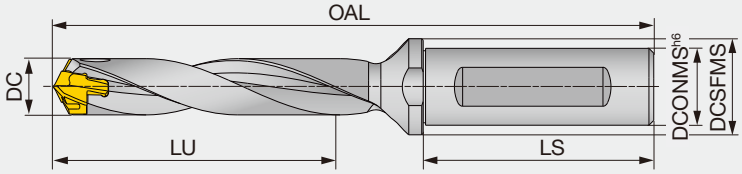
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID L/D=5

Exchangeable head drill, L/D = 5, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-5	6 - 6.4	12	16	31	45	88.9	89	88	6	DM*060 - DM*064
TID065F12-5	6.5 - 6.9	12	16	34	45	91.7	91.8	90.8	6.5	DM*065 - DM*069
TID070F12-5	7 - 7.4	12	16	36	45	94.5	94.9	93.6	7	DM*070 - DM*074
TID075F12-5	7.5 - 7.9	12	16	39	45	97	97.4	96.1	7	DM*075 - DM*079
TID080F12-5	8 - 8.4	12	16	42	45	100.3	100.4	99.4	8	DM*080 - DM*084
TID085F12-5	8.5 - 8.9	12	16	45	45	102.8	102.9	101.9	8	DM*085 - DM*089
TID090F12-5	9 - 9.4	12	16	47	45	105.7	105.8	104.6	9	DM*090 - DM*094
TID095F12-5	9.5 - 9.9	12	16	50	45	108.2	108.3	107.1	9	DM*095 - DM*099
TID100F16-5	10 - 10.4	16	20	52	48	114.1	114.7	112.7	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	55	48	116.6	117.2	115.2	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.5	120.1	117.9	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60	48	122	122.6	120.4	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62	48	124.8	125.4	123.2	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64	48	127.3	127.9	125.7	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67	48	130.4	131.2	128.5	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	71	48	132.9	133.7	131	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	73	48	138	138.8	136	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	76	48	140.5	141.3	138.5	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	78	50	148.5	149.4	146.4	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	83	50	155.1	156.1	152.8	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88	50	161.7	162.7	159.2	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93	56	174.3	175.4	171.5	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	99	56	180.8	181.9	177.8	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	104	56	187.6	188.8	185.3	20	DM*200 - DM*209
TID210F25-5	21 - 21.9	25	32	109	56	194.2	195.4	191.8	21	DM*210 - DM*219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	202.1	198.1	22	DM*220 - DM*229
TID230F32-5	23 - 23.9	32	42	119	60	211.3	212.7	208.5	23	DM*230 - DM*239
TID240F32-5	24 - 24.9	32	42	124	60	217.9	219.3	214.9	24	DM*240 - DM*249
TID250F32-5	25 - 25.9	32	42	130	60	224.5	226	221.4	25	DM*250 - DM*259

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø25.9	+0.05 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



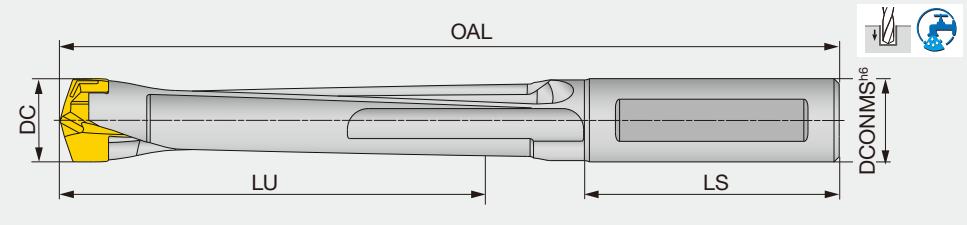
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDC L/D=5

Exchangeable head drill, L/D = 5, Cylindrical shank, for chamfering adapter





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TIDC075C8-5	7.5 - 7.9	8	38	36	85.1	85.6	84.2	7	DM*075 - DM*079
TIDC080C8-5	8 - 8.4	8	40	36	92.3	92.5	91.4	8	DM*080 - DM*084
TIDC085C9-5	8.5 - 8.9	9	43	36	89.8	90	88.9	8	DM*085 - DM*089
TIDC090C9-5	9 - 9.4	9	45	36	92.7	92.9	91.7	9	DM*090 - DM*094
TIDC095C10-5	9.5 - 9.9	10	48	36	95.2	95.4	94.2	9	DM*095 - DM*099
TIDC100C10-5	10 - 10.4	10	52	41	106.1	106.7	104.8	10	DM*100 - DM*104
TIDC105C11-5	10.5 - 10.9	11	54	41	108.6	109.2	107.3	10	DM*105 - DM*109
TIDC110C11-5	11 - 11.4	11	57	41	111.5	112.2	110	11	DM*110 - DM*114
TIDC115C12-5	11.5 - 11.9	12	60	41	114	114.7	112.5	11	DM*115 - DM*119
TIDC120C12-5	12 - 12.4	12	62	41	116.8	117.4	115.2	12	DM*120 - DM*124
TIDC125C13-5	12.5 - 12.9	13	65	46	124.3	124.9	122.7	12	DM*125 - DM*129
TIDC130C13-5	13 - 13.4	13	67	47	128.4	129.2	126.5	13	DM*130 - DM*134
TIDC135C14-5	13.5 - 13.9	14	70	43	126.9	127.7	125	13	DM*135 - DM*139
TIDC140C14-5	14 - 14.4	14	73	44	131	131.8	129	14	DM*140 - DM*144
TIDC145C15-5	14.5 - 14.9	15	75	45	134.5	135.3	132.5	14	DM*145 - DM*149
TIDC150C15-5	15 - 15.9	15	78	45	137.5	138.4	135.4	15	DM*150 - DM*159
TIDC160C16-5	16 - 16.9	16	83	48	149.5	150.5	147.2	16	DM*160 - DM*169
TIDC170C17-5	17 - 17.9	17	88	48	153.7	154.7	151.2	17	DM*170 - DM*179
TIDC180C18-5	18 - 18.9	18	93	48	159.3	160.4	156.5	18	DM*180 - DM*189
TIDC190C19-5	19 - 19.9	19	99	54	170.4	171.5	167.4	19	DM*190 - DM*199

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø7.5 - ø19.9	+0.05 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

SPARE PARTS



Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC190...	K-TID10-19.99

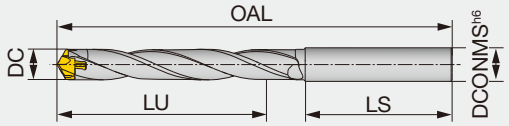
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID-R L/D=6

Exchangeable head drill, L/D = 6, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-6	6 - 6.4	8	36	45	91.6	91.8	90.8	6	DM*060 - DM*064
TID065R8-6	6.5 - 6.9	8	39	45	94.7	94.9	93.9	6.5	DM*065 - DM*069
TID070R8-6	7 - 7.4	8	42	45	97.6	98	96.7	7	DM*070 - DM*074
TID075R8-6	7.5 - 7.9	8	45	45	100.6	101	99.7	7	DM*075 - DM*079
TID080R10-6	8 - 8.4	10	48	50	108.8	108.9	107.9	8	DM*080 - DM*084
TID085R10-6	8.5 - 8.9	10	51	50	111.8	111.9	110.9	8	DM*085 - DM*089
TID090R10-6	9 - 9.4	10	54	50	114.9	115.1	113.9	9	DM*090 - DM*094
TID095R10-6	9.5 - 9.9	10	57	50	117.9	118.1	116.9	9	DM*095 - DM*099
TID100R12-6	10 - 10.4	12	68	60	140	140.7	138.7	10	DM*100 - DM*104
TID105R12-6	10.5 - 10.9	12	71	60	142.9	143.6	141.6	10	DM*105 - DM*109
TID110R12-6	11 - 11.4	12	75	65	151.6	152.3	150.1	11	DM*110 - DM*114
TID115R12-6	11.5 - 11.9	12	78	65	154.5	155.2	153	11	DM*115 - DM*119
TID120R14-6	12 - 12.4	14	81	65	158.2	158.8	156.6	12	DM*120 - DM*124
TID125R14-6	12.5 - 12.9	14	84	65	161.1	161.7	159.5	12	DM*125 - DM*129
TID130R14-6	13 - 13.4	14	88	65	166.2	167	164.4	13	DM*130 - DM*134
TID135R14-6	13.5 - 13.9	14	91	65	169.2	169.9	167.3	13	DM*135 - DM*139
TID140R16-6	14 - 14.4	16	94	70	178.2	179	176.2	14	DM*140 - DM*144
TID145R16-6	14.5 - 14.9	16	97	70	181.1	181.9	179.1	14	DM*145 - DM*149
TID150R16-6	15 - 15.9	16	104	70	188.2	189.1	186.1	15	DM*150 - DM*159
TID160R18-6	16 - 16.9	18	110	70	196.2	197.2	193.9	16	DM*160 - DM*169
TID170R18-6	17 - 17.9	18	117	70	203.2	204.2	200.7	17	DM*170 - DM*179
TID180R20-6	18 - 18.9	20	124	70	211.3	212.3	208.4	18	DM*180 - DM*189
TID190R20-6	19 - 19.9	20	130	70	218.1	219.2	215.1	19	DM*190 - DM*199

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø17.9	+0.05 / 0
ø18 - ø19.9	+0.055 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



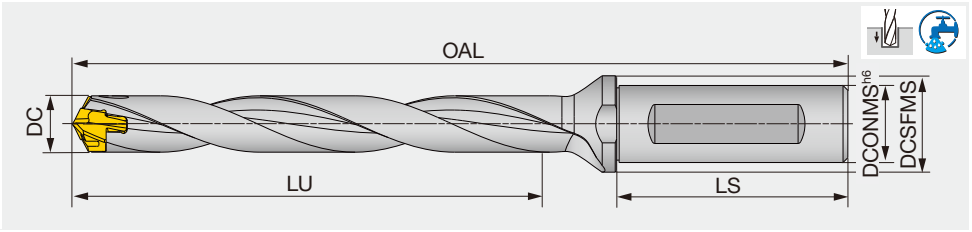
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDU-F L/D=8

Exchangeable head drill, L/D = 8, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-8	0.394 - 0.409	0.625	0.787	3.150	1.890	5.677	5.701	4.511	10	DM*100 - DM*104
TIDU0413F0625-8	0.413 - 0.429	0.625	0.787	3.307	1.890	5.835	5.859	4.669	10	DM*105 - DM*109
TIDU0433F0625-8	0.433 - 0.449	0.625	0.787	3.465	1.890	6.008	6.032	4.858	11	DM*110 - DM*114
TIDU0453F0625-8	0.453 - 0.469	0.625	0.787	3.622	1.890	6.165	6.189	5.015	11	DM*115 - DM*119
TIDU0472F0625-8	0.472 - 0.488	0.625	0.787	3.780	1.890	6.339	6.363	5.181	12	DM*120 - DM*124
TIDU0492F0625-8	0.492 - 0.508	0.625	0.787	3.937	1.890	6.496	6.52	5.339	12	DM*125 - DM*129
TIDU0512F0625-8	0.512 - 0.528	0.625	0.787	4.094	1.890	6.677	6.708	5.619	13	DM*130 - DM*134
TIDU0532F0625-8	0.532 - 0.547	0.625	0.787	4.252	1.890	6.835	6.866	5.776	13	DM*135 - DM*139
TIDU0551F0625-8	0.551 - 0.567	0.625	0.787	4.409	1.890	7.091	7.122	5.941	14	DM*140 - DM*144
TIDU0571F0625-8	0.571 - 0.587	0.625	0.787	4.567	1.890	7.252	7.283	6.098	14	DM*145 - DM*149
TIDU0591F0750-8	0.591 - 0.626	0.750	0.984	4.724	1.969	7.626	7.661	6.268	15	DM*150 - DM*159
TIDU0630F0750-8	0.630 - 0.665	0.750	0.984	5.039	1.969	8.004	8.043	6.426	16	DM*160 - DM*169
TIDU0669F0750-8	0.669 - 0.705	0.750	0.984	5.354	1.969	8.382	8.421	6.596	17	DM*170 - DM*179
TIDU0709F1000-8	0.709 - 0.744	1.000	1.260	5.669	2.205	8.996	9.039	6.753	18	DM*180 - DM*189
TIDU0748F1000-8	0.748 - 0.783	1.000	1.260	5.984	2.205	9.370	9.413	7.006	19	DM*190 - DM*199
TIDU0787F1000-8	0.787 - 0.823	1.000	1.260	6.299	2.205	9.748	9.795	7.164	20	DMP200 - DMP209
TIDU0827F1000-8	0.827 - 0.862	1.000	1.260	6.614	2.205	10.126	10.174	7.537	21	DMP210 - DMP219
TIDU0866F1000-8	0.866 - 0.902	1.000	1.260	6.929	2.205	10.504	10.554	7.907	22	DMP220 - DMP229
TIDU0906F1250-8	0.906 - 0.941	1.250	1.654	7.244	2.362	11.035	11.089	8.274	23	DMP230 - DMP239
TIDU0945F1250-8	0.945 - 0.980	1.250	1.654	7.559	2.362	11.413	11.468	8.876	24	DMP240 - DMP249
TIDU0984F1250-8	0.984 - 1.020	1.250	1.654	7.874	2.362	11.791	11.850	9.244	25	DMP250 - DMP259

Tool diameter (in)	Hole diameter tolerance (in)*
ø0.394" - ø0.705"	+0.0020" / 0
ø0.709" - ø1.020"	+0.0022" / 0

*Just for reference

- An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

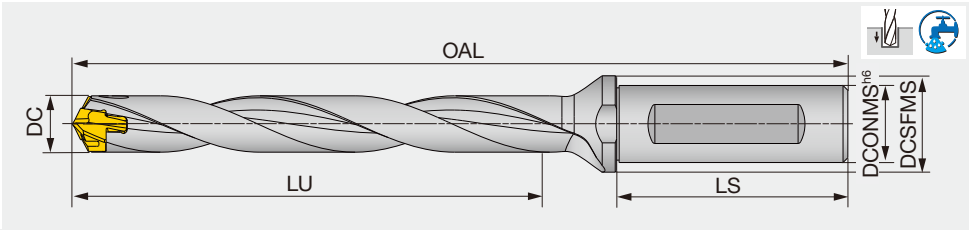
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID L/D=8

Exchangeable head drill, L/D = 8, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID070F12-8	7 - 7.4	12	16	57	45	115.5	115.9	114.6	7	DM*070 - DM*074
TID075F12-8	7.5 - 7.9	12	16	61	45	119.5	119.9	118.6	7	DM*075 - DM*079
TID080F12-8	8 - 8.4	12	16	66	45	124.3	124.4	123.4	8	DM*080 - DM*084
TID085F12-8	8.5 - 8.9	12	16	70	45	128.3	128.4	127.4	8	DM*085 - DM*089
TID090F12-8	9 - 9.4	12	16	74	45	132.7	132.8	131.6	9	DM*090 - DM*094
TID095F12-8	9.5 - 9.9	12	16	78	45	136.7	136.8	135.6	9	DM*095 - DM*099
TID100F16-8	10 - 10.4	16	20	82	48	144.1	144.7	142.7	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	86	48	148.1	148.7	146.7	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.5	153.1	150.9	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94	48	156.5	157.1	154.9	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98	48	160.8	161.4	159.2	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102	48	164.8	165.4	163.2	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106	48	169.4	170.2	167.5	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	111	48	173.4	174.2	171.5	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	115	48	180	180.8	178	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	119	48	184	184.8	182	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	123	50	193.5	194.4	191.4	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	131	50	203.1	204.1	200.8	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139	50	212.7	213.7	210.2	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147	56	228.3	229.4	225.5	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	156	56	237.8	238.9	234.8	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	164	56	247.4	248.6	245.1	20	DM*200 - DM*209
TID210F25-8	21 - 21.9	25	32	172	56	257	258.2	254.5	21	DM*210 - DM*219
TID220F25-8	22 - 22.9	25	32	180	56	266.6	267.8	263.9	22	DM*220 - DM*229
TID230F32-8	23 - 23.9	32	42	188	60	280.1	281.5	277.3	23	DM*230 - DM*239
TID240F32-8	24 - 24.9	32	42	196	60	289.7	291.1	286.7	24	DM*240 - DM*249
TID250F32-8	25 - 25.9	32	42	205	60	299.3	300.8	296.2	25	DM*250 - DM*259

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø7 - ø17.9	+0.05 / 0
ø18 - ø25.9	+0.055 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS

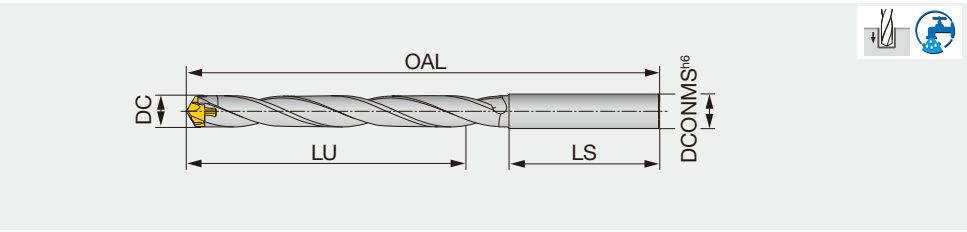
Designation	Clamping key
TID070... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TID-R L/D=8

Exchangeable head drill, L/D = 8, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-8	6 - 6.4	8	48	45	104.4	104.6	103.6	6	DM*060 - DM*064
TID065R8-8	6.5 - 6.9	8	52	45	108.5	108.7	107.7	6.5	DM*065 - DM*069
TID070R8-8	7 - 7.4	8	56	45	112.4	112.8	111.5	7	DM*070 - DM*074
TID075R8-8	7.5 - 7.9	8	60	45	116.4	116.8	115.5	7	DM*075 - DM*079
TID080R10-8	8 - 8.4	10	64	50	125.6	125.7	124.7	8	DM*080 - DM*084
TID085R10-8	8.5 - 8.9	10	68	50	129.6	129.7	128.7	8	DM*085 - DM*089
TID090R10-8	9 - 9.4	10	72	50	133.7	133.9	132.7	9	DM*090 - DM*094
TID095R10-8	9.5 - 9.9	10	76	50	137.7	137.9	136.7	9	DM*095 - DM*099
TID100R12-8	10 - 10.4	12	89	60	160.8	161.5	159.5	10	DM*100 - DM*104
TID105R12-8	10.5 - 10.9	12	93	60	164.7	165.4	163.4	10	DM*105 - DM*109
TID110R12-8	11 - 11.4	12	98	65	174.4	175.1	172.9	11	DM*110 - DM*114
TID115R12-8	11.5 - 11.9	12	102	65	178.3	179	176.8	11	DM*115 - DM*119
TID120R14-8	12 - 12.4	14	106	65	183	183.6	181.4	12	DM*120 - DM*124
TID125R14-8	12.5 - 12.9	14	110	65	186.9	187.5	185.3	12	DM*125 - DM*129
TID130R14-8	13 - 13.4	14	115	65	193	193.8	191.2	13	DM*130 - DM*134
TID135R14-8	13.5 - 13.9	14	119	65	196.9	197.7	195	13	DM*135 - DM*139
TID140R16-8	14 - 14.4	16	123	70	207	207.8	205	14	DM*140 - DM*144
TID145R16-8	14.5 - 14.9	16	127	70	210.9	211.7	208.9	14	DM*145 - DM*149
TID150R16-8	15 - 15.9	16	136	70	220	220.9	217.9	15	DM*150 - DM*159
TID160R18-8	16 - 16.9	18	144	70	230	231	227.7	16	DM*160 - DM*169
TID170R18-8	17 - 17.9	18	153	70	239	240	236.5	17	DM*170 - DM*179
TID180R20-8	18 - 18.9	20	162	70	249.1	250.1	246.2	18	DM*180 - DM*189
TID190R20-8	19 - 19.9	20	170	70	257.9	259	254.9	19	DM*190 - DM*199

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø6 - ø17.9	+0.05 / 0
ø18 - ø19.9	+0.055 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99

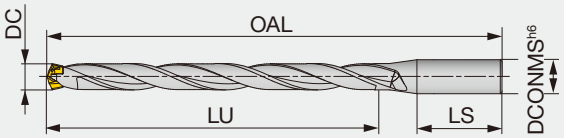
Reference pages: Head → J029 - J036
Standard cutting conditions → J037

DRILLMEISTER

TID L/D=12

Exchangeable head drill, L/D = 12, Cylindrical shank





Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID080R12-12	8 - 8.4	12	98	45	156.3	156.4	155.4	8	DM*080 - DM*084
TID085R12-12	8.5 - 8.9	12	104	45	162.3	162.4	161.4	8	DM*085 - DM*089
TID090R12-12	9 - 9.4	12	110	45	168.7	168.8	167.6	9	DM*090 - DM*094
TID095R12-12	9.5 - 9.9	12	116	45	174.7	174.8	173.6	9	DM*095 - DM*099
TID100R16-12	10 - 10.4	16	122	48	184.1	184.7	182.7	10	DM*100 - DM*104
TID105R16-12	10.5 - 10.9	16	128	48	190.1	190.7	188.7	10	DM*105 - DM*109
TID110R16-12	11 - 11.4	16	134	48	196.5	197.1	194.9	11	DM*110 - DM*114
TID115R16-12	11.5 - 11.9	16	140	48	202.5	203.1	200.9	11	DM*115 - DM*119
TID120R16-12	12 - 12.4	16	146	48	208.8	209.4	207.2	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152	48	214.8	215.4	213.2	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158	48	221.4	222.2	219.5	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	165	48	227.4	228.2	225.5	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	171	48	236	236.8	234	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	177	48	242	242.8	240	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	183	50	253.5	254.4	251.4	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	195	50	267.1	268.1	264.8	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207	50	280.7	281.7	278.2	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219	56	300.3	301.4	297.5	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	232	56	313.8	314.9	310.8	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	244	56	327.4	328.6	325.1	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	256	56	341	342.2	338.5	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	267	56	354.6	355.8	351.9	22	DM*220 - DM*229
TID230R32-12	23 - 23.9	32	276	60	372.1	373.5	369.3	23	DM*230 - DM*239
TID240R32-12	24 - 24.9	32	288	60	385.7	387.1	382.7	24	DM*240 - DM*249
TID250R32-12	25 - 25.9	32	300	60	399.3	400.8	396.2	25	DM*250 - DM*259

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø8 - ø17.9	+0.05 / 0
ø18 - ø25.9	+0.055 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

SPARE PARTS



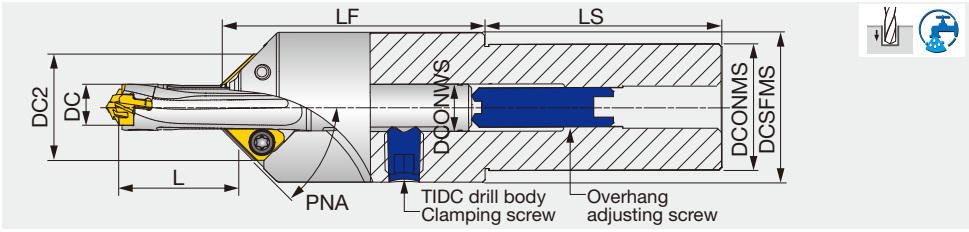
Designation	Clamping key
TID080... - TID095...	K-TID6-9.99
TID100... - TID190...	K-TID10-19.99
TID200... - TID250...	K-TID20-26.99

Reference pages: Head → J029 - J036
Standard cutting conditions → J037

TIDCF

Chamfering adapter





Inch	DC	DCONMS	DCSFMS	DC2	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-WU1.00-.394-.409	0.374 - 0.409	1.000	1.496	0.981	2.650	2.205	0.571 - 1.252	1.248 - 2.039	TIDC100C10-...	0.394
TIDCF110-WU1.00-.413-.449	0.413 - 0.449	1.000	1.496	1.019	2.654	2.205	0.618 -1.311	1.228 - 2.134	TIDC105C11-..., TIDC110C11-...	0.433
TIDCF120-WU1.00-.453-.488	0.453 - 0.488	1.000	0.984	1.060	2.646	2.205	0.638 - 1.390	1.343 - 2.256	TIDC115C12-..., TIDC120C12-...	0.472
TIDCF130-WU1.00-.492-.528	0.492 - 0.528	1.000	0.984	1.098	2.646	2.205	0.594 - 1.447	1.331 - 2.339	TIDC125C13-..., TIDC130C13-...	0.512
TIDCF140-WU1.25-.531-.567	0.531 - 0.567	1.250	1.496	1.119	2.646	2.362	0.650 - 1.484	1.441 - 2.425	TIDC135C14-..., TIDC140C14-...	0.551
TIDCF150-WU1.25-.571-.626	0.571 - 0.626	1.250	1.496	1.159	2.646	2.362	0.634 - 1.559	1.563 - 2.551	TIDC145C15-..., TIDC150C15-...	0.591
TIDCF160-WU1.25-.630-.665	0.630 - 0.665	1.250	1.496	1.197	2.646	2.362	0.689 - 1.634	1.681 - 2.677	TIDC160C16-...	0.630
TIDCF170-WU1.25-.669-.705	0.669 - 0.705	1.250	1.496	1.240	2.654	2.362	0.697 - 1.689	1.630 - 2.768	TIDC170C17-...	0.669
TIDCF180-WU1.25-.709-.744	0.709 - 0.744	1.250	1.496	1.274	2.654	2.362	0.713 - 1.772	1.764 - 2.878	TIDC180C18-...	0.709
TIDCF190-WU1.25-.748-.783	0.748 - 0.783	1.250	1.496	1.313	2.653	2.362	0.756 - 1.756	1.732 - 2.909	TIDC190C19-...	0.748

L* is the dimension when using 45° chamfering insert.
Shank: flat cotter

Metric	DC	DCONMS	DCSFMS	DC2	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS	Insert
TIDCF080-W20	7.5 - 7.9	20	25	18.8	47.4	50	12.6 - 24	17.3 - 38	TIDC075C8-...	8	XCGT06...
TIDCF080-W20	8.0 - 8.4	20	25	18.8	47.4	50	13.5 - 24.6	24.7 - 45	TIDC080C8-...	8	XCGT06...
TIDCF090-W20	8.5 - 8.9	20	25	19.8	47.4	50	12.6 - 26.2	18.5 - 43	TIDC085C9-...	9	XCGT06...
TIDCF090-W20	9.0 - 9.4	20	25	19.8	47.4	50	13 - 29.2	22.9 - 46.8	TIDC090C9-...	9	XCGT06...
TIDCF100-W32	9.5 - 9.9	32	38	24.9	67.3	60	12.9 - 27.8	26 - 47	TIDC095C10-...	10	XHG*09...
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10	XHG*09...
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11	XHG*09...
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11	XHG*09...
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12	XHG*09...
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12	XHG*09...
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13	XHG*09...
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13	XHG*09...
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14	XHG*09...
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14	XHG*09...
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15	XHG*09...
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15	XHG*09...
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16	XHG*09...
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17	XHG*09...
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18	XHG*09...
TIDCF190-W32	19 - 19.9	32	38	33.4	75	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19	XHG*09...

L* is the dimension when using 45° chamfering insert.
Shank: whistle notch

SPARE PARTS

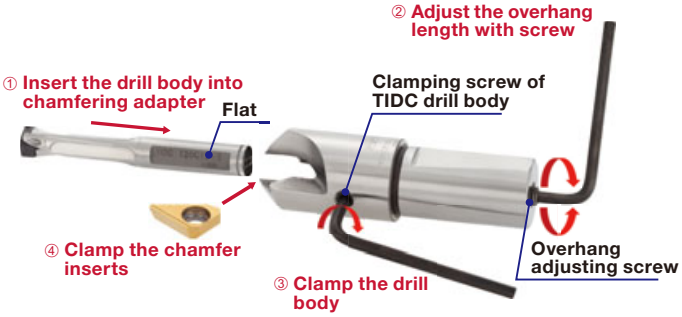


Designation	Insert screw	Grip	Clamping screw of TIDC drill body	Overhang adjusting screw	Torx bit	Wrench	Wrench
TIDCF080... - TIDCF090...	SR14-560	-	SRM6X6DIN916	SRM6X1S	-	HW3.0	T-8D
TIDCF100... - TIDCF190...	SR14-544/S	SW6-SD	SRM10X10DIN916	SRM10X1.5S	BT15S	HW5.0	-

Recommended clamping torque : SR14-544/S = 3.54 lbf·ft, 4.8 N·m

● How to mount the chamfering adapter on the TIDC drill body

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adapter. The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



Procedures

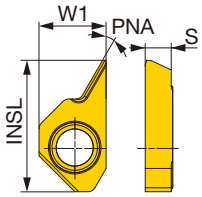
① Place the TIDC drill body into the chamfering adapter without chamfer inserts.
② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adapter.
③ Adjust the position of the drill body so that the drill body is fixed at the flat and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

Notice: Before removing the drill body from the adapter, chamfer inserts must be unclamped. The overhang adjusting screw can be handled from the top of the adapter with a flat-blade screwdriver. The overhang length of the drill body can be adjusted after the adapter is positioned on the drill shank.

CHAMFERING INSERT

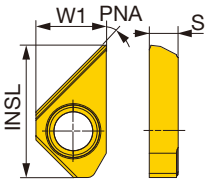
XCGT-30DT/XHGT-30A





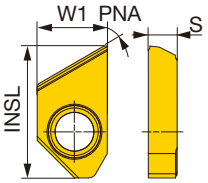
XCGT-45DT/XHGR-45A





XCGT-60DT/XHGR-60A





		GH730
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Chamfering angle PNA	Maximum width of chamfer*	Coated GH730	W1 (mm)	INSL (mm)	S (mm)
XCGT060300-30DT	30°	2	●	6.18	12.3	2.8
XCGT060300-45DT	45°	4	●	6.18	12.3	2.8
XCGT060300-60DT	60°	4	●	6.18	12.3	2.8
XHGT090300-30A	30°	3	●	8.5	16	3.3
XHGR090300-45A	45°	6	●	8.5	16	3.3
XHGR090300-60A	60°	6	●	8.5	16	3.3

*Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer.

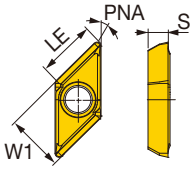
● : Line up
2 pieces per package

INSERT FOR SPECIAL CHAMFERING ADAPTERS

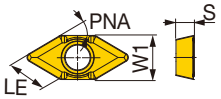
AOMT...



AOMT06-C45



AOMT03-N-**DT



		GH730
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

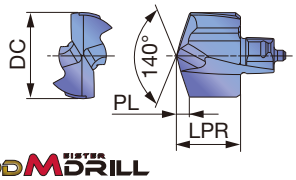
Designation	LE (in)	Chamfering angle PNA	Coated GH730	W1 (in)	S (in)
AOMT060204-C45	0.177	45°	●	0.223	0.077
AOMT030204-N-30DT	0.157	30°	●	0.157	0.063
AOMT030204-N-45DT	0.157	45°	●	0.110	0.063

● : Line up

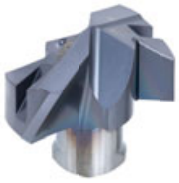
DRILL HEAD

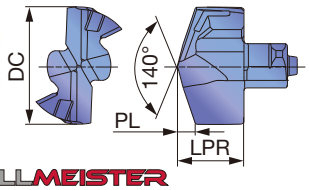
DMP (General purpose)





ADDMEISTER DRILL
DMP040 - DMP059





DRILLMEISTER
DMP060 - DMP259

Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

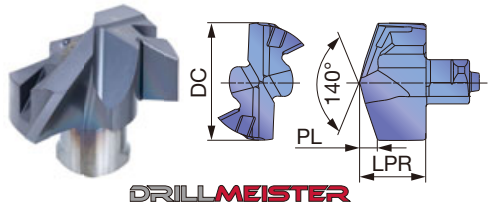
Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	Body
DMP040	0.157	4	3.1	●		0.62	TID*040...
DMP041	0.161	4.1	3.1	●		0.64	TID*040...
DMP042	0.165	4.2	3.1	●		0.66	TID*040...
DMP043	0.169	4.3	3.1	●		0.67	TID*040...
DMP044	0.173	4.4	3.1	●		0.69	TID*040...
DMP045	0.177	4.5	3.55	●		0.66	TID*045...
DMP046	0.181	4.6	3.55	●		0.68	TID*045...
DMP047	0.185	4.7	3.55	●		0.70	TID*045...
DMP048	0.189	4.8	3.55	●		0.71	TID*045...
DMP049	0.193	4.9	3.55	●		0.73	TID*045...
DMP050	0.197	5	3.7	●		0.73	TID*050...
DMP051	0.201	5.1	3.7	●		0.75	TID*050...
DMP052	0.205	5.2	3.7	●		0.77	TID*050...
DMP053	0.209	5.3	3.7	●		0.78	TID*050...
DMP054	0.213	5.4	3.7	●		0.8	TID*050...
DMP055	0.217	5.5	3.85	●		0.81	TID*055...
DMP056	0.220	5.6	3.85	●		0.83	TID*055...
DMP057	0.224	5.7	3.85	●		0.85	TID*055...
DMP058	0.228	5.8	3.85	●		0.86	TID*055...
DMP059	0.232	5.9	3.85	●		0.88	TID*055...
DMP060	0.236	6	3.85	●	●	1.09	TID*060...
DMP061	0.240	6.1	3.85	●	●	1.11	TID*060...
DMP062	0.244	6.2	3.85	●	●	1.13	TID*060...
DMP063	0.248	6.3	3.85	●	●	1.14	TID*060...
DMP064	0.252	6.4	3.85	●	●	1.16	TID*060...
DMP065	0.256	6.5	4.15	●	●	1.27	TID*065...
DMP066	0.260	6.6	4.15	●	●	1.29	TID*065...
DMP067	0.264	6.7	4.15	●	●	1.31	TID*065...
DMP068	0.268	6.8	4.15	●	●	1.33	TID*065...
DMP069	0.272	6.9	4.15	●	●	1.34	TID*065...
DMP070	0.276	7	4.45	●	●	1.03	TID*070...
DMP071	0.280	7.1	4.45	●	●	1.05	TID*070...
DMP072	0.283	7.2	4.45	●	●	1.07	TID*070...
DMP073	0.287	7.3	4.45	●	●	1.08	TID*070...
DMP074	0.291	7.4	4.45	●	●	1.1	TID*070...
DMP075	0.295	7.5	4.45	●	●	1.12	TID*075...
DMP076	0.299	7.6	4.45	●	●	1.14	TID*075...
DMP077	0.303	7.7	4.45	●	●	1.16	TID*075...
DMP078	0.307	7.8	4.45	●	●	1.18	TID*075...
DMP079	0.311	7.9	4.45	●	●	1.19	TID*075...
DMP080	0.315	8	5.25	●	●	1.2	TID*080...
DMP081	0.319	8.1	5.25	●	●	1.22	TID*080...
DMP082	0.323	8.2	5.25	●	●	1.24	TID*080...

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	Body
DMP083	0.327	8.3	5.25	●	●	1.25	TID*080...
DMP084	0.331	8.4	5.25	●	●	1.27	TID*080...
DMP085	0.335	8.5	5.25	●	●	1.29	TID*085...
DMP086	0.339	8.6	5.25	●	●	1.31	TID*085...
DMP087	0.343	8.7	5.25	●	●	1.33	TID*085...
DMP088	0.346	8.8	5.25	●	●	1.35	TID*085...
DMP089	0.350	8.9	5.25	●	●	1.36	TID*085...
DMP090	0.354	9	5.65	●	●	1.37	TID*090...
DMP091	0.358	9.1	5.65	●	●	1.39	TID*090...
DMP092	0.362	9.2	5.65	●	●	1.41	TID*090...
DMP093	0.366	9.3	5.65	●	●	1.42	TID*090...
DMP094	0.370	9.4	5.65	●	●	1.44	TID*090...
DMP095	0.374	9.5	5.65	●	●	1.46	TID*095...
DMP096	0.378	9.6	5.65	●	●	1.48	TID*095...
DMP097	0.382	9.7	5.65	●	●	1.5	TID*095...
DMP098	0.386	9.8	5.65	●	●	1.52	TID*095...
DMP099	0.390	9.9	5.65	●	●	1.53	TID*095...
DMP100	0.394	10	6.05	●	●	1.47	TID*100...
DMP101	0.398	10.1	6.05	●	●	1.49	TID*100...
DMP102	0.402	10.2	6.05	●	●	1.51	TID*100...
DMP103	0.406	10.3	6.05	●	●	1.52	TID*100...
DMP104	0.409	10.4	6.05	●	●	1.54	TID*100...
DMP105	0.413	10.5	6.05	●	●	1.56	TID*105...
DMP106	0.417	10.6	6.05	●	●	1.58	TID*105...
DMP107	0.421	10.7	6.05	●	●	1.6	TID*105...
DMP108	0.425	10.8	6.05	●	●	1.62	TID*105...
DMP109	0.429	10.9	6.05	●	●	1.63	TID*105...
DMP110	0.433	11	6.45	●	●	1.67	TID*110...
DMP111	0.437	11.1	6.45	●	●	1.69	TID*110...
DMP112	0.441	11.2	6.45	●	●	1.71	TID*110...
DMP113	0.445	11.3	6.45	●	●	1.72	TID*110...
DMP114	0.449	11.4	6.45	●	●	1.74	TID*110...
DMP115	0.453	11.5	6.45	●	●	1.76	TID*115...
DMP116	0.457	11.6	6.45	●	●	1.78	TID*115...
DMP117	0.461	11.7	6.45	●	●	1.8	TID*115...
DMP118	0.465	11.8	6.45	●	●	1.82	TID*115...
DMP119	0.469	11.9	6.45	●	●	1.83	TID*115...
DMP120	0.472	12	6.8	●	●	1.82	TID*120...
DMP121	0.476	12.1	6.8	●	●	1.84	TID*120...
DMP122	0.480	12.2	6.8	●	●	1.86	TID*120...
DMP123	0.484	12.3	6.8	●	●	1.87	TID*120...
DMP124	0.488	12.4	6.8	●	●	1.89	TID*120...
DMP125	0.492	12.5	6.8	●	●	1.91	TID*125...

Package Quantity: 0.157" - 0.783" = 2 pcs.
0.787" - 1.020" = 1 pc.

● : Line up

DMP (General purpose)



DRILLMEISTER

DMP060 - DMP259

Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

		AH725	AH9130
P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	Body
DMP126	0.496	12.6	6.8	●	●	1.93	TID*125...
DMP127	0.500	12.7	6.8	●	●	1.95	TID*125...
DMP128	0.504	12.8	6.8	●	●	1.97	TID*125...
DMP129	0.508	12.9	6.8	●	●	1.98	TID*125...
DMP130	0.512	13	7.4	●	●	1.96	TID*130...
DMP131	0.516	13.1	7.4	●	●	1.98	TID*130...
DMP132	0.520	13.2	7.4	●	●	2	TID*130...
DMP133	0.524	13.3	7.4	●	●	2.01	TID*130...
DMP134	0.528	13.4	7.4	●	●	2.03	TID*130...
DMP135	0.531	13.5	7.4	●	●	2.05	TID*135...
DMP136	0.535	13.6	7.4	●	●	2.07	TID*135...
DMP137	0.539	13.7	7.4	●	●	2.09	TID*135...
DMP138	0.543	13.8	7.4	●	●	2.11	TID*135...
DMP139	0.547	13.9	7.4	●	●	2.12	TID*135...
DMP140	0.551	14	7.95	●	●	2.12	TID*140...
DMP141	0.555	14.1	7.95	●	●	2.14	TID*140...
DMP142	0.559	14.2	7.95	●	●	2.16	TID*140...
DMP143	0.563	14.3	7.95	●	●	2.17	TID*140...
DMP144	0.567	14.4	7.95	●	●	2.19	TID*140...
DMP145	0.571	14.5	7.95	●	●	2.21	TID*145...
DMP146	0.575	14.6	7.95	●	●	2.23	TID*145...
DMP147	0.579	14.7	7.95	●	●	2.25	TID*145...
DMP148	0.583	14.8	7.95	●	●	2.27	TID*145...
DMP149	0.587	14.9	7.95	●	●	2.28	TID*145...
DMP150	0.591	15	8.53	●	●	2.27	TID*150...
DMP151	0.594	15.1	8.53	●	●	2.29	TID*150...
DMP152	0.598	15.2	8.53	●	●	2.31	TID*150...
DMP153	0.602	15.3	8.53	●	●	2.32	TID*150...
DMP154	0.606	15.4	8.53	●	●	2.34	TID*150...
DMP155	0.610	15.5	8.53	●	●	2.36	TID*150...
DMP156	0.614	15.6	8.53	●	●	2.38	TID*150...
DMP157	0.618	15.7	8.53	●	●	2.4	TID*150...
DMP158	0.622	15.8	8.53	●	●	2.42	TID*150...
DMP159	0.626	15.9	8.53	●	●	2.43	TID*150...
DMP160	0.630	16	9.1	●	●	2.42	TID*160...
DMP161	0.634	16.1	9.1	●	●	2.44	TID*160...
DMP162	0.638	16.2	9.1	●	●	2.46	TID*160...
DMP163	0.642	16.3	9.1	●	●	2.47	TID*160...
DMP164	0.646	16.4	9.1	●	●	2.49	TID*160...
DMP165	0.650	16.5	9.1	●	●	2.51	TID*160...
DMP166	0.654	16.6	9.1	●	●	2.53	TID*160...
DMP167	0.657	16.7	9.1	●	●	2.55	TID*160...
DMP168	0.661	16.8	9.1	●	●	2.57	TID*160...

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	Body
DMP169	0.665	16.9	9.1	●	●	2.58	TID*160...
DMP170	0.669	17	9.7	●	●	2.59	TID*170...
DMP171	0.673	17.1	9.7	●	●	2.61	TID*170...
DMP172	0.677	17.2	9.7	●	●	2.63	TID*170...
DMP173	0.681	17.3	9.7	●	●	2.64	TID*170...
DMP174	0.685	17.4	9.7	●	●	2.66	TID*170...
DMP175	0.689	17.5	9.7	●	●	2.68	TID*170...
DMP176	0.693	17.6	9.7	●	●	2.7	TID*170...
DMP177	0.697	17.7	9.7	●	●	2.72	TID*170...
DMP178	0.701	17.8	9.7	●	●	2.74	TID*170...
DMP179	0.705	17.9	9.7	●	●	2.75	TID*170...
DMP180	0.709	18	10.3	●	●	2.73	TID*180...
DMP181	0.713	18.1	10.3	●	●	2.75	TID*180...
DMP182	0.717	18.2	10.3	●	●	2.77	TID*180...
DMP183	0.720	18.3	10.3	●	●	2.78	TID*180...
DMP184	0.724	18.4	10.3	●	●	2.8	TID*180...
DMP185	0.728	18.5	10.3	●	●	2.82	TID*180...
DMP186	0.732	18.6	10.3	●	●	2.84	TID*180...
DMP187	0.736	18.7	10.3	●	●	2.86	TID*180...
DMP188	0.740	18.8	10.3	●	●	2.88	TID*180...
DMP189	0.744	18.9	10.3	●	●	2.89	TID*180...
DMP190	0.748	19	10.8	●	●	2.88	TID*190...
DMP1905	0.750	19.05	10.8	●	●	2.89	TID*190...
DMP191	0.752	19.1	10.8	●	●	2.9	TID*190...
DMP192	0.756	19.2	10.8	●	●	2.92	TID*190...
DMP1927	0.759	19.27	10.8	●		2.93	TID*190...
DMP193	0.760	19.3	10.8	●	●	2.93	TID*190...
DMP194	0.764	19.4	10.8	●	●	2.95	TID*190...
DMP195	0.768	19.5	10.8	●	●	2.97	TID*190...
DMP196	0.772	19.6	10.8	●	●	2.99	TID*190...
DMP197	0.776	19.7	10.8	●	●	3.01	TID*190...
DMP198	0.780	19.8	10.8	●	●	3.03	TID*190...
DMP199	0.783	19.9	10.8	●	●	3.04	TID*190...
DMP200	0.787	20	11.4	●	●	3.02	TID*200...
DMP201	0.791	20.1	11.4	●	●	3.04	TID*200...
DMP202	0.795	20.2	11.4	●	●	3.06	TID*200...
DMP203	0.799	20.3	11.4	●	●	3.07	TID*200...
DMP204	0.803	20.4	11.4	●	●	3.09	TID*200...
DMP205	0.807	20.5	11.4	●	●	3.11	TID*200...
DMP206	0.811	20.6	11.4	●	●	3.13	TID*200...
DMP207	0.815	20.7	11.4	●	●	3.15	TID*200...
DMP208	0.819	20.8	11.4	●	●	3.17	TID*200...
DMP209	0.823	20.9	11.4	●	●	3.18	TID*200...

Package Quantity: 0.157" - 0.783" = 2 pcs.
0.787" - 1.020" = 1 pc.

● : Line up

P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated			PL (mm)	Body
				AH725	AH9130			
DMP210	0.827	21	11.98	●	●		3.18	TID*210...
DMP211	0.831	21.1	11.98	●	●		3.2	TID*210...
DMP212	0.835	21.2	11.98	●	●		3.22	TID*210...
DMP213	0.839	21.3	11.98	●	●		3.23	TID*210...
DMP214	0.843	21.4	11.98	●	●		3.25	TID*210...
DMP215	0.846	21.5	11.98	●	●		3.27	TID*210...
DMP216	0.850	21.6	11.98	●	●		3.29	TID*210...
DMP217	0.854	21.7	11.98	●	●		3.31	TID*210...
DMP218	0.858	21.8	11.98	●	●		3.33	TID*210...
DMP219	0.862	21.9	11.98	●	●		3.34	TID*210...
DMP220	0.866	22	12.56	●	●		3.32	TID*220...
DMP221	0.870	22.1	12.56	●	●		3.34	TID*220...
DMP222	0.874	22.2	12.56	●	●		3.36	TID*220...
DMP223	0.878	22.3	12.56	●	●		3.37	TID*220...
DMP224	0.882	22.4	12.56	●	●		3.39	TID*220...
DMP225	0.886	22.5	12.56	●	●		3.41	TID*220...
DMP226	0.890	22.6	12.56	●	●		3.43	TID*220...
DMP227	0.894	22.7	12.56	●	●		3.45	TID*220...
DMP228	0.898	22.8	12.56	●	●		3.47	TID*220...
DMP229	0.902	22.9	12.56	●	●		3.48	TID*220...
DMP230	0.906	23	13.13	●	●		3.46	TID*230...
DMP231	0.909	23.1	13.13	●	●		3.48	TID*230...
DMP232	0.913	23.2	13.13	●	●		3.5	TID*230...
DMP233	0.917	23.3	13.13	●	●		3.51	TID*230...
DMP234	0.921	23.4	13.13	●	●		3.53	TID*230...
DMP235	0.925	23.5	13.13	●	●		3.55	TID*230...
DMP236	0.929	23.6	13.13	●	●		3.57	TID*230...
DMP237	0.933	23.7	13.13	●	●		3.59	TID*230...
DMP238	0.937	23.8	13.13	●	●		3.61	TID*230...
DMP239	0.941	23.9	13.13	●	●		3.62	TID*230...
DMP240	0.945	24	13.7	●	●		3.62	TID*240...
DMP241	0.949	24.1	13.7	●	●		3.64	TID*240...
DMP242	0.953	24.2	13.7	●	●		3.66	TID*240...
DMP243	0.957	24.3	13.7	●	●		3.67	TID*240...
DMP244	0.961	24.4	13.7	●	●		3.69	TID*240...
DMP245	0.965	24.5	13.7	●	●		3.71	TID*240...
DMP246	0.969	24.6	13.7	●	●		3.73	TID*240...
DMP247	0.972	24.7	13.7	●	●		3.75	TID*240...
DMP248	0.976	24.8	13.7	●	●		3.77	TID*240...
DMP249	0.980	24.9	13.7	●	●		3.78	TID*240...
DMP250	0.984	25	14.3	●	●		3.8	TID*250...
DMP251	0.988	25.1	14.3	●	●		3.82	TID*250...
DMP252	0.992	25.2	14.3	●	●		3.84	TID*250...
DMP253	0.996	25.3	14.3	●	●		3.85	TID*250...
DMP254	1.000	25.4	14.3	●	●		3.87	TID*250...
DMP255	1.004	25.5	14.3	●	●		3.89	TID*250...
DMP256	1.008	25.6	14.3	●	●		3.91	TID*250...
DMP2567	1.011	25.67	14.3	●	●		3.92	TID*250...
DMP257	1.012	25.7	14.3	●	●		3.93	TID*250...
DMP258	1.016	25.8	14.3	●	●		3.95	TID*250...
DMP259	1.020	25.9	14.3	●	●		3.96	TID*250...

Package Quantity: 0.157" - 0.783" = 2 pcs.
0.787" - 1.020" = 1 pc.

● : Line up

DMC (High precision hole making)



ADDMEISTER DRILL
DMC040 - DMC059



DRILLMEISTER
DMC060 - DMC259

Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm	LPR (mm)	Coated AH9130	PL (mm)	Body
DMC040	0.157	4	3.51	●	0.86	TID*040...
DMC041	0.161	4.1	3.51	●	0.88	TID*040...
DMC042	0.165	4.2	3.51	●	0.9	TID*040...
DMC043	0.169	4.3	3.51	●	0.92	TID*040...
DMC044	0.173	4.4	3.51	●	0.94	TID*040...
DMC045	0.177	4.5	3.81	●	0.97	TID*045...
DMC046	0.181	4.6	3.81	●	0.99	TID*045...
DMC047	0.185	4.7	3.81	●	1.01	TID*045...
DMC048	0.189	4.8	3.81	●	1.03	TID*045...
DMC049	0.193	4.9	3.81	●	1.05	TID*045...
DMC050	0.197	5	4.14	●	1.09	TID*050...
DMC051	0.201	5.1	4.14	●	1.11	TID*050...
DMC052	0.205	5.2	4.14	●	1.13	TID*050...
DMC053	0.209	5.3	4.14	●	1.15	TID*050...
DMC054	0.213	5.4	4.14	●	1.17	TID*050...
DMC055	0.217	5.5	4.17	●	1.22	TID*055...
DMC056	0.220	5.6	4.17	●	1.24	TID*055...
DMC057	0.224	5.7	4.17	●	1.26	TID*055...
DMC058	0.228	5.8	4.17	●	1.28	TID*055...
DMC059	0.232	5.9	4.17	●	1.3	TID*055...
DMC060	0.236	6	4	●	1.24	TID*060...
DMC061	0.240	6.1	4	●	1.26	TID*060...
DMC062	0.244	6.2	4	●	1.28	TID*060...
DMC063	0.248	6.3	4	●	1.3	TID*060...
DMC064	0.252	6.4	4	●	1.32	TID*060...
DMC065	0.256	6.5	4.3	●	1.33	TID*065...
DMC066	0.260	6.6	4.3	●	1.35	TID*065...
DMC067	0.264	6.7	4.3	●	1.37	TID*065...
DMC068	0.268	6.8	4.3	●	1.39	TID*065...
DMC069	0.272	6.9	4.3	●	1.41	TID*065...
DMC070	0.276	7	4.9	●	1.48	TID*070...
DMC071	0.280	7.1	4.9	●	1.5	TID*070...
DMC072	0.283	7.2	4.9	●	1.52	TID*070...
DMC073	0.287	7.3	4.9	●	1.54	TID*070...
DMC074	0.291	7.4	4.9	●	1.56	TID*070...
DMC075	0.295	7.5	4.9	●	1.58	TID*075...
DMC076	0.299	7.6	4.9	●	1.6	TID*075...
DMC077	0.303	7.7	4.9	●	1.62	TID*075...
DMC078	0.307	7.8	4.9	●	1.64	TID*075...
DMC079	0.311	7.9	4.9	●	1.66	TID*075...
DMC080	0.315	8	5.4	●	1.62	TID*080...
DMC081	0.319	8.1	5.4	●	1.64	TID*080...
DMC082	0.323	8.2	5.4	●	1.66	TID*080...
DMC083	0.327	8.3	5.4	●	1.68	TID*080...
DMC084	0.331	8.4	5.4	●	1.7	TID*080...
DMC085	0.335	8.5	5.4	●	1.72	TID*085...
DMC086	0.339	8.6	5.4	●	1.74	TID*085...
DMC087	0.343	8.7	5.4	●	1.76	TID*085...
DMC088	0.346	8.8	5.4	●	1.78	TID*085...
DMC089	0.350	8.9	5.4	●	1.8	TID*085...

Designation	DC (in)	DC (mm	LPR (mm)	Coated AH9130	PL (mm)	Body
DMC090	0.354	9	5.8	●	1.91	TID*090...
DMC091	0.358	9.1	5.8	●	1.93	TID*090...
DMC092	0.362	9.2	5.8	●	1.95	TID*090...
DMC093	0.366	9.3	5.8	●	1.97	TID*090...
DMC094	0.370	9.4	5.8	●	1.99	TID*090...
DMC095	0.374	9.5	5.8	●	2.01	TID*095...
DMC096	0.378	9.6	5.8	●	2.03	TID*095...
DMC097	0.382	9.7	5.8	●	2.05	TID*095...
DMC098	0.386	9.8	5.8	●	2.07	TID*095...
DMC099	0.390	9.9	5.8	●	2.09	TID*095...
DMC100	0.394	10	6.67	●	2.09	TID*100...
DMC101	0.398	10.1	6.67	●	2.11	TID*100...
DMC102	0.402	10.2	6.67	●	2.13	TID*100...
DMC103	0.406	10.3	6.67	●	2.15	TID*100...
DMC104	0.409	10.4	6.67	●	2.17	TID*100...
DMC105	0.413	10.5	6.67	●	2.19	TID*105...
DMC106	0.417	10.6	6.67	●	2.21	TID*105...
DMC107	0.421	10.7	6.67	●	2.23	TID*105...
DMC108	0.425	10.8	6.67	●	2.25	TID*105...
DMC109	0.429	10.9	6.67	●	2.27	TID*105...
DMC110	0.433	11	7.1	●	2.32	TID*110...
DMC111	0.437	11.1	7.1	●	2.34	TID*110...
DMC112	0.441	11.2	7.1	●	2.36	TID*110...
DMC113	0.445	11.3	7.1	●	2.38	TID*110...
DMC114	0.449	11.4	7.1	●	2.4	TID*110...
DMC115	0.453	11.5	7.1	●	2.42	TID*115...
DMC116	0.457	11.6	7.1	●	2.44	TID*115...
DMC117	0.461	11.7	7.1	●	2.46	TID*115...
DMC118	0.465	11.8	7.1	●	2.48	TID*115...
DMC119	0.469	11.9	7.1	●	2.5	TID*115...
DMC120	0.472	12	7.43	●	2.45	TID*120...
DMC121	0.476	12.1	7.43	●	2.47	TID*120...
DMC122	0.480	12.2	7.43	●	2.49	TID*120...
DMC123	0.484	12.3	7.43	●	2.51	TID*120...
DMC124	0.488	12.4	7.43	●	2.53	TID*120...
DMC125	0.492	12.5	7.43	●	2.55	TID*125...
DMC126	0.496	12.6	7.43	●	2.57	TID*125...
DMC127	0.500	12.7	7.43	●	2.59	TID*125...
DMC128	0.504	12.8	7.43	●	2.61	TID*125...
DMC129	0.508	12.9	7.43	●	2.63	TID*125...
DMC130	0.512	13	8.15	●	2.71	TID*130...
DMC131	0.516	13.1	8.15	●	2.73	TID*130...
DMC132	0.520	13.2	8.15	●	2.75	TID*130...
DMC133	0.524	13.3	8.15	●	2.77	TID*130...
DMC134	0.528	13.4	8.15	●	2.79	TID*130...
DMC135	0.531	13.5	8.15	●	2.81	TID*135...
DMC136	0.535	13.6	8.15	●	2.83	TID*135...
DMC137	0.539	13.7	8.15	●	2.85	TID*135...

ø0.157" - ø0.783" = 2 pieces per package
ø0.787" - ø1.020" = 1 piece per package

● : Line up

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	★		

Designation	DC (in)	DC (mm	LPR (mm)	Coated AH9130			PL (mm)	Body
DMC138	0.543	13.8	8.15	●			2.87	TID*135...
DMC139	0.547	13.9	8.15	●			2.89	TID*135...
DMC140	0.551	14	8.76	●			2.93	TID*140...
DMC141	0.555	14.1	8.76	●			2.95	TID*140...
DMC142	0.559	14.2	8.76	●			2.97	TID*140...
DMC143	0.563	14.3	8.76	●			2.99	TID*140...
DMC144	0.567	14.4	8.76	●			3.01	TID*140...
DMC145	0.571	14.5	8.76	●			3.03	TID*145...
DMC146	0.575	14.6	8.76	●			3.05	TID*145...
DMC147	0.579	14.7	8.76	●			3.07	TID*145...
DMC148	0.583	14.8	8.76	●			3.09	TID*145...
DMC149	0.587	14.9	8.76	●			3.11	TID*145...
DMC150	0.591	15	9.44	●			3.18	TID*150...
DMC151	0.594	15.1	9.44	●			3.2	TID*150...
DMC152	0.598	15.2	9.44	●			3.22	TID*150...
DMC153	0.602	15.3	9.44	●			3.24	TID*150...
DMC154	0.606	15.4	9.44	●			3.26	TID*150...
DMC155	0.610	15.5	9.44	●			3.28	TID*150...
DMC156	0.614	15.6	9.44	●			3.3	TID*150...
DMC157	0.618	15.7	9.44	●			3.32	TID*150...
DMC158	0.622	15.8	9.44	●			3.34	TID*150...
DMC159	0.626	15.9	9.44	●			3.36	TID*150...
DMC160	0.630	16	10.07	●			3.39	TID*160...
DMC161	0.634	16.1	10.07	●			3.41	TID*160...
DMC162	0.638	16.2	10.07	●			3.43	TID*160...
DMC163	0.642	16.3	10.07	●			3.45	TID*160...
DMC164	0.646	16.4	10.07	●			3.47	TID*160...
DMC165	0.650	16.5	10.07	●			3.49	TID*160...
DMC166	0.654	16.6	10.07	●			3.51	TID*160...
DMC167	0.657	16.7	10.07	●			3.53	TID*160...
DMC168	0.661	16.8	10.07	●			3.55	TID*160...
DMC169	0.665	16.9	10.07	●			3.57	TID*160...
DMC170	0.669	17	10.68	●			3.57	TID*170...
DMC171	0.673	17.1	10.68	●			3.59	TID*170...
DMC172	0.677	17.2	10.68	●			3.61	TID*170...
DMC173	0.681	17.3	10.68	●			3.63	TID*170...
DMC174	0.685	17.4	10.68	●			3.65	TID*170...
DMC175	0.689	17.5	10.68	●			3.67	TID*170...
DMC176	0.693	17.6	10.68	●			3.69	TID*170...
DMC177	0.697	17.7	10.68	●			3.71	TID*170...
DMC178	0.701	17.8	10.68	●			3.73	TID*170...
DMC179	0.705	17.9	10.68	●			3.75	TID*170...
DMC180	0.709	18	11.35	●			3.78	TID*180...
DMC181	0.713	18.1	11.35	●			3.8	TID*180...
DMC182	0.717	18.2	11.35	●			3.82	TID*180...
DMC183	0.720	18.3	11.35	●			3.84	TID*180...
DMC184	0.724	18.4	11.35	●			3.86	TID*180...
DMC185	0.728	18.5	11.35	●			3.88	TID*180...
DMC186	0.732	18.6	11.35	●			3.9	TID*180...
DMC187	0.736	18.7	11.35	●			3.92	TID*180...
DMC188	0.740	18.8	11.35	●			3.94	TID*180...
DMC189	0.744	18.9	11.35	●			3.96	TID*180...
DMC190	0.748	19	11.91	●			3.99	TID*190...
DMC191	0.752	19.1	11.91	●			4.01	TID*190...
DMC192	0.756	19.2	11.91	●			4.03	TID*190...
DMC1927	0.759	19.27	11.91	●			4.04	TID*190...
DMC193	0.760	19.3	11.91	●			4.05	TID*190...
DMC194	0.764	19.4	11.91	●			4.07	TID*190...
DMC195	0.768	19.5	11.91	●			4.09	TID*190...
DMC196	0.772	19.6	11.91	●			4.11	TID*190...
DMC197	0.776	19.7	11.91	●			4.13	TID*190...
DMC198	0.780	19.8	11.91	●			4.15	TID*190...
DMC199	0.783	19.9	11.91	●			4.17	TID*190...

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	★		

★ : First choice
☆ : Second choice

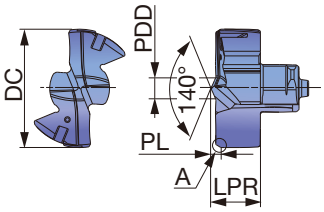
Designation	DC (in)	DC (mm	LPR (mm)	Coated AH9130			PL (mm)	Body
DMC200	0.787	20	12.62	●			4.24	TID*200...
DMC201	0.791	20.1	12.62	●			4.26	TID*200...
DMC202	0.795	20.2	12.62	●			4.28	TID*200...
DMC203	0.799	20.3	12.62	●			4.3	TID*200...
DMC204	0.803	20.4	12.62	●			4.32	TID*200...
DMC205	0.807	20.5	12.62	●			4.34	TID*200...
DMC206	0.811	20.6	12.62	●			4.36	TID*200...
DMC207	0.815	20.7	12.62	●			4.38	TID*200...
DMC208	0.819	20.8	12.62	●			4.4	TID*200...
DMC209	0.823	20.9	12.62	●			4.42	TID*200...
DMC210	0.827	21	13.2	●			4.4	TID*210...
DMC211	0.831	21.1	13.2	●			4.42	TID*210...
DMC212	0.835	21.2	13.2	●			4.44	TID*210...
DMC213	0.839	21.3	13.2	●			4.46	TID*210...
DMC214	0.843	21.4	13.2	●			4.48	TID*210...
DMC215	0.846	21.5	13.2	●			4.5	TID*210...
DMC216	0.850	21.6	13.2	●			4.52	TID*210...
DMC217	0.854	21.7	13.2	●			4.54	TID*210...
DMC218	0.858	21.8	13.2	●			4.56	TID*210...
DMC219	0.862	21.9	13.2	●			4.58	TID*210...
DMC220	0.866	22	13.84	●			4.6	TID*220...
DMC221	0.870	22.1	13.84	●			4.62	TID*220...
DMC222	0.874	22.2	13.84	●			4.64	TID*220...
DMC223	0.878	22.3	13.84	●			4.66	TID*220...
DMC224	0.882	22.4	13.84	●			4.68	TID*220...
DMC225	0.886	22.5	13.84	●			4.7	TID*220...
DMC226	0.890	22.6	13.84	●			4.72	TID*220...
DMC227	0.894	22.7	13.84	●			4.74	TID*220...
DMC228	0.898	22.8	13.84	●			4.76	TID*220...
DMC229	0.902	22.9	13.84	●			4.78	TID*220...
DMC230	0.906	23	14.51	●			4.84	TID*230...
DMC231	0.909	23.1	14.51	●			4.84	TID*220...
DMC232	0.913	23.2	14.51	●			4.86	TID*230...
DMC233	0.917	23.3	14.51	●			4.88	TID*220...
DMC234	0.921	23.4	14.51	●			4.9	TID*230...
DMC235	0.925	23.5	14.51	●			4.94	TID*230...
DMC236	0.929	23.6	14.51	●			4.94	TID*230...
DMC237	0.933	23.7	14.51	●			4.96	TID*230...
DMC238	0.937	23.8	14.51	●			4.98	TID*230...
DMC239	0.941	23.9	14.51	●			5	TID*230...
DMC240	0.945	24	15.11	●			5.03	TID*240...
DMC241	0.949	24.1	15.11	●			5.24	TID*240...
DMC242	0.953	24.2	15.11	●			5.26	TID*240...
DMC243	0.957	24.3	15.11	●			5.28	TID*240...
DMC244	0.961	24.4	15.11	●			5.3	TID*240...
DMC245	0.965	24.5	15.11	●			5.13	TID*240...
DMC246	0.969	24.6	15.11	●			5.34	TID*240...
DMC247	0.972	24.7	15.11	●			5.36	TID*240...
DMC248	0.976	24.8	15.11	●			5.38	TID*240...
DMC249	0.980	24.9	15.11	●			5.4	TID*240...
DMC250	0.984	25	15.78	●			5.28	TID*250...
DMC251	0.988	25.1	15.78	●			5.71	TID*250...
DMC252	0.992	25.2	15.78	●			5.73	TID*250...
DMC253	0.996	25.3	15.78	●			5.34	TID*250...
DMC254	1.000	25.4	15.78	●			5.77	TID*250...
DMC255	1.004	25.5	15.78	●			5.38	TID*250...
DMC256	1.008	25.6	15.78	●			5.81	TID*250...
DMC2567	1.011	25.67	15.78	●			5.42	TID*250...
DMC257	1.012	25.7	15.78	●			5.83	TID*250...
DMC258	1.016	25.8	15.78	●			5.85	TID*250...
DMC259	1.020	25.9	15.78	●			5.46	TID*250...

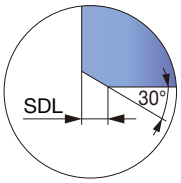
ø0.157" - ø0.783" = 2 pieces per package
ø0.787" - ø1.020" = 1 piece per package

● : Line up

DMF (Flat geometry head)







Detail in A

Tool diameter (in)	Head diameter tolerance (in)
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance (mm)
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	SDL (mm)	PL (mm)	PDD (mm)	Body
DMF060	0.236	6	3.01	●	0.4	0.61	1.15	TID*060...
DMF061	0.240	6.1	3.01	●	0.4	0.61	1.15	TID*060...
DMF062	0.244	6.2	3.01	●	0.4	0.61	1.15	TID*060...
DMF063	0.248	6.3	3.01	●	0.4	0.61	1.15	TID*060...
DMF064	0.252	6.4	3.01	●	0.4	0.61	1.15	TID*060...
DMF065	0.256	6.5	3.28	●	0.4	0.68	1.54	TID*065...
DMF066	0.260	6.6	3.28	●	0.4	0.68	1.54	TID*065...
DMF067	0.264	6.7	3.28	●	0.4	0.68	1.54	TID*065...
DMF068	0.268	6.8	3.28	●	0.4	0.68	1.54	TID*065...
DMF069	0.272	6.9	3.28	●	0.4	0.68	1.54	TID*065...
DMF070	0.276	7	3.58	●	0.4	0.68	1.54	TID*070...
DMF071	0.280	7.1	3.58	●	0.4	0.68	1.54	TID*070...
DMF072	0.283	7.2	3.58	●	0.4	0.68	1.54	TID*070...
DMF073	0.287	7.3	3.58	●	0.4	0.68	1.54	TID*070...
DMF074	0.291	7.4	3.58	●	0.4	0.68	1.54	TID*070...
DMF075	0.295	7.5	3.58	●	0.4	0.68	1.54	TID*075...
DMF076	0.299	7.6	3.58	●	0.4	0.68	1.54	TID*075...
DMF078	0.307	7.8	3.58	●	0.4	0.68	1.54	TID*075...
DMF079	0.311	7.9	3.58	●	0.4	0.68	1.54	TID*075...
DMF080	0.315	8	4.39	●	0.7	1.09	2.44	TID*080...
DMF081	0.319	8.1	4.39	●	0.7	1.09	2.44	TID*080...
DMF082	0.323	8.2	4.39	●	0.7	1.09	2.44	TID*080...
DMF083	0.327	8.3	4.39	●	0.7	1.09	2.44	TID*080...
DMF084	0.331	8.4	4.39	●	0.7	1.09	2.44	TID*080...
DMF085	0.335	8.5	4.39	●	0.7	1.09	2.44	TID*085...
DMF086	0.339	8.6	4.39	●	0.7	1.09	2.44	TID*085...
DMF087	0.343	8.7	4.39	●	0.7	1.09	2.44	TID*085...
DMF088	0.346	8.8	4.39	●	0.7	1.09	2.44	TID*085...
DMF089	0.350	8.9	4.39	●	0.7	1.09	2.44	TID*085...
DMF090	0.354	9	4.61	●	0.7	1.11	2.55	TID*090...
DMF091	0.358	9.1	4.61	●	0.7	1.11	2.55	TID*090...
DMF092	0.362	9.2	4.61	●	0.7	1.11	2.55	TID*090...
DMF093	0.366	9.3	4.61	●	0.7	1.11	2.55	TID*090...
DMF094	0.370	9.4	4.61	●	0.7	1.11	2.55	TID*090...
DMF095	0.374	9.5	4.61	●	0.7	1.11	2.55	TID*095...
DMF096	0.378	9.6	4.61	●	0.7	1.11	2.55	TID*095...
DMF097	0.382	9.7	4.61	●	0.7	1.11	2.55	TID*095...
DMF098	0.386	9.8	4.61	●	0.7	1.11	2.55	TID*095...
DMF099	0.390	9.9	4.61	●	0.7	1.11	2.55	TID*095...
DMF100	0.394	10	4.72	●	0.7	1.17	2.89	TID*100...
DMF101	0.398	10.1	4.72	●	0.7	1.17	2.89	TID*100...
DMF103	0.406	10.3	4.72	●	0.7	1.17	2.89	TID*100...
DMF104	0.409	10.4	4.72	●	0.7	1.17	2.89	TID*100...
DMF105	0.413	10.5	4.72	●	0.7	1.17	2.89	TID*105...
DMF106	0.417	10.6	4.72	●	0.7	1.17	2.89	TID*105...
DMF107	0.421	10.7	4.72	●	0.7	1.17	2.89	TID*105...
DMF108	0.425	10.8	4.72	●	0.7	1.17	2.89	TID*105...
DMF110	0.433	11	4.9	●	0.7	1.25	2.98	TID*110...
DMF115	0.453	11.5	4.9	●	0.7	1.25	2.98	TID*115...
DMF117	0.461	11.7	4.9	●	0.7	1.25	2.98	TID*115...
DMF120	0.472	12	5.21	●	0.7	1.26	3.13	TID*120...
DMF121	0.476	12.1	5.21	●	0.7	1.26	3.13	TID*120...

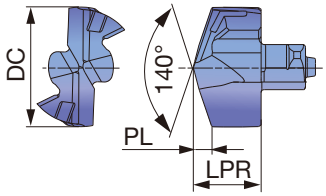
Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	SDL (mm)	PL (mm)	PDD (mm)	Body
DMF122	0.480	12.2	5.21	●	0.7	1.26	3.13	TID*120...
DMF123	0.484	12.3	5.21	●	0.7	1.26	3.13	TID*120...
DMF124	0.488	12.4	5.21	●	0.7	1.26	3.13	TID*120...
DMF125	0.492	12.5	5.21	●	0.7	1.26	3.13	TID*125...
DMF126	0.496	12.6	5.21	●	0.7	1.26	3.13	TID*125...
DMF127	0.500	12.7	5.21	●	0.7	1.26	3.13	TID*125...
DMF130	0.512	13	5.53	●	0.7	1.28	3.52	TID*130...
DMF131	0.516	13.1	5.53	●	0.7	1.28	3.52	TID*130...
DMF133	0.524	13.3	5.53	●	0.7	1.28	3.52	TID*130...
DMF135	0.531	13.5	5.53	●	0.7	1.28	3.52	TID*135...
DMF137	0.539	13.7	5.53	●	0.7	1.28	3.52	TID*135...
DMF138	0.543	13.8	5.53	●	0.7	1.28	3.52	TID*135...
DMF139	0.547	13.9	5.53	●	0.7	1.28	3.52	TID*135...
DMF140	0.551	14	5.96	●	0.7	1.31	3.81	TID*140...
DMF141	0.555	14.1	5.96	●	0.7	1.31	3.81	TID*140...
DMF142	0.559	14.2	5.96	●	0.7	1.31	3.81	TID*140...
DMF143	0.563	14.3	5.96	●	0.7	1.31	3.81	TID*140...
DMF144	0.567	14.4	5.96	●	0.7	1.31	3.81	TID*140...
DMF145	0.571	14.5	5.96	●	0.7	1.31	3.81	TID*145...
DMF150	0.591	15	6.43	●	0.7	1.35	4.24	TID*150...
DMF152	0.598	15.2	6.43	●	0.7	1.35	4.24	TID*150...
DMF155	0.610	15.5	6.43	●	0.7	1.35	4.24	TID*150...
DMF157	0.618	15.7	6.43	●	0.7	1.35	4.24	TID*150...
DMF158	0.622	15.8	6.43	●	0.7	1.35	4.24	TID*150...
DMF160	0.630	16	6.84	●	0.7	1.39	4.06	TID*160...
DMF161	0.634	16.1	6.84	●	0.7	1.39	4.06	TID*160...
DMF165	0.650	16.5	6.84	●	0.7	1.39	4.06	TID*160...
DMF167	0.657	16.7	6.84	●	0.7	1.39	4.06	TID*160...
DMF170	0.669	17	7.15	●	0.7	1.4	4.14	TID*170...
DMF175	0.689	17.5	7.15	●	0.7	1.4	4.14	TID*170...
DMF179	0.705	17.9	7.15	●	0.7	1.4	4.14	TID*170...
DMF180	0.709	18	7.45	●	0.7	1.42	4.16	TID*180...
DMF185	0.728	18.5	7.45	●	0.7	1.42	4.16	TID*180...
DMF190	0.748	19	7.79	●	0.7	1.44	4.25	TID*190...
DMF195	0.768	19.5	7.79	●	0.7	1.44	4.25	TID*190...
DMF198	0.780	19.8	7.79	●	0.7	1.44	4.25	TID*190...
DMF200	0.787	20	9.12	●	0.7	1.77	6.56	TID*200...
DMF205	0.807	20.5	9.12	●	0.7	1.77	6.56	TID*200...
DMF210	0.827	21	9.54	●	0.7	1.79	6.92	TID*210...
DMF215	0.846	21.5	9.54	●	0.7	1.79	6.92	TID*210...
DMF218	0.858	21.8	9.54	●	0.7	1.79	6.92	TID*210...
DMF220	0.866	22	9.86	●	0.7	1.81	7.13	TID*220...
DMF225	0.886	22.5	9.86	●	0.7	1.81	7.13	TID*220...
DMF230	0.906	23	10.28	●	0.7	1.83	7.42	TID*230...
DMF235	0.925	23.5	10.28	●	0.7	1.83	7.42	TID*230...
DMF240	0.945	24	10.71	●	0.7	1.86	7.45	TID*240...
DMF245	0.965	24.5	10.71	●	0.7	1.86	7.45	TID*240...
DMF250	0.984	25	11.15	●	0.7	1.9	7.54	TID*250...
DMF254	1.000	25.4	11.15	●	0.7	1.9	7.54	TID*250...
DMF255	1.004	25.5	11.15	●	0.7	1.9	7.54	TID*250...
DMF259	1.020	25.9	11.15	●	0.7	1.9	7.54	TID*250...

ø0.236" - ø0.783" = 2 pieces per package
ø0.787" - ø1.020" = 1 piece per package

● : Line up

DMH (High strength cutting edge)





Tool diameter (in)	Head diameter tolerance (in)
ø0.236" - ø0.705"	+0.0007" / -0.0002"
ø0.709" - ø1.004"	+0.0008" / -0.0002"

Tool diameter (mm)	Head diameter tolerance (mm)
ø6 - ø17.9	+0.018 / -0.005
ø18 - ø25.5	+0.021 / -0.005

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials	★		

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials	★		

★ : First choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	PL (mm)	Body
DMH060	0.236	6	3.85	●	1.09	TID*060...
DMH068	0.268	6.8	4.15	●	1.33	TID*065...
DMH070	0.276	7	4.45	●	1.03	TID*070...
DMH075	0.295	7.5	4.45	●	1.12	TID*075...
DMH080	0.315	8	5.25	●	1.2	TID*080...
DMH085	0.335	8.5	5.25	●	1.29	TID*085...
DMH086	0.339	8.6	5.25	●	1.31	TID*085...
DMH087	0.343	8.7	5.25	●	1.33	TID*085...
DMH088	0.346	8.8	5.25	●	1.35	TID*085...
DMH090	0.354	9	5.65	●	1.37	TID*090...
DMH095	0.374	9.5	5.65	●	1.46	TID*095...
DMH097	0.382	9.7	5.65	●	1.5	TID*095...
DMH100	0.394	10	6.05	●	1.47	TID*100...
DMH101	0.398	10.1	6.05	●	1.49	TID*100...
DMH103	0.406	10.3	6.05	●	1.52	TID*100...
DMH104	0.409	10.4	6.05	●	1.54	TID*100...
DMH105	0.413	10.5	6.05	●	1.56	TID*105...
DMH106	0.417	10.6	6.05	●	1.58	TID*105...
DMH107	0.421	10.7	6.05	●	1.6	TID*105...
DMH108	0.425	10.8	6.05	●	1.62	TID*105...
DMH110	0.433	11	6.45	●	1.67	TID*110...
DMH111	0.437	11.1	6.45	●	1.69	TID*110...
DMH112	0.441	11.2	6.45	●	1.71	TID*110...
DMH113	0.445	11.3	6.45	●	1.72	TID*110...
DMH114	0.449	11.4	6.45	●	1.74	TID*110...
DMH115	0.453	11.5	6.45	●	1.76	TID*115...
DMH117	0.461	11.7	6.45	●	1.8	TID*115...
DMH118	0.465	11.8	6.45	●	1.82	TID*115...
DMH119	0.469	11.9	6.45	●	1.83	TID*115...
DMH120	0.472	12	6.8	●	1.82	TID*120...
DMH121	0.476	12.1	6.8	●	1.84	TID*120...
DMH122	0.480	12.2	6.8	●	1.86	TID*120...
DMH123	0.484	12.3	6.8	●	1.87	TID*120...
DMH124	0.488	12.4	6.8	●	1.89	TID*120...
DMH125	0.492	12.5	6.8	●	1.91	TID*125...
DMH126	0.496	12.6	6.8	●	1.93	TID*125...
DMH127	0.500	12.7	6.8	●	1.95	TID*125...
DMH128	0.504	12.8	6.8	●	1.97	TID*125...
DMH129	0.508	12.9	6.8	●	1.98	TID*125...
DMH130	0.512	13	7.4	●	1.96	TID*130...
DMH131	0.516	13.1	7.4	●	1.98	TID*130...
DMH132	0.520	13.2	7.4	●	2	TID*130...
DMH133	0.524	13.3	7.4	●	2.01	TID*130...
DMH134	0.528	13.4	7.4	●	2.03	TID*130...
DMH135	0.531	13.5	7.4	●	2.05	TID*135...
DMH136	0.535	13.6	7.4	●	2.07	TID*135...
DMH137	0.539	13.7	7.4	●	2.09	TID*135...
DMH138	0.543	13.8	7.4	●	2.11	TID*135...
DMH139	0.547	13.9	7.4	●	2.12	TID*135...
DMH140	0.551	14	7.95	●	2.12	TID*140...
DMH141	0.555	14.1	7.95	●	2.14	TID*140...
DMH142	0.559	14.2	7.95	●	2.16	TID*140...
DMH143	0.563	14.3	7.95	●	2.17	TID*140...

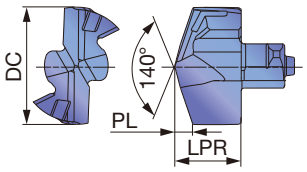
Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	PL (mm)	Body
DMH144	0.567	14.4	7.95	●	2.19	TID*140...
DMH145	0.571	14.5	7.95	●	2.21	TID*145...
DMH146	0.575	14.6	7.95	●	2.23	TID*145...
DMH147	0.579	14.7	7.95	●	2.25	TID*145...
DMH150	0.591	15	8.53	●	2.27	TID*150...
DMH151	0.594	15.1	8.53	●	2.29	TID*150...
DMH152	0.598	15.2	8.53	●	2.31	TID*150...
DMH153	0.602	15.3	8.53	●	2.32	TID*150...
DMH154	0.606	15.4	8.53	●	2.34	TID*150...
DMH155	0.610	15.5	8.53	●	2.36	TID*150...
DMH156	0.614	15.6	8.53	●	2.38	TID*150...
DMH157	0.618	15.7	8.53	●	2.40	TID*150...
DMH158	0.622	15.8	8.53	●	2.42	TID*150...
DMH160	0.630	16	9.1	●	2.42	TID*160...
DMH162	0.638	16.2	9.1	●	2.46	TID*160...
DMH163	0.642	16.3	9.1	●	2.47	TID*160...
DMH165	0.650	16.5	9.1	●	2.51	TID*160...
DMH166	0.654	16.6	9.1	●	2.53	TID*160...
DMH167	0.657	16.7	9.1	●	2.55	TID*160...
DMH170	0.669	17	9.7	●	2.59	TID*170...
DMH171	0.673	17.1	9.7	●	2.61	TID*170...
DMH175	0.689	17.5	9.7	●	2.68	TID*170...
DMH177	0.697	17.7	9.7	●	2.72	TID*170...
DMH178	0.701	17.8	9.7	●	2.74	TID*170...
DMH179	0.705	17.9	9.7	●	2.75	TID*170...
DMH180	0.709	18	10.3	●	2.73	TID*180...
DMH181	0.713	18.1	10.3	●	2.75	TID*180...
DMH183	0.720	18.3	10.3	●	2.78	TID*180...
DMH185	0.728	18.5	10.3	●	2.82	TID*180...
DMH187	0.736	18.7	10.3	●	2.86	TID*180...
DMH190	0.748	19	10.8	●	2.88	TID*190...
DMH191	0.752	19.1	10.8	●	2.90	TID*190...
DMH192	0.756	19.2	10.8	●	2.92	TID*190...
DMH193	0.760	19.3	10.8	●	2.93	TID*190...
DMH194	0.764	19.4	10.8	●	2.95	TID*190...
DMH195	0.768	19.5	10.8	●	2.97	TID*190...
DMH196	0.772	19.6	10.8	●	2.99	TID*190...
DMH197	0.776	19.7	10.8	●	3.01	TID*190...
DMH200	0.787	20	11.4	●	3.02	TID*200...
DMH205	0.807	20.5	11.4	●	3.11	TID*200...
DMH210	0.827	21	11.98	●	3.18	TID*210...
DMH215	0.846	21.5	11.98	●	3.27	TID*210...
DMH220	0.866	22	12.56	●	3.32	TID*220...
DMH225	0.886	22.5	12.56	●	3.41	TID*220...
DMH230	0.906	23	13.13	●	3.46	TID*230...
DMH235	0.925	23.5	13.13	●	3.55	TID*230...
DMH240	0.945	24	13.7	●	3.62	TID*240...
DMH245	0.965	24.5	13.7	●	3.71	TID*240...
DMH250	0.984	25	14.3	●	3.8	TID*250...
DMH255	1.004	25.5	14.3	●	3.89	TID*250...

ø0.236" - ø0.783" = 2 pieces per package
ø0.787" - ø1.004" = 1 piece per package

● : Line up

DMN (Non-ferrous metals drilling)





Tool diameter (in)	Head diameter tolerance (in)
ø0.394" - ø0.689"	+0.0004" / 0
ø0.709" - ø0.768"	+0.0005" / 0

Tool diameter (mm)	Head diameter tolerance (mm)
ø10 - ø17.5	+0.01 / 0
ø18 - ø19.9	+0.012 / 0

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated KS15F	PL (mm)	Body
DMN100	0.394	10	6.05	●	1.47	TID*100...
DMN102	0.402	10.2	6.05	●	1.51	TID*100...
DMN105	0.413	10.5	6.05	●	1.56	TID*105...
DMN108	0.425	10.8	6.05	●	1.62	TID*105...
DMN110	0.433	11	6.45	●	1.67	TID*110...
DMN115	0.453	11.5	6.45	●	1.76	TID*115...
DMN120	0.472	12	6.8	●	1.82	TID*120...
DMN123	0.484	12.3	6.8	●	1.87	TID*120...
DMN125	0.492	12.5	6.8	●	1.91	TID*125...
DMN126	0.496	12.6	6.8	●	1.93	TID*125...
DMN127	0.500	12.7	6.8	●	1.95	TID*125...
DMN130	0.512	13	7.4	●	1.96	TID*130...
DMN135	0.531	13.5	7.4	●	2.05	TID*135...
DMN138	0.543	13.8	7.4	●	2.11	TID*135...
DMN140	0.551	14	7.95	●	2.12	TID*140...
DMN142	0.559	14.2	7.95	●	2.16	TID*140...
DMN145	0.571	14.5	7.95	●	2.21	TID*145...
DMN150	0.591	15	8.53	●	2.27	TID*150...
DMN152	0.598	15.2	8.53	●	2.31	TID*150...
DMN155	0.610	15.5	8.53	●	2.36	TID*150...
DMN158	0.622	15.8	8.53	●	2.42	TID*150...
DMN159	0.626	15.9	8.53	●	2.43	TID*150...
DMN160	0.630	16	9.1	●	2.42	TID*160...
DMN163	0.642	16.3	9.1	●	2.47	TID*160...
DMN165	0.650	16.5	9.1	●	2.51	TID*160...
DMN170	0.669	17	9.7	●	2.59	TID*170...
DMN175	0.689	17.5	9.7	●	2.68	TID*170...
DMN180	0.709	18	10.3	●	2.73	TID*180...
DMN185	0.728	18.5	10.3	●	2.82	TID*180...
DMN190	0.748	19	10.8	●	2.88	TID*190...
DMN195	0.768	19.5	10.8	●	2.97	TID*190...

ø0.394" - ø0.768" = 2 pieces per package

● : Line up

STANDARD CUTTING CONDITIONS

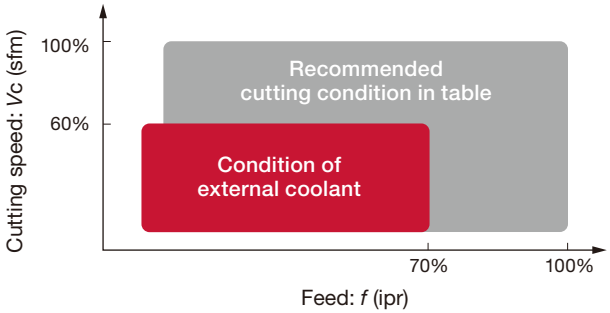
ISO	Workpiece material	Hardness	Cutting speed	Feed: *f* (ipr) Tool diameter: DC (in)									
			Vc (sfm)	ø0.157" - ø0.173"	ø0.177" - ø0.193"	ø0.197" - ø0.232"	ø0.236" - ø0.311"	ø0.315" - ø0.390"	ø0.394" - ø0.469"	ø0.472" - ø0.547"	ø0.551" - ø0.626"	ø0.630" - ø0.783"	ø0.787" - ø1.020"
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	- 200 HB	262 - 459	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
	High carbon steels (C > 0.3) 1045, 1055, etc.	- 300 HB	230 - 394	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.01 0- 0.018	0.010 - 0.018
	Low alloy steels 4140, etc.	- 200 HB	230 - 394	0.002 - 0.002	0.002 - 0.003	0.003 - 0.005	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
	Alloy steels 8620, etc.	- 300 HB	131 - 295	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
M	Stainless steels 304SS, 316SS, etc.	- 250 HB	98 - 230	-	-	0.002 - 0.003	0.003 - 0.004	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.006 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Gray cast irons Class 25, etc.	150 - 250 HB	262 - 591	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
	Ductile cast irons 100-70-03, etc.	150 - 250 HB	262 - 459	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
N	Aluminum alloys	-	262 - 722	-	-	-	0.004 - 0.008	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.02	0.016 - 0.024	0.020 - 0.030
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.008	0.006 - 0.009	0.007 - 0.011
	Nickel-based alloys	- 40 HRC	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.005 - 0.009	0.006 - 0.009
H	Hardened steel	- 50 HRC	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.009	0.006 - 0.010

- Cutting conditions in the above table show standard cutting conditions
- Cutting conditions may change due to the rigidity and power of the machine and the workpiece material
- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions

Over 2xD drilling without internal coolant

In an environment without internal coolant, an external coolant supply is required. It is recommended to reduce the cutting conditions based on the material, diameter, and hole depth. Over 2xD drill, a step or pecking cycle operation is recommended in order to cool the cutting edge and improve chip evacuation.

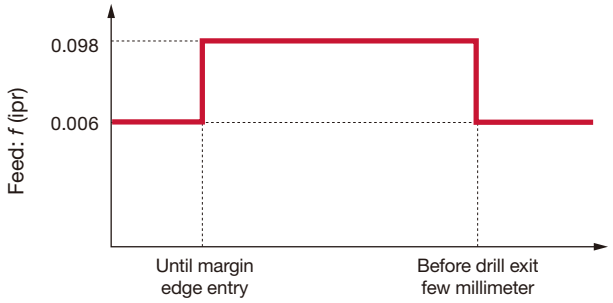
2xD drilling in P material



Over 8xD drilling

For drilling operations over 8xD a DMC head is recommended to achieve stable drill machining. When drilling a through hole with 8xD to 12xD depth, the feed rate at entry and before drill exit should be 40-50% lower than regular feed rate. The length of machining with the lower feed should be similar to LPR length of the head. After drill entry it is possible to increase the feed depending on target productivity.

12xD drilling in P material of through hole depth
DC = 0.472"



CRITERIA FOR THE END OF DRILL-BODY LIFE

For your safety, it is recommended that drill bodies are replaced with a new drill body once they reach fatigue tool life. To determine the fatigue life, measure the torque value required to unlock the drill head with a torque driver. The exclusive clamp key (sold separately) should be used to measure the unlocking torque value. When the unlocking torque value is equal to or smaller than the values listed below for the respective head size, replace the drill body with a new one.

Clamping key for measuring un-clamping torque:
KHS-TID10-19.99



* The clamping key can be connect with general torque drivers.



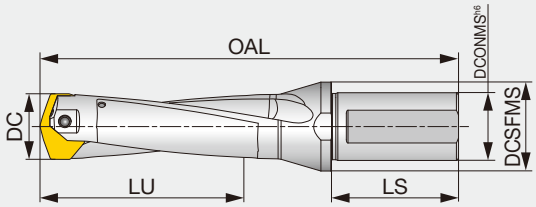
Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body (lbf·ft)
DM*100-109	0.15
DM*110-119	0.15
DM*120-129	0.18
DM*130-139	0.18
DM*140-149	0.22
DM*150-159	0.22
DM*160-169	0.26
DM*170-179	0.26
DM*180-189	0.3
DM*190-199	0.3

DRILLFORCE MEISTER

TISU L/D=3

Exchangeable head drill, L/D = 3, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL SMP	OAL SMF	Pocket size	Head
TISU1024F1250-3	1.024 - 1.059	1.250	1.772	3.257	2.362	7.677	7.713	26	SM*26*
TISU1063F1250-3	1.063 - 1.098	1.250	1.772	3.382	2.362	7.815	7.850	27	SM*27*
TISU1102F1250-3	1.102 -1.138	1.250	1.772	3.508	2.362	7.968	7.992	28	SM*28*
TISU1142F1250-3	1.142 - 1.177	1.250	1.772	3.633	2.362	8.106	8.13	29	SM*29*
TISU1181F1250-3	1.181 - 1.217	1.250	1.772	3.758	2.362	8.256	8.272	30	SM*30*
TISU1220F1250-3	1.220 - 1.256	1.250	1.772	3.883	2.362	8.394	8.409	31	SM*31*
TISU1260F1500-3	1.260 - 1.295	1.500	2.165	4.009	2.677	9.055	9.067	32	SM*32*
TISU1299F1500-3	1.299 - 1.335	1.500	2.165	4.134	2.677	9.193	9.205	33	SM*33*
TISU1339F1500-3	1.339 - 1.374	1.500	2.165	4.260	2.677	9.331	9.343	34	SM*34*
TISU1378F1500-3	1.378 - 1.413	1.500	2.165	4.385	2.677	9.484	9.488	35	SM*35*
TISU1417F1500-3	1.417 - 1.453	1.500	2.165	4.510	2.677	9.622	9.626	36	SM*36*
TISU1457F1500-3	1.457 - 1.492	1.500	2.165	4.635	2.677	9.760	9.764	37	SM*37*
TISU1496F1500-3	1.496 - 1.531	1.500	2.165	4.760	2.677	9.917	9.913	38	SM*38*
TISU1535F1500-3	1.535 - 1.571	1.500	2.165	4.885	2.677	10.055	10.051	39	SM*39*
TISU1575F1500-3	1.575 - 1.614	1.500	2.165	5.011	2.677	10.193	10.189	40	SM*40*

Tool diameter (in)	Hole diameter tolerance (in)*
ø1.024" - ø1.177"	+0.0020" / 0
ø1.181" - ø1.614"	+0.0024" / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.

SPARE PARTS







Designation	Clamping screw	Wrench: Torx bit	Wrench: Grip	Screw for side port	Plug*
TISU1024F... - TISU1063F...	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1102F... - TISU1142F...	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1181F... - TISU1220F...	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1260F... - TISU1339F...	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1378F... - TISU1457F...	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1496F... - TISU1575F...	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN

*Optional part
Inner thread size: NPTF1/4

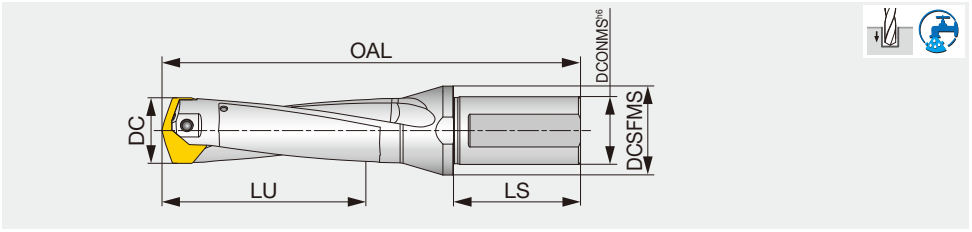
Recommended clamping torque : TS50230D3= 3.69 lb·ft, 5 N·m, TS50250D35= 4.06 lb·ft, 5.5N·m, TS60265D4= 4.43 lb·ft, 6N·m, TS60285D42= 4.43 lb·ft, 6N·m, TS60320D5= 4.43 lb·ft, 6N·m, TS80340D6= 5.16 lb·ft, 7N·m

Reference pages: Head → J043 - J044
Standard cutting conditions → J045

TIS L/D=3

Exchangeable head drill, L/D = 3, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL SMP	OAL SMF	Pocket size	Head
TIS200F25-3	20 - 20.9	25	32	63.1	56	148.1	148.4	20	SM*20*
TIS210F25-3	21 - 21.9	25	32	66.3	56	151.1	151.4	21	SM*21*
TIS220F25-3	22 - 22.9	25	32	69.4	56	154.4	154.5	22	SM*22*
TIS230F25-3	23 - 23.9	25	32	72.6	56	157.4	157.5	23	SM*23*
TIS240F32-3	24 - 24.9	32	40	75.7	60	170.7	170.7	24	SM*24*
TIS250F32-3	25 - 25.9	32	40	78.9	60	173.7	173.7	25	SM*25*
TIS260F32-3	26 - 26.9	32	40	82	60	177	177.9	26	SM*26*
TIS270F32-3	27 - 27.9	32	40	85.2	60	180	180.9	27	SM*27*
TIS280F32-3	28 - 28.9	32	40	88.4	60	188.4	189.3	28	SM*28*
TIS290F32-3	29 - 29.9	32	40	91.5	60	191.4	-	29	SM*29*
TIS300F32-3	30 - 30.9	32	42	94.7	60	194.7	195.1	30	SM*30*
TIS310F32-3	31 - 31.9	32	42	97.9	60	197.7	198.1	31	SM*31*
TIS320F40-3	32 - 32.9	40	48	101	68	211	211.3	32	SM*32*
TIS330F40-3	33 - 33.9	40	48	104.2	68	214	214.3	33	SM*33*
TIS340F40-3	34 - 34.9	40	48	107.3	68	217	217.3	34	SM*34*
TIS350F40-3	35 - 35.9	40	48	110.4	68	220.4	220.5	35	SM*35*
TIS360F40-3	36 - 36.9	40	48	113.6	68	223.4	223.5	36	SM*36*
TIS370F40-3	37 - 37.9	40	48	116.8	68	226.4	-	37	SM*37*
TIS380F40-3	38 - 38.9	40	50	119.9	68	234.9	-	38	SM*38*
TIS390F40-3	39 - 39.9	40	50	123.1	68	237.9	237.8	39	SM*39*
TIS400F40-3	40 - 41	40	50	126.3	68	240.9	240.8	40	SM*40*

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø20 - ø29.9	+0.05 / 0
ø30 - ø41	+0.06 / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.

SPARE PARTS





Designation	Clamping screw	Wrench	
		Torx Bit	Grip
TIS200F25-*, TIS210F25-*	TS40178D25	BLDT20/S7	H-TB2W
TIS220F25-*, TIS230F25-*	TS40198D28	BLDT20/S7	H-TB2W
TIS240F32-*, TIS250F32-*	TS40210D3	BLDT20/S7	H-TB2W
TIS260F32-*, TIS270F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS280F32-*, TIS290F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS300F32-*, TIS310F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS320F40-*, TIS330F40-*, TIS340F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS350F40-*, TIS360F40-*, TIS370F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS380F40-*, TIS390F40-*, TIS400F40-*	TS80340D6	BLDT25/S7	H-TB2W

Recommended clamping torque (N·m):
TS40178D25, TS40198D28, TS40210D3 = 4.5,
TS50230D3 = 5, TS50250D35 = 5.5,
TS60265D4, TS60285D42, TS60320D5 = 6,
TS80340D6 = 7

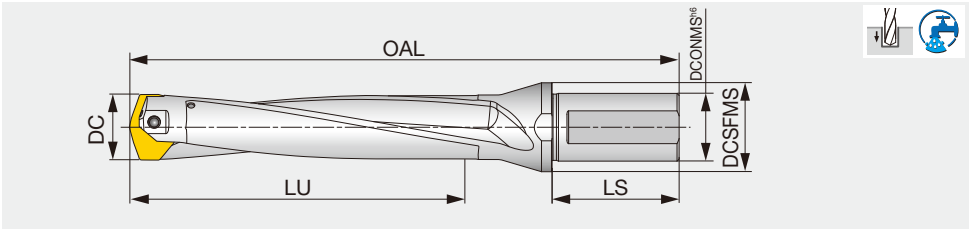
Reference pages: Head → J043 - J044
Standard cutting conditions → J045

DRILL FORCE MEISTER

TISU L/D=5

Exchangeable head drill, L/D = 5, flange type





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL SMP	OAL SMF	Pocket size	Head
TISU1024F1250-5	1.024 - 1.059	1.250	1.772	5.304	2.362	9.724	9.760	26	SM*26*
TISU1063F1250-5	1.063 - 1.098	1.250	1.772	5.508	2.362	9.941	9.976	27	SM*27*
TISU1102F1250-5	1.102 -1.138	1.250	1.772	5.713	2.362	10.173	10.197	28	SM*28*
TISU1142F1250-5	1.142 - 1.177	1.250	1.772	5.917	2.362	10.39	10.413	29	SM*29*
TISU1181F1250-5	1.181 - 1.217	1.250	1.772	6.121	2.362	10.618	10.634	30	SM*30*
TISU1220F1250-5	1.220 - 1.256	1.250	1.772	6.324	2.362	10.835	10.850	31	SM*31*
TISU1260F1500-5	1.260 - 1.295	1.500	2.165	6.528	2.677	11.575	11.587	32	SM*32*
TISU1299F1500-5	1.299 - 1.335	1.500	2.165	6.732	2.677	11.791	11.803	33	SM*33*
TISU1339F1500-5	1.339 - 1.374	1.500	2.165	6.937	2.677	12.008	12.020	34	SM*34*
TISU1378F1500-5	1.378 - 1.413	1.500	2.165	7.141	2.677	12.24	12.244	35	SM*35*
TISU1417F1500-5	1.417 - 1.453	1.500	2.165	7.345	2.677	12.457	12.461	36	SM*36*
TISU1457F1500-5	1.457 - 1.492	1.500	2.165	7.548	2.677	12.673	12.677	37	SM*37*
TISU1496F1500-5	1.496 - 1.531	1.500	2.165	7.752	2.677	12.909	12.906	38	SM*38*
TISU1535F1500-5	1.535 - 1.571	1.500	2.165	7.956	2.677	13.126	13.122	39	SM*39*
TISU1575F1500-5	1.575 - 1.614	1.500	2.165	8.161	2.677	13.343	13.339	40	SM*40*

Tool diameter (in)	Hole diameter tolerance (in)*
ø1.024" - ø1.177"	+0.0030" / 0
ø1.181" - ø1.614"	+0.0035" / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.

SPARE PARTS







Designation	Clamping screw	Wrench: Torx bit	Wrench: Grip	Screw for side port	Plug*
TISU1024F... - TISU1063F...	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1102F... - TISU1142F...	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1181F... - TISU1220F...	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1260F... - TISU1339F...	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1378F... - TISU1457F...	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1496F... - TISU1575F...	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN

*Optional part
Inner thread size: NPTF1/4

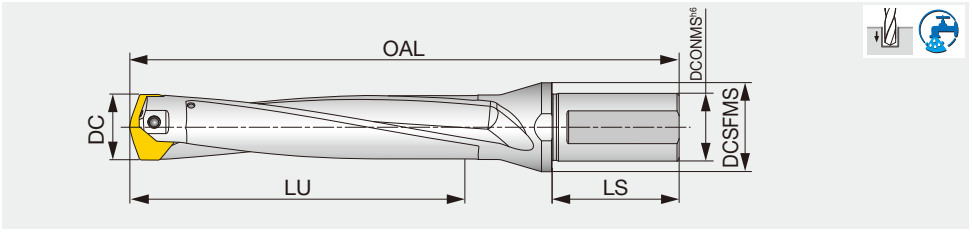
Recommended clamping torque : TS50230D3= 3.69 lb·ft, 5 N·m, TS50250D35= 4.06 lb·ft, 5.5 N·m, TS60265D4= 4.43 lb·ft, 6 N·m, TS60285D42= 4.43 lb·ft, 6 N·m, TS60320D5= 4.43 lb·ft, 6 N·m, TS80340D6= 5.16 lb·ft, 7 N·m

Reference pages: Head → J043 - J044
Standard cutting conditions → J045

TIS L/D=5

Exchangeable head drill, L/D = 5, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL SMP	OAL SMF	Pocket size	Head
TIS200F25-5	20 - 20.9	25	32	103.1	56	188.1	188.4	20	SM*20*
TIS210F25-5	21 - 21.9	25	32	108.3	56	193.1	193.4	21	SM*21*
TIS220F25-5	22 - 22.9	25	32	113.4	56	198.4	198.5	22	SM*22*
TIS230F25-5	23 - 23.9	25	32	118.6	56	203.4	203.5	23	SM*23*
TIS240F32-5	24 - 24.9	32	40	123.7	60	218.7	218.7	24	SM*24*
TIS250F32-5	25 - 25.9	32	40	128.9	60	223.7	223.7	25	SM*25*
TIS260F32-5	26 - 26.9	32	40	134	60	229	229.9	26	SM*26*
TIS270F32-5	27 - 27.9	32	40	139.2	60	234	234.9	27	SM*27*
TIS280F32-5	28 - 28.9	32	40	144.4	60	244.4	245.3	28	SM*28*
TIS290F32-5	29 - 29.9	32	40	149.5	60	249.4	-	29	SM*29*
TIS300F32-5	30 - 30.9	32	42	154.7	60	254.7	255.1	30	SM*30*
TIS310F32-5	31 - 31.9	32	42	159.9	60	259.7	260.1	31	SM*31*
TIS320F40-5	32 - 32.9	40	48	165	68	275	275.3	32	SM*32*
TIS330F40-5	33 - 33.9	40	48	170.2	68	280	280.3	33	SM*33*
TIS340F40-5	34 - 34.9	40	48	175.3	68	285	285.3	34	SM*34*
TIS350F40-5	35 - 35.9	40	48	180.4	68	290.4	290.5	35	SM*35*
TIS360F40-5	36 - 36.9	40	48	185.6	68	295.4	295.5	36	SM*36*
TIS370F40-5	37 - 37.9	40	48	190.8	68	300.4	-	37	SM*37*
TIS380F40-5	38 - 38.9	40	50	195.9	68	310.9	-	38	SM*38*
TIS390F40-5	39 - 39.9	40	50	201.1	68	315.9	315.8	39	SM*39*
TIS400F40-5	40 - 41	40	50	206.3	68	320.9	320.8	40	SM*40*

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø20 - ø29.9	+0.08 / 0
ø30 - ø41	+0.09 / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.

SPARE PARTS





Designation	Clamping screw	Wrench	
		Torx Bit	Grip
TIS200F25-*, TIS210F25-*	TS40178D25	BLDT20/S7	H-TB2W
TIS220F25-*, TIS230F25-*	TS40198D28	BLDT20/S7	H-TB2W
TIS240F32-*, TIS250F32-*	TS40210D3	BLDT20/S7	H-TB2W
TIS260F32-*, TIS270F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS280F32-*, TIS290F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS300F32-*, TIS310F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS320F40-*, TIS330F40-*, TIS340F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS350F40-*, TIS360F40-*, TIS370F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS380F40-*, TIS390F40-*, TIS400F40-*	TS80340D6	BLDT25/S7	H-TB2W

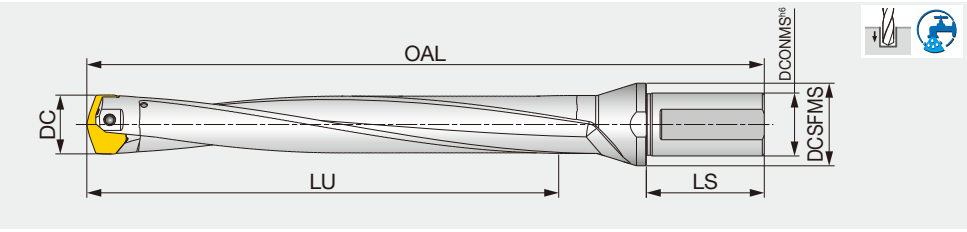
Recommended clamping torque:
TS40178D25, TS40198D28, TS40210D3 = 4.5 N·m,
TS50230D3 = 5 N·m, TS50250D35 = 5.5 N·m,
TS60265D4, TS60285D42, TS60320D5 = 6 N·m,
TS80340D6 = 7 N·m

Reference pages: Head → J043 - J044
Standard cutting conditions → J045

DRILLFORCE MEISTER
TIS L/D=8

Exchangeable head drill, L/D = 8, flange type





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL SMP	OAL SMF	Pocket size	Head
TIS260F32-8	26 - 26.9	32	40	212	60	307	307.9	26	SM*26*
TIS270F32-8	27 - 27.9	32	40	220.2	60	315	315.9	27	SM*27*
TIS290F32-8	29 - 29.9	32	40	236.5	60	336.4	-	29	SM*29*
TIS300F32-8	30 - 30.9	32	42	244.7	60	344.7	345.1	30	SM*30*
TIS320F40-8	32 - 32.9	40	48	261	68	371.7	372	32	SM*32*
TIS330F40-8	33 - 33.9	40	48	269.2	68	379	379.3	33	SM*33*

Tool diameter (mm)	Hole diameter tolerance (mm)*
ø26 - ø29.9	+0.08 / 0
ø30 - ø33.9	+0.09 / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.

SPARE PARTS

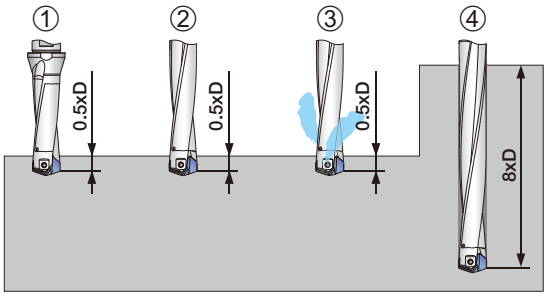




Designation	Clamping screw	Wrench	
		Torx Bit	Grip
TIS260F32-*, TIS270F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS290F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS300F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS320F40-*, TIS330F40-*	TS60285D42	BLDT25/S7	H-TB2W

Recommended clamping torque: TS50230D3 = 5 N·m, TS50250D35 = 5.5 N·m, TS60265D4, TS60285D42 = 6 N·m

● Tips when using 8xD drills



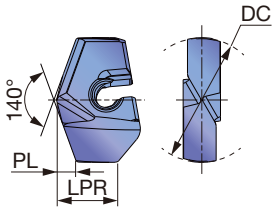
① Drill a pilot hole to the depth of 0.5xD (3xD drill body is recommended). The same head diameter should be used for the pre-hole and the main drilling process.
② Rotate the drill at a low speed (eg. 100 rpm). While maintaining the drill speed, slowly feed into the pilot hole for several millimeters from the entry.
③ Activate the internal coolant and increase the drill rotation to the required speed.
④ Drill to the required depth using the recommended cutting parameters.

Reference pages: Head → J043 - J044
Standard cutting conditions → J045

DRILL HEAD

SMP (General purpose)





Tool diameter (in)	Head diameter tolerance (in)
ø0.787" - ø1.177"	+0.0006" / -0.0006"
ø1.181" - ø1.614"	+0.0006" / -0.0008"

Tool diameter (mm)	Head diameter tolerance (mm)
ø20 - ø29.9	+0.014 / -0.015
ø30 - ø41	+0.014 / -0.02

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (in)	Coated AH9130	Coated AH725	PL (in)	Pocket size	Body
SMP200	0.787	20	0.380	●	●	0.122	20	TIS200F25-*
SMP205	0.807	20.5	0.372	●	●	0.126	20	TIS200F25-*
SMP210	0.827	21	0.363	●	●	0.130	21	TIS210F25-*
SMP215	0.846	21.5	0.355		●	0.133	21	TIS210F25-*
SMP220	0.866	22	0.415	●	●	0.135	22	TIS220F25-*
SMP222	0.874	22.2	0.412	●		0.136	22	TIS220F25-*
SMP223	0.878	22.3	0.410		●	0.137	22	TIS220F25-*
SMP225	0.886	22.5	0.407		●	0.138	22	TIS220F25-*
SMP230	0.906	23	0.398	●	●	0.142	23	TIS230F25-*
SMP235	0.925	23.5	0.390		●	0.145	23	TIS230F25-*
SMP238	0.937	23.8	0.385	●		0.148	23	TIS230F25-*
SMP240	0.945	24	0.424	●	●	0.147	24	TIS240F32-*
SMP245	0.965	24.5	0.415	●	●	0.150	24	TIS240F32-*
SMP247	0.972	24.7	0.412	●	●	0.152	24	TIS240F32-*
SMP250	0.984	25	0.407	●	●	0.154	25	TIS250F32-*
SMP255	1.004	25.5	0.399		●	0.157	25	TIS250F32-*
SMP260	1.024	26	0.455	●	●	0.159	26	TIS260F32-*
SMP261	1.028	26.1	0.453		●	0.160	26	TIS260F32-*
SMP262	1.031	26.2	0.452	●		0.161	26	TIS260F32-*
SMP263	1.035	26.3	0.450	●		0.161	26	TIS260F32-*
SMP264	1.039	26.4	0.448	●		0.162	26	TIS260F32-*
SMP265	1.043	26.5	0.446	●	●	0.163	26	TIS260F32-*
SMP266	1.047	26.6	0.445	●		0.163	26	TIS260F32-*
SMP267	1.051	26.7	0.443	●	●	0.164	26	TIS260F32-*
SMP270	1.063	27	0.438	●	●	0.166	27	TIS270F32-*
SMP271	1.067	27.1	0.437		●	0.167	27	TIS270F32-*
SMP272	1.071	27.2	0.435		●	0.168	27	TIS270F32-*
SMP273	1.075	27.3	0.433	●		0.169	27	TIS270F32-*
SMP275	1.083	27.5	0.430	●	●	0.170	27	TIS270F32-*
SMP276	1.087	27.6	0.428	●		0.170	27	TIS270F32-*
SMP280	1.102	28	0.462	●	●	0.171	28	TIS280F32-*
SMP281	1.106	28.1	0.461		●	0.172	28	TIS280F32-*
SMP283	1.114	28.3	0.457	●		0.173	28	TIS280F32-*
SMP285	1.122	28.5	0.454		●	0.175	28	TIS280F32-*
SMP286	1.126	28.6	0.452		●	0.176	28	TIS280F32-*
SMP290	1.142	29	0.446	●	●	0.178	29	TIS290F32-*
SMP291	1.146	29.1	0.444		●	0.179	29	TIS290F32-*
SMP293	1.154	29.3	0.441	●		0.181	29	TIS290F32-*
SMP295	1.161	29.5	0.437		●	0.182	29	TIS290F32-*
SMP296	1.165	29.6	0.436		●	0.183	29	TIS290F32-*
SMP297	1.169	29.7	0.434	●		0.183	29	TIS290F32-*
SMP298	1.173	29.8	0.432	●		0.184	29	TIS290F32-*
SMP299	1.177	29.9	0.431	●		0.185	29	TIS290F32-*
SMP300	1.181	30	0.557	●	●	0.184	30	TIS300F32-*
SMP301	1.185	30.1	0.555		●	0.185	30	TIS300F32-*
SMP302	1.189	30.2	0.554	●	●	0.185	30	TIS300F32-*
SMP303	1.193	30.3	0.552		●	0.186	30	TIS300F32-*
SMP304	1.197	30.4	0.550	●		0.187	30	TIS300F32-*
SMP305	1.201	30.5	0.548		●	0.187	30	TIS300F32-*
SMP307	1.209	30.7	0.545	●		0.189	30	TIS300F32-*
SMP308	1.213	30.8	0.543		●	0.190	30	TIS300F32-*
SMP310	1.220	31	0.540		●	0.191	31	TIS310F32-*
SMP311	1.224	31.1	0.539		●	0.192	31	TIS310F32-*

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	★
H	Hard materials	☆	★

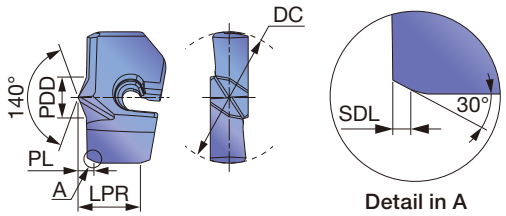
★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (in)	Coated AH9130	Coated AH725	PL (in)	Pocket size	Body
SMP313	1.232	31.3	0.535	●		0.193	31	TIS310F32-*
SMP315	1.240	31.5	0.532		●	0.194	31	TIS310F32-*
SMP318	1.252	31.8	0.527		●	0.197	31	TIS310F32-*
SMP320	1.260	32	0.572	●	●	0.196	32	TIS320F40-*
SMP321	1.264	32.1	0.570		●	0.197	32	TIS320F40-*
SMP322	1.268	32.2	0.569	●		0.198	32	TIS320F40-*
SMP325	1.280	32.5	0.564		●	0.200	32	TIS320F40-*
SMP328	1.291	32.8	0.559		●	0.202	32	TIS320F40-*
SMP330	1.299	33	0.556	●	●	0.203	33	TIS330F40-*
SMP331	1.303	33.1	0.554		●	0.204	33	TIS330F40-*
SMP333	1.311	33.3	0.550		●	0.206	33	TIS330F40-*
SMP335	1.319	33.5	0.547		●	0.207	33	TIS330F40-*
SMP339	1.335	33.9	0.541	●		0.210	33	TIS330F40-*
SMP340	1.339	34	0.539	●	●	0.210	34	TIS340F40-*
SMP341	1.343	34.1	0.537		●	0.211	34	TIS340F40-*
SMP343	1.350	34.3	0.534	●		0.213	34	TIS340F40-*
SMP345	1.358	34.5	0.531		●	0.214	34	TIS340F40-*
SMP349	1.374	34.9	0.524		●	0.217	34	TIS340F40-*
SMP350	1.378	35	0.652	●	●	0.214	35	TIS350F40-*
SMP351	1.382	35.1	0.650		●	0.215	35	TIS350F40-*
SMP352	1.386	35.2	0.649	●		0.216	35	TIS350F40-*
SMP355	1.398	35.5	0.644		●	0.218	35	TIS350F40-*
SMP357	1.406	35.7	0.641	●		0.219	35	TIS350F40-*
SMP360	1.417	36	0.635		●	0.221	36	TIS360F40-*
SMP361	1.421	36.1	0.634		●	0.222	36	TIS360F40-*
SMP362	1.425	36.2	0.632	●		0.223	36	TIS360F40-*
SMP365	1.437	36.5	0.627		●	0.225	36	TIS360F40-*
SMP366	1.441	36.6	0.626		●	0.226	36	TIS360F40-*
SMP370	1.457	37	0.619		●	0.228	37	TIS370F40-*
SMP371	1.461	37.1	0.617		●	0.229	37	TIS370F40-*
SMP373	1.469	37.3	0.614	●		0.231	37	TIS370F40-*
SMP374	1.472	37.4	0.612	●		0.231	37	TIS370F40-*
SMP375	1.476	37.5	0.611	●	●	0.232	37	TIS370F40-*
SMP380	1.496	38	0.669	●	●	0.233	38	TIS380F40-*
SMP381	1.500	38.1	0.668		●	0.233	38	TIS380F40-*
SMP383	1.508	38.3	0.664	●		0.235	38	TIS380F40-*
SMP385	1.516	38.5	0.661		●	0.236	38	TIS380F40-*
SMP388	1.528	38.8	0.656		●	0.239	38	TIS380F40-*
SMP390	1.535	39	0.653		●	0.240	39	TIS390F40-*
SMP391	1.539	39.1	0.651	●	●	0.241	39	TIS390F40-*
SMP395	1.555	39.5	0.644		●	0.243	39	TIS390F40-*
SMP397	1.563	39.7	0.641		●	0.245	39	TIS390F40-*
SMP398	1.567	39.8	0.639		●	0.246	39	TIS390F40-*
SMP400	1.575	40	0.636		●	0.247	40	TIS400F40-*
SMP401	1.579	40.1	0.635		●	0.248	40	TIS400F40-*
SMP402	1.583	40.2	0.633	●		0.248	40	TIS400F40-*
SMP403	1.587	40.3	0.631	●		0.249	40	TIS400F40-*
SMP405	1.594	40.5	0.628		●	0.251	40	TIS400F40-*
SMP408	1.606	40.8	0.623	●		0.253	40	TIS400F40-*
SMP410	1.614	41	0.620		●	0.254	40	TIS400F40-*

● : Line up
Package quantity = 1 pc

SMF (Flat geometry head)





Detail in A

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	★		

★ : First choice
☆ : Second choice

Tool diameter (in)	Head diameter tolerance (in)
ø0.787"- ø1.177"	+0.0006" / -0.0006"
ø1.181" - ø1.614"	+0.0006" / -0.0008"

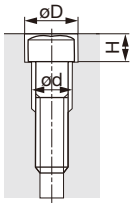
Tool diameter (mm)	Head diameter tolerance (mm)
ø20 - ø29.9	+0.014 / -0.015
ø30 - ø41	+0.014 / -0.02

Designation	DC (in)	DC (mm)	LPR (in)	Coated AH9130	SDL (in)	PL (in)	PDD (in)	Pocket size	Body
SMF200	0.787	20	0.387	●	0.028	0.086	0.327	20	TIS200F25-*
SMF205	0.807	20.5	0.378	●	0.028	0.086	0.327	20	TIS200F25-*
SMF210	0.827	21	0.370	●	0.028	0.086	0.327	21	TIS210F25-*
SMF215	0.846	21.5	0.362	●	0.028	0.086	0.327	21	TIS210F25-*
SMF220	0.866	22	0.416	●	0.028	0.094	0.354	22	TIS220F25-*
SMF225	0.886	22.5	0.407	●	0.028	0.094	0.354	22	TIS220F25-*
SMF227	0.894	22.7	0.404	●	0.028	0.094	0.354	22	TIS220F25-*
SMF230	0.906	23	0.399	●	0.028	0.094	0.354	23	TIS230F25-*
SMF235	0.925	23.5	0.391	●	0.028	0.094	0.354	23	TIS230F25-*
SMF238	0.937	23.8	0.386	●	0.028	0.094	0.354	23	TIS230F25-*
SMF240	0.945	24	0.419	●	0.028	0.099	0.394	24	TIS240F32-*
SMF242	0.953	24.2	0.415	●	0.028	0.099	0.394	24	TIS240F32-*
SMF245	0.965	24.5	0.410	●	0.028	0.099	0.394	24	TIS240F32-*
SMF250	0.984	25	0.402	●	0.028	0.099	0.394	25	TIS250F32-*
SMF255	1.004	25.5	0.394	●	0.028	0.099	0.394	25	TIS250F32-*
SMF260	1.024	26	0.485	●	0.028	0.098	0.413	26	TIS260F32-*
SMF265	1.043	26.5	0.477	●	0.028	0.098	0.413	26	TIS260F32-*
SMF270	1.063	27	0.469	●	0.028	0.098	0.413	27	TIS270F32-*
SMF275	1.083	27.5	0.460	●	0.028	0.098	0.413	27	TIS270F32-*
SMF280	1.102	28	0.483	●	0.028	0.107	0.457	28	TIS280F32-*
SMF290	1.142	29	0.467	●	0.028	0.107	0.457	29	TIS290F32-*
SMF295	1.161	29.5	0.459	●	0.028	0.107	0.457	29	TIS290F32-*
SMF296	1.165	29.6	0.457	●	0.028	0.107	0.457	29	TIS290F32-*
SMF300	1.181	30	0.569	●	0.028	0.110	0.488	30	TIS300F32-*
SMF310	1.220	31	0.553	●	0.028	0.110	0.488	31	TIS310F32-*
SMF315	1.240	31.5	0.544	●	0.028	0.110	0.488	31	TIS310F32-*
SMF320	1.260	32	0.581	●	0.028	0.123	0.535	32	TIS320F40-*
SMF325	1.280	32.5	0.573	●	0.028	0.123	0.535	32	TIS320F40-*
SMF330	1.299	33	0.565	●	0.028	0.123	0.535	33	TIS330F40-*
SMF340	1.339	34	0.548	●	0.028	0.123	0.535	34	TIS340F40-*
SMF345	1.358	34.5	0.540	●	0.028	0.123	0.535	34	TIS340F40-*
SMF350	1.378	35	0.651	●	0.028	0.130	0.575	35	TIS350F40-*
SMF355	1.398	35.5	0.643	●	0.028	0.130	0.575	35	TIS350F40-*
SMF360	1.417	36	0.635	●	0.028	0.130	0.575	36	TIS360F40-*
SMF365	1.437	36.5	0.626	●	0.028	0.130	0.575	36	TIS360F40-*
SMF370	1.457	37	0.618	●	0.028	0.130	0.575	37	TIS370F40-*
SMF380	1.496	38	0.663	●	0.028	0.137	0.626	38	TIS380F40-*
SMF390	1.535	39	0.647	●	0.028	0.137	0.626	39	TIS390F40-*
SMF400	1.575	40	0.630	●	0.028	0.137	0.626	40	TIS400F40-*
SMF402	1.583	40.2	0.627	●	0.028	0.137	0.626	40	TIS400F40-*
SMF410	1.614	41	0.614	●	0.028	0.137	0.626	40	TIS400F40-*

No drill body modification is needed when mounting SMF drill head.
Do not regrind. SMF drill heads are not designed to be reground.

●: Line up
Package quantity = 1 pc

● Counterbore dimensions for bolt holes



Thread size	M16	M20	M22	M24
øD (mm)	26	32	35	39
H (mm)	17.5	21.5	23.5	25.5
ød (mm)	18	22	24	26
Applicable tool	SMF260	SMF320	SMF350	SMF390

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) ø0.787" - ø1.177"	ø1.181" - ø1.413"	ø1.417"- ø1.614"
P	Low carbon steels 1015, etc.	- 200 HB	262 - 459	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
P	Carbon steels, Alloy steels 1055, 4140, etc.	- 300 HB	262 - 427	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
P	Prehardened steels NAK80, PX5, etc.	30 - 40 HRC	164 - 328	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
M	Stainless steels S30400, etc.	-	131 - 262	0.006 - 0.012	0.006 - 0.012	0.008 - 0.014
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	262 - 591	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
K	Ductile cast irons 60-40-15, 80-55-06, etc.	150 - 250 HB	262 - 459	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
N	Non ferrous materials	-	328 - 656	0.016 - 0.024	0.016 - 0.024	0.020 - 0.028
S	Heat-resistant alloy Inconel718, etc.	- 40 HRC	66 - 164	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	98 - 197	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
H	Hardened materials	- 50 HRC	66 - 197	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010

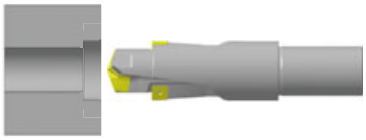
TAILOR MADE DRILL BODY

Special drill bodies featuring chamfering or counter boring capabilities with indexable insert and head.
Reduce down time and tool management compared to solid drill.

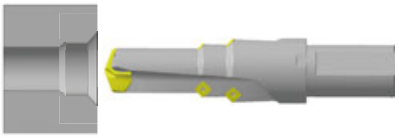
Drilling + Chamfering



Drilling + Boring



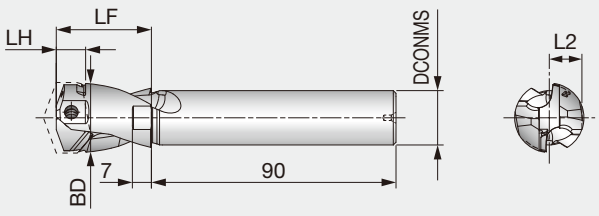
Drilling + Double chamfering



REGRINDING HOLDER

SMP-GH

Regrinding holder for SMP drill heads



Inch	DCONMS	BD	LF	LH	L2	Pocket size	Head
SMP260-279-GH	0.787	1.004	1.378	0.425	0.472	26, 27	SMP260-SMP279
SMP280-299-GH	0.787	1.083	1.378	0.425	0.512	28, 29	SMP280-SMP299
SMP300-319-GH	0.787	1.161	1.378	0.512	0.551	30, 31	SMP300-SMP319
SMP320-349-GH	0.787	1.240	1.378	0.512	0.591	32, 33, 34	SMP320-SMP349
SMP350-379-GH	0.787	1.358	1.575	0.579	0.650	35, 36, 37	SMP350-SMP379
SMP380-410-GH	0.787	1.476	1.575	0.594	0.709	38, 39, 40	SMP380-SMP410

The exclusive holders with short length for regrinding of SMP heads .

● Cautions when regrinding SMP drill heads

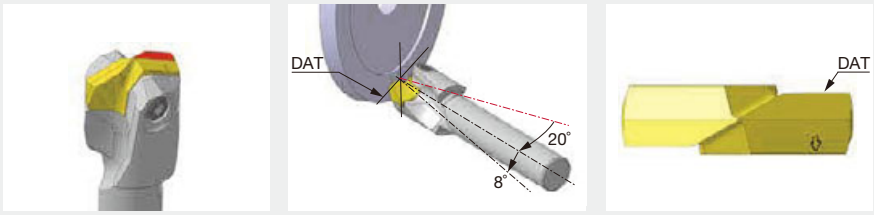
Note: SMF drill heads are not recommended to be reground due to little regrinding allowance.

① Clamping

- Assemble the drill head on the regrinding holder or shortest standard holder (3xD)
- Set-up the drill head in the machine : Total run-out must be less than 0.0008"

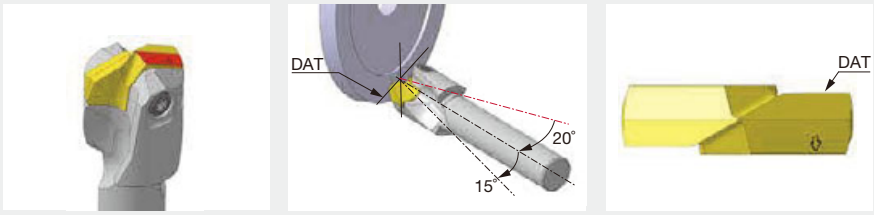
② Grinding the 1st clearance angle

- Set the drill for point angle (140°) and 1st clearance angle (8°)
- Keep the cutting edge in the horizontal plane



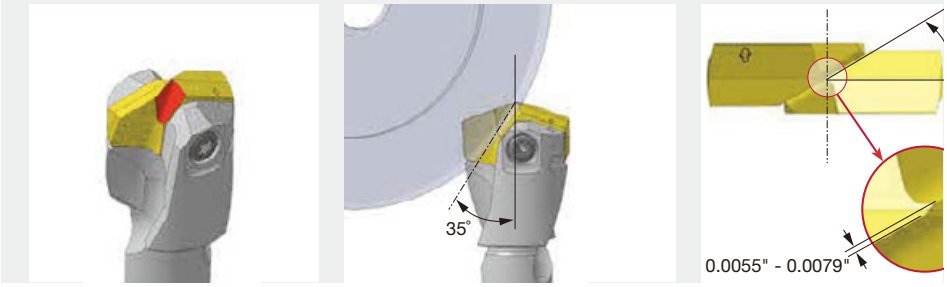
③ Grinding the 2nd clearance angle

- Set the drill for 2nd clearance angle (15°)



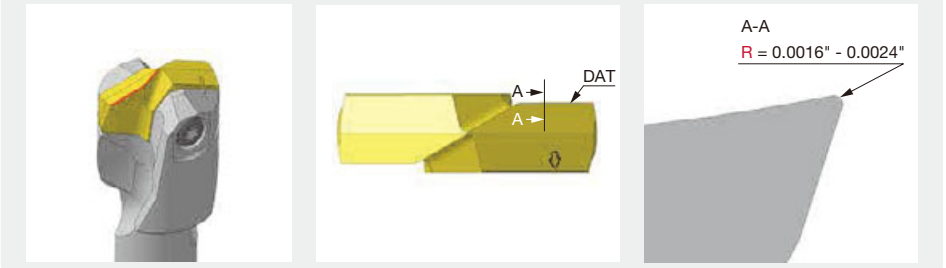
④ Grinding the chisel (Thinning)

- Set the drill for thinning angle (35°) with reference to drill axis and angle (30°) with reference to radial axis
- Keep the chisel thickness (0.006" - 0.008") and the thinning point must be over the center line



⑤ Edge preparation (Honing)

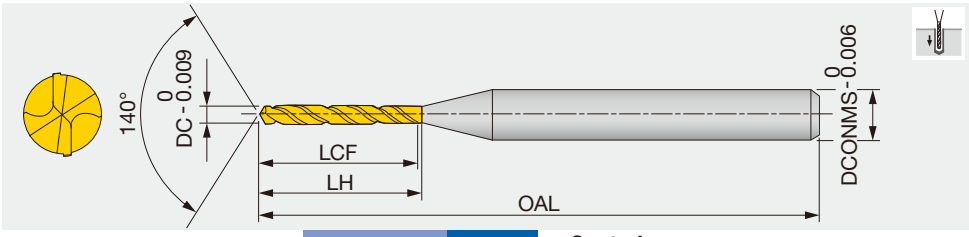
- Cutting edges should be honed by sand or brush (0.0016" - 0.0024")
- Nega-land by diamond hand lapper is also available
- The width of honing must be uniform with good surface finish



DSM

Micro solid drill, L/D = 5 - 15, without coolant hole





Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0010G10	0.1	●		3	1.15	1.4	38
DSM0011G10	0.11	●		3	1.25	1.5	38
DSM0012G10	0.12	●		3	1.35	1.6	38
DSM0013G10	0.13	●		3	1.55	1.8	38
DSM0014G10	0.14	●		3	1.65	1.9	38
DSM0015G10	0.15	●		3	1.75	2	38
DSM0016G10	0.16	●		3	1.85	2.1	38
DSM0017G10	0.17	●		3	1.95	2.2	38
DSM0018G10	0.18	●		3	2.15	2.4	38
DSM0019G10	0.19	●		3	2.25	2.5	38
DSM0020G10	0.2	●		3	2.35	2.6	38
DSM0021G10	0.21	●		3	2.45	2.7	38
DSM0022G10	0.22	●		3	2.55	2.8	38
DSM0023G10	0.23	●		3	2.75	3	38
DSM0024G10	0.24	●		3	2.85	3.1	38
DSM0025G10	0.25	●		3	3	3.3	38
DSM0026G10	0.26	●		3	3.1	3.4	38
DSM0027G10	0.27	●		3	3.2	3.5	38
DSM0028G10	0.28	●		3	3.4	3.7	38
DSM0029G10	0.29	●		3	3.5	3.8	38
DSM0030G10	0.3	●		3	3.9	4.2	38
DSM0031G15	0.31	●		3	5.6	5.9	38
DSM0032G15	0.32	●		3	5.6	5.9	38
DSM0033G15	0.33	●		3	5.6	5.9	38
DSM0034G15	0.34	●		3	5.6	5.9	38
DSM0035G15	0.35	●		3	5.6	5.9	38
DSM0036G15	0.36	●		3	6.5	6.8	38
DSM0037G15	0.37	●		3	6.5	6.8	38
DSM0038G15	0.38	●		3	6.5	6.8	38
DSM0039G15	0.39	●		3	6.5	6.8	38
DSM0040G15	0.4	●		3	6.5	6.8	38
DSM0041G15	0.41	●		3	7.4	7.7	38
DSM0042G15	0.42	●		3	7.4	7.7	38
DSM0043G15	0.43	●		3	7.4	7.7	38
DSM0044G15	0.44	●		3	7.4	7.7	38
DSM0045G15	0.45	●		3	7.4	7.7	38
DSM0046G15	0.46	●		3	8.1	8.7	38
DSM0047G15	0.47	●		3	8.1	8.7	38
DSM0048G15	0.48	●		3	8.1	8.7	38
DSM0049G15	0.49	●		3	8.1	8.7	38
DSM0050G15	0.5	●		3	8.1	8.7	38
DSM0053G10	0.53	●		3	6.6	7.2	38
DSM0055G10	0.55	●		3	6.6	7.2	38
DSM0060G10	0.6	●		3	7.3	7.9	38
DSM0061G10	0.61	●		3	7.9	8.5	38
DSM0065G10	0.65	●		3	7.9	8.5	38
DSM0070G10	0.7	●		3	8.6	9.2	38
DSM0075G10	0.75	●		3	9.2	9.8	38
DSM0080G10	0.8	●		3	9.9	10.5	38
DSM0088G10	0.88	●		3	9.9	10.5	38
DSM0090G10	0.9	●		3	9.9	10.5	38
DSM0097G10	0.97	●		3	11	11.6	38

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0100G10	1	●		3	11.5	12.1	38
DSM0108G05	1.08	●		3	8	8.6	38
DSM0110G05	1.1	●		3	8	8.6	38
DSM0120G05	1.2	●		3	8.9	9.5	38
DSM0130G05	1.3	●		3	9.7	10.3	38
DSM0140G05	1.4	●		3	10.5	11.1	38
DSM0145G05	1.45	●		3	11.3	11.9	38
DSM0149G05	1.49	●		3	11.3	11.9	38
DSM0150G05	1.5	●		3	11.3	11.9	38
DSM0153G05	1.53	●		3	12.1	12.7	45
DSM0155G05	1.55	●		3	12.1	12.7	45
DSM0160G05	1.6	●		3	12.1	12.7	45
DSM0165G05	1.65	●		3	12.9	13.6	45
DSM0170G05	1.7	●		3	12.9	13.6	45
DSM0180G05	1.8	●		3	13.7	14.3	45
DSM0182G05	1.82	●		3	14.5	15.1	45
DSM0185G05	1.85	●		3	14.5	15.1	45
DSM0190G05	1.9	●		3	14.5	15.1	45
DSM0195G05	1.95	●		3	15.3	15.9	45
DSM0200G05	2		●	3	15.3	15.9	45
DSM0203G05	2.03		●	3	16.1	16.7	45
DSM0205G05	2.05		●	3	16.1	16.7	45
DSM0210G05	2.1		●	3	16.1	16.7	45
DSM0220G05	2.2		●	3	16.9	17.5	45
DSM0230G05	2.3		●	3	17.7	18.3	45
DSM0240G05	2.4		●	3	18.5	19.1	55
DSM0250G05	2.5		●	3	19.3	19.9	55
DSM0254G05	2.54		●	3	20.1	20.7	55
DSM0255G05	2.55		●	3	20.1	20.7	55
DSM0256G05	2.56		●	3	20.1	20.7	55
DSM0257G05	2.57		●	3	20.1	20.7	55
DSM0260G05	2.6		●	3	20.1	20.7	55
DSM0265G05	2.65		●	3	20.9	21.5	55
DSM0270G05	2.7		●	3	20.9	21.5	55
DSM0280G05	2.8		●	3	21.7	22.3	55
DSM0290G05	2.9		●	3	22.5	23.1	55
DSM0295G05	2.95		●	3	23.3	23.9	55
DSM0296G05	2.96		●	3	23.3	23.9	55
DSM0300G05	3		●	3	23.3	23.9	55

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm) ø0.004" ~ ø0.012"	ø0.012" ~ ø0.020"	ø0.020" ~ ø0.118"	Feed: *f* (ipr) ø0.004" ~ ø0.012"	ø0.012" ~ ø0.020"	ø0.020" ~ ø0.039"	ø0.039" ~ ø0.079"	ø0.079" ~ ø0.118"
P	Carbon steels, Alloy steels	- 300 HB	16 - 66	49 - 98	82 - 197	0.00004 - 0.00016	0.00008 - 0.0004	0.00020 - 0.0020	0.0012 - 0.0035	0.0020 - 0.004
M	Stainless steels	- 200 HB	7 - 39	20 - 59	33 - 66	0.00002 - 0.00016	0.00008 - 0.00031	0.00020 - 0.0012	0.0004 - 0.0016	0.0008 - 0.0020
K	Gray cast irons	150 - 250 HB	16 - 49	33 - 82	66 - 164	0.00002 - 0.00016	0.00008- 0.0005	0.00020 - 0.0012	0.0004 - 0.0024	0.0012 - 0.005
	Ductile cast irons	150 - 250 HB	16 - 49	33 - 82	66 - 164	0.00004 - 0.00012	0.00008 - 0.0004	0.00020 - 0.0008	0.0004 - 0.0020	0.0012 - 0.004
N	Aluminum alloys	-	33 - 66	33 - 98	66 - 164	0.00004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
	Copper / Brass	-	33 - 66	33 - 98	66 - 164	0.00004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
S	Heat-resistant alloys	- 40 HRC	7 - 20	16 - 33	26 - 66	0.00002 - 0.00012	0.00008 - 0.00016	0.00008 - 0.00016	0.00008 - 0.00016	※
H	High hardened steels	- 50 HRC	13 - 26	20 - 33	20 - 52	0.00002 - 0.00008	0.00004 - 0.00020	0.00020 - 0.0008	0.0004 - 0.0012	0.0008 - 0.0024

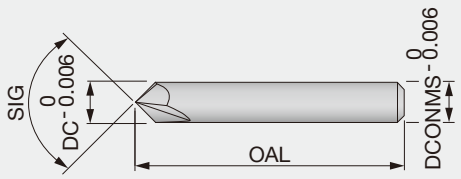
※ Not recommended

Notes: • When the drilling depth is deeper than L/D = 5, use drill pecking every 10 to 50% of the drill diameter.
• The above cutting conditions are applied to when a water soluble cutting fluid is used. For drilling a hole smaller than ø0.3 mm, use of a starting drill is recommended.
• When setting the drill, the drill run out should be within 0.002 mm on the taper. (Especially for the drill diameter smaller than ø0.5 mm)

SOLIDDRILL

DSM-CP

Centering drill for DSM drill



DC = DCONMS

Metric	DC	YH170	DCONMS	OAL	SIG
DSM-CP90	3	●	3	38.1	90°
DSM-CP140	3	●	3	38.1	140°

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm)	Feed: *f* (ipr) DSM-CP90	DSM-CP140
P	Carbon, Mild and Alloy steels	- 300 HB	98 - 262	0.0004 - 0.0024	0.0012 - 0.0031
M	Stainless steels	- 200 HB	49 - 131	0.0004 - 0.0012	0.0008 - 0.0024
K	Gray and ductile cast irons	150 - 250 HB	98 - 262	0.0008 - 0.0024	0.0020 - 0.0039
N	Aluminum alloys	-	197 - 394	0.0008 - 0.0039	0.0020 - 0.0059
H	High hardened steels	- 45 HRC	33 - 131	※	0.0004 - 0.002

※ Not recommended

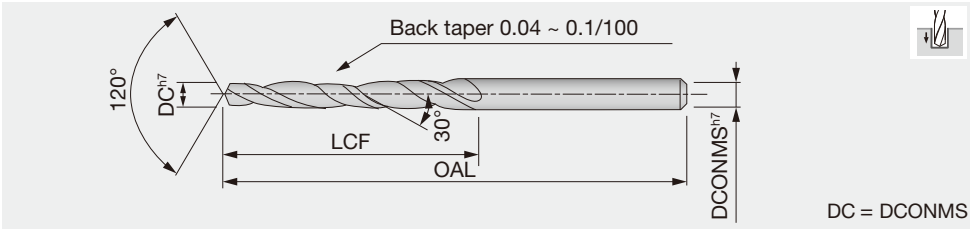
Notes: • For hard materials and stainless steels which have work-hardening nature, DSM-CP140 is recommended.
• Above cutting conditions are of using a water-soluble cutting fluid. When using a water-insoluble type, set the lower side of cutting conditions.

SOLIDDRILL

CDS

Solid drill, L/D = 3 - 8, without coolant hole





Metric	DC	UM	LCF	OAL
CDS-010	1	●	10	38
CDS-015	1.5	●	10	38
CDS-016	1.6	●	22	45
CDS-019	1.9	●	22	45
CDS-020	2	●	22	45
CDS-021	2.1	●	22	45
CDS-022	2.2	●	22	45
CDS-023	2.3	●	22	45
CDS-025	2.5	●	22	45
CDS-029	2.9	●	25	45
CDS-030	3	●	25	45

Metric	DC	UM	LCF	OAL
CDS-033	3.3	●	27	50
CDS-040	4	●	30	55
CDS-042	4.2	●	34	60
CDS-045	4.5	●	34	60
CDS-050	5	●	34	60
CDS-060	6	●	40	70
CDS-070	7	●	46	80
CDS-080	8	●	50	85
CDS-085	8.5	●	53	85
CDS-090	9	●	53	85

● : Line up

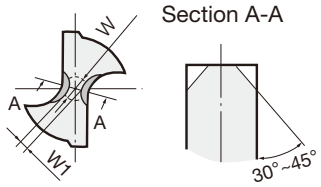
DC	Tolerance h7 (mm)
1 < DC ≤ 3	0 ~ -0.010
3 < DC ≤ 6	0 ~ -0.012
6 < DC ≤ 9	0 ~ -0.015

CAUTIONARY NOTES

- To prevent edge chipping, hone cutting edges as follows:
  Honing width: 0.02 ~ 0.05 mm
  Honing angle: -20˚ to -30˚.
  Chipping is likely to occur on edges when drilling hard materials, a larger honing width is recommended.
- When drilling into an inclined surface, special care should be taken to prevent drill breakage.
  Use of drill bushing is recommended for such cases.

REGRINDING

- Carry out regrinding when corner wear reaches the margin width.
- Avoid using silicon carbide grinding wheels or hand grinding whenever possible.
  Replace mesh with grit wheel of 200 to 400 mesh.
- Apply web thinning for the drill above ø6 mm. S-type thinning shown in figure at right is recommended.
  Preferable thinning width (W1) is about 1/2 to 1/3 of web thickness (W).



S-type thinning

STANDARD CUTTING CONDITIONS

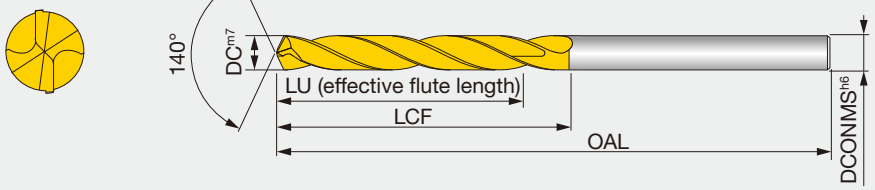
See more information

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SOLIDDRILL

DSW-DE3

Solid drillL/D = 3, DIN shank, without coolant hole



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-014-06DE3	3	●	6	14	20	62
DSW031-014-06DE3	3.1	●	6	14	20	62
DSW032-014-06DE3	3.2	●	6	14	20	62
DSW033-014-06DE3	3.3	●	6	14	20	62
DSW034-014-06DE3	3.4	●	6	14	20	62
DSW035-014-06DE3	3.5	●	6	14	20	62
DSW036-014-06DE3	3.6	●	6	14	20	62
DSW037-014-06DE3	3.7	●	6	14	20	62
DSW038-017-06DE3	3.8	●	6	17	24	66
DSW039-017-06DE3	3.9	●	6	17	24	66
DSW040-017-06DE3	4	●	6	17	24	66
DSW041-017-06DE3	4.1	●	6	17	24	66
DSW042-017-06DE3	4.2	●	6	17	24	66
DSW043-017-06DE3	4.3	●	6	17	24	66
DSW044-017-06DE3	4.4	●	6	17	24	66
DSW045-017-06DE3	4.5	●	6	17	24	66
DSW046-017-06DE3	4.6	●	6	17	24	66
DSW047-017-06DE3	4.7	●	6	17	24	66
DSW048-020-06DE3	4.8	●	6	20	28	66
DSW049-020-06DE3	4.9	●	6	20	28	66
DSW050-020-06DE3	5	●	6	20	28	66
DSW051-020-06DE3	5.1	●	6	20	28	66
DSW052-020-06DE3	5.2	●	6	20	28	66
DSW053-020-06DE3	5.3	●	6	20	28	66
DSW054-020-06DE3	5.4	●	6	20	28	66
DSW055-020-06DE3	5.5	●	6	20	28	66
DSW056-020-06DE3	5.6	●	6	20	28	66
DSW057-020-06DE3	5.7	●	6	20	28	66
DSW058-020-06DE3	5.8	●	6	20	28	66
DSW059-020-06DE3	5.9	●	6	20	28	66
DSW060-020-06DE3	6	●	6	20	28	66
DSW061-024-08DE3	6.1	●	8	24	34	79
DSW062-024-08DE3	6.2	●	8	24	34	79
DSW063-024-08DE3	6.3	●	8	24	34	79
DSW064-024-08DE3	6.4	●	8	24	34	79
DSW065-024-08DE3	6.5	●	8	24	34	79
DSW066-024-08DE3	6.6	●	8	24	34	79
DSW067-024-08DE3	6.7	●	8	24	34	79
DSW068-024-08DE3	6.8	●	8	24	34	79
DSW069-024-08DE3	6.9	●	8	24	34	79
DSW070-024-08DE3	7	●	8	24	34	79
DSW071-029-08DE3	7.1	●	8	29	41	79
DSW072-029-08DE3	7.2	●	8	29	41	79
DSW073-029-08DE3	7.3	●	8	29	41	79
DSW074-029-08DE3	7.4	●	8	29	41	79
DSW075-029-08DE3	7.5	●	8	29	41	79
DSW076-029-08DE3	7.6	●	8	29	41	79
DSW077-029-08DE3	7.7	●	8	29	41	79
DSW078-029-08DE3	7.8	●	8	29	41	79
DSW079-029-08DE3	7.9	●	8	29	41	79
DSW080-029-08DE3	8	●	8	29	41	79
DSW081-035-10DE3	8.1	●	10	35	47	89
DSW082-035-10DE3	8.2	●	10	35	47	89
DSW083-035-10DE3	8.3	●	10	35	47	89
DSW084-035-10DE3	8.4	●	10	35	47	89
DSW085-035-10DE3	8.5	●	10	35	47	89
DSW086-035-10DE3	8.6	●	10	35	47	89
DSW087-035-10DE3	8.7	●	10	35	47	89
DSW088-035-10DE3	8.8	●	10	35	47	89
DSW089-035-10DE3	8.9	●	10	35	47	89
DSW090-035-10DE3	9	●	10	35	47	89
DSW091-035-10DE3	9.1	●	10	35	47	89
DSW092-035-10DE3	9.2	●	10	35	47	89
DSW093-035-10DE3	9.3	●	10	35	47	89
DSW094-035-10DE3	9.4	●	10	35	47	89
DSW095-035-10DE3	9.5	●	10	35	47	89
DSW096-035-10DE3	9.6	●	10	35	47	89
DSW097-035-10DE3	9.7	●	10	35	47	89
DSW098-035-10DE3	9.8	●	10	35	47	89
DSW099-035-10DE3	9.9	●	10	35	47	89
DSW100-035-10DE3	10	●	10	35	47	89
DSW101-040-12DE3	10.1	●	12	40	55	102
DSW102-040-12DE3	10.2	●	12	40	55	102
DSW103-040-12DE3	10.3	●	12	40	55	102
DSW104-040-12DE3	10.4	●	12	40	55	102
DSW105-040-12DE3	10.5	●	12	40	55	102
DSW106-040-12DE3	10.6	●	12	40	55	102
DSW107-040-12DE3	10.7	●	12	40	55	102
DSW108-040-12DE3	10.8	●	12	40	55	102
DSW109-040-12DE3	10.9	●	12	40	55	102
DSW110-040-12DE3	11	●	12	40	55	102
DSW111-040-12DE3	11.1	●	12	40	55	102
DSW112-040-12DE3	11.2	●	12	40	55	102
DSW113-040-12DE3	11.3	●	12	40	55	102
DSW114-040-12DE3	11.4	●	12	40	55	102
DSW115-040-12DE3	11.5	●	12	40	55	102
DSW116-040-12DE3	11.6	●	12	40	55	102
DSW117-040-12DE3	11.7	●	12	40	55	102
DSW118-040-12DE3	11.8	●	12	40	55	102
DSW119-040-12DE3	11.9	●	12	40	55	102
DSW120-040-12DE3	12	●	12	40	55	102

● : Line up

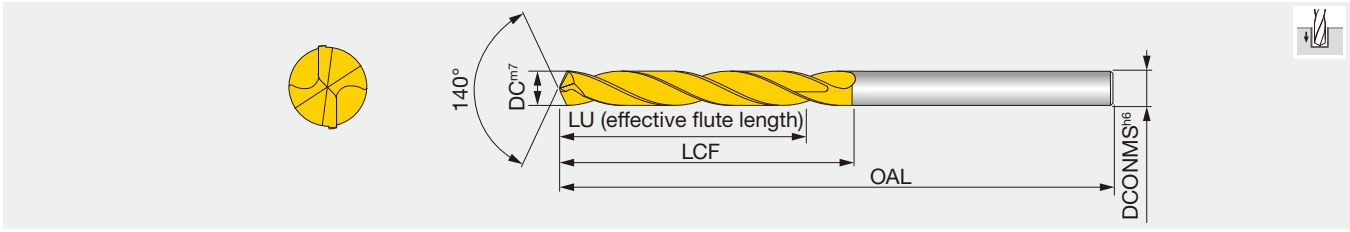
STANDARD CUTTING CONDITIONS

See more information

e-catalog

DSW-DE5

Solid drill, L/D = 5, DIN shank, without coolant hole



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DE5	3	●	6	23	28	66
DSW031-023-06DE5	3.1	●	6	23	28	66
DSW032-023-06DE5	3.2	●	6	23	28	66
DSW033-023-06DE5	3.3	●	6	23	28	66
DSW034-023-06DE5	3.4	●	6	23	28	66
DSW035-023-06DE5	3.5	●	6	23	28	66
DSW036-023-06DE5	3.6	●	6	23	28	66
DSW037-023-06DE5	3.7	●	6	23	28	66
DSW038-029-06DE5	3.8	●	6	29	36	74
DSW039-029-06DE5	3.9	●	6	29	36	74
DSW040-029-06DE5	4	●	6	29	36	74
DSW041-029-06DE5	4.1	●	6	29	36	74
DSW042-029-06DE5	4.2	●	6	29	36	74
DSW043-029-06DE5	4.3	●	6	29	36	74
DSW044-029-06DE5	4.4	●	6	29	36	74
DSW045-029-06DE5	4.5	●	6	29	36	74
DSW046-029-06DE5	4.6	●	6	29	36	74
DSW047-029-06DE5	4.7	●	6	29	36	74
DSW048-035-06DE5	4.8	●	6	35	44	82
DSW049-035-06DE5	4.9	●	6	35	44	82
DSW050-035-06DE5	5	●	6	35	44	82
DSW051-035-06DE5	5.1	●	6	35	44	82
DSW052-035-06DE5	5.2	●	6	35	44	82
DSW053-035-06DE5	5.3	●	6	35	44	82
DSW054-035-06DE5	5.4	●	6	35	44	82
DSW055-035-06DE5	5.5	●	6	35	44	82
DSW056-035-06DE5	5.6	●	6	35	44	82
DSW057-035-06DE5	5.7	●	6	35	44	82
DSW058-035-06DE5	5.8	●	6	35	44	82
DSW059-035-06DE5	5.9	●	6	35	44	82
DSW060-035-06DE5	6	●	6	35	44	82
DSW061-043-08DE5	6.1	●	8	43	53	91
DSW062-043-08DE5	6.2	●	8	43	53	91
DSW063-043-08DE5	6.3	●	8	43	53	91
DSW064-043-08DE5	6.4	●	8	43	53	91
DSW065-043-08DE5	6.5	●	8	43	53	91
DSW066-043-08DE5	6.6	●	8	43	53	91
DSW067-043-08DE5	6.7	●	8	43	53	91
DSW068-043-08DE5	6.8	●	8	43	53	91
DSW069-043-08DE5	6.9	●	8	43	53	91
DSW070-043-08DE5	7	●	8	43	53	91
DSW071-043-08DE5	7.1	●	8	43	53	91
DSW072-043-08DE5	7.2	●	8	43	53	91
DSW073-043-08DE5	7.3	●	8	43	53	91
DSW074-043-08DE5	7.4	●	8	43	53	91
DSW075-043-08DE5	7.5	●	8	43	53	91

Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW076-043-08DE5	7.6	●	8	43	53	91
DSW077-043-08DE5	7.7	●	8	43	53	91
DSW078-043-08DE5	7.8	●	8	43	53	91
DSW079-043-08DE5	7.9	●	8	43	53	91
DSW080-043-08DE5	8	●	8	43	53	91
DSW081-049-10DE5	8.1	●	10	49	61	103
DSW082-049-10DE5	8.2	●	10	49	61	103
DSW083-049-10DE5	8.3	●	10	49	61	103
DSW084-049-10DE5	8.4	●	10	49	61	103
DSW085-049-10DE5	8.5	●	10	49	61	103
DSW086-049-10DE5	8.6	●	10	49	61	103
DSW087-049-10DE5	8.7	●	10	49	61	103
DSW088-049-10DE5	8.8	●	10	49	61	103
DSW089-049-10DE5	8.9	●	10	49	61	103
DSW090-049-10DE5	9	●	10	49	61	103
DSW091-049-10DE5	9.1	●	10	49	61	103
DSW092-049-10DE5	9.2	●	10	49	61	103
DSW093-049-10DE5	9.3	●	10	49	61	103
DSW094-049-10DE5	9.4	●	10	49	61	103
DSW095-049-10DE5	9.5	●	10	49	61	103
DSW096-049-10DE5	9.6	●	10	49	61	103
DSW097-049-10DE5	9.7	●	10	49	61	103
DSW098-049-10DE5	9.8	●	10	49	61	103
DSW099-049-10DE5	9.9	●	10	49	61	103
DSW100-049-10DE5	10	●	10	49	61	103
DSW101-056-12DE5	10.1	●	12	56	71	118
DSW102-056-12DE5	10.2	●	12	56	71	118
DSW103-056-12DE5	10.3	●	12	56	71	118
DSW104-056-12DE5	10.4	●	12	56	71	118
DSW105-056-12DE5	10.5	●	12	56	71	118
DSW106-056-12DE5	10.6	●	12	56	71	118
DSW107-056-12DE5	10.7	●	12	56	71	118
DSW108-056-12DE5	10.8	●	12	56	71	118
DSW109-056-12DE5	10.9	●	12	56	71	118
DSW110-056-12DE5	11	●	12	56	71	118
DSW111-056-12DE5	11.1	●	12	56	71	118
DSW112-056-12DE5	11.2	●	12	56	71	118
DSW113-056-12DE5	11.3	●	12	56	71	118
DSW114-056-12DE5	11.4	●	12	56	71	118
DSW115-056-12DE5	11.5	●	12	56	71	118
DSW116-056-12DE5	11.6	●	12	56	71	118
DSW117-056-12DE5	11.7	●	12	56	71	118
DSW118-056-12DE5	11.8	●	12	56	71	118
DSW119-056-12DE5	11.9	●	12	56	71	118
DSW120-056-12DE5	12	●	12	56	71	118

● : Line up

STANDARD CUTTING CONDITIONS

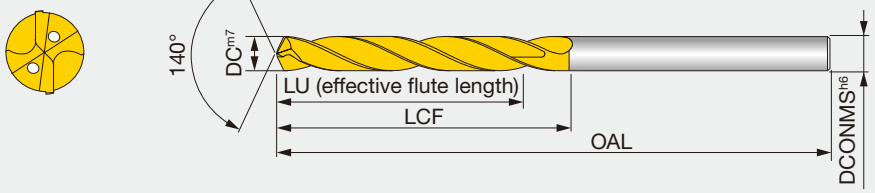
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SOLIDDRILL

DSW-DI5

Solid drill, L/D = 5, DIN shank, with coolant hole



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DI5	3	●	6	23	28	66
DSW031-023-06DI5	3.1	●	6	23	28	66
DSW032-023-06DI5	3.2	●	6	23	28	66
DSW033-023-06DI5	3.3	●	6	23	28	66
DSW034-023-06DI5	3.4	●	6	23	28	66
DSW035-023-06DI5	3.5	●	6	23	28	66
DSW036-023-06DI5	3.6	●	6	23	28	66
DSW037-023-06DI5	3.7	●	6	23	28	66
DSW038-029-06DI5	3.8	●	6	29	36	74
DSW039-029-06DI5	3.9	●	6	29	36	74
DSW040-029-06DI5	4	●	6	29	36	74
DSW041-029-06DI5	4.1	●	6	29	36	74
DSW042-029-06DI5	4.2	●	6	29	36	74
DSW043-029-06DI5	4.3	●	6	29	36	74
DSW044-029-06DI5	4.4	●	6	29	36	74
DSW045-029-06DI5	4.5	●	6	29	36	74
DSW046-029-06DI5	4.6	●	6	29	36	74
DSW047-029-06DI5	4.7	●	6	29	36	74
DSW048-035-06DI5	4.8	●	6	35	44	82
DSW049-035-06DI5	4.9	●	6	35	44	82
DSW050-035-06DI5	5	●	6	35	44	82
DSW051-035-06DI5	5.1	●	6	35	44	82
DSW052-035-06DI5	5.2	●	6	35	44	82
DSW053-035-06DI5	5.3	●	6	35	44	82
DSW054-035-06DI5	5.4	●	6	35	44	82
DSW055-035-06DI5	5.5	●	6	35	44	82
DSW056-035-06DI5	5.6	●	6	35	44	82
DSW057-035-06DI5	5.7	●	6	35	44	82
DSW058-035-06DI5	5.8	●	6	35	44	82
DSW059-035-06DI5	5.9	●	6	35	44	82
DSW060-035-06DI5	6	●	6	35	44	82
DSW061-043-08DI5	6.1	●	8	43	53	91
DSW062-043-08DI5	6.2	●	8	43	53	91
DSW063-043-08DI5	6.3	●	8	43	53	91
DSW064-043-08DI5	6.4	●	8	43	53	91
DSW065-043-08DI5	6.5	●	8	43	53	91
DSW066-043-08DI5	6.6	●	8	43	53	91
DSW067-043-08DI5	6.7	●	8	43	53	91
DSW068-043-08DI5	6.8	●	8	43	53	91
DSW069-043-08DI5	6.9	●	8	43	53	91
DSW070-043-08DI5	7	●	8	43	53	91
DSW071-043-08DI5	7.1	●	8	43	53	91
DSW072-043-08DI5	7.2	●	8	43	53	91
DSW073-043-08DI5	7.3	●	8	43	53	91
DSW074-043-08DI5	7.4	●	8	43	53	91
DSW075-043-08DI5	7.5	●	8	43	53	91

Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW076-043-08DI5	7.6	●	8	43	53	91
DSW077-043-08DI5	7.7	●	8	43	53	91
DSW078-043-08DI5	7.8	●	8	43	53	91
DSW079-043-08DI5	7.9	●	8	43	53	91
DSW080-043-08DI5	8	●	8	43	53	91
DSW081-049-10DI5	8.1	●	10	49	61	103
DSW082-049-10DI5	8.2	●	10	49	61	103
DSW083-049-10DI5	8.3	●	10	49	61	103
DSW084-049-10DI5	8.4	●	10	49	61	103
DSW085-049-10DI5	8.5	●	10	49	61	103
DSW086-049-10DI5	8.6	●	10	49	61	103
DSW087-049-10DI5	8.7	●	10	49	61	103
DSW088-049-10DI5	8.8	●	10	49	61	103
DSW089-049-10DI5	8.9	●	10	49	61	103
DSW090-049-10DI5	9	●	10	49	61	103
DSW091-049-10DI5	9.1	●	10	49	61	103
DSW092-049-10DI5	9.2	●	10	49	61	103
DSW093-049-10DI5	9.3	●	10	49	61	103
DSW094-049-10DI5	9.4	●	10	49	61	103
DSW095-049-10DI5	9.5	●	10	49	61	103
DSW096-049-10DI5	9.6	●	10	49	61	103
DSW097-049-10DI5	9.7	●	10	49	61	103
DSW098-049-10DI5	9.8	●	10	49	61	103
DSW099-049-10DI5	9.9	●	10	49	61	103
DSW100-049-10DI5	10	●	10	49	61	103
DSW101-056-12DI5	10.1	●	12	56	71	118
DSW102-056-12DI5	10.2	●	12	56	71	118
DSW103-056-12DI5	10.3	●	12	56	71	118
DSW104-056-12DI5	10.4	●	12	56	71	118
DSW105-056-12DI5	10.5	●	12	56	71	118
DSW106-056-12DI5	10.6	●	12	56	71	118
DSW107-056-12DI5	10.7	●	12	56	71	118
DSW108-056-12DI5	10.8	●	12	56	71	118
DSW109-056-12DI5	10.9	●	12	56	71	118
DSW110-056-12DI5	11	●	12	56	71	118
DSW111-056-12DI5	11.1	●	12	56	71	118
DSW112-056-12DI5	11.2	●	12	56	71	118
DSW113-056-12DI5	11.3	●	12	56	71	118
DSW114-056-12DI5	11.4	●	12	56	71	118
DSW115-056-12DI5	11.5	●	12	56	71	118
DSW116-056-12DI5	11.6	●	12	56	71	118
DSW117-056-12DI5	11.7	●	12	56	71	118
DSW118-056-12DI5	11.8	●	12	56	71	118
DSW119-056-12DI5	11.9	●	12	56	71	118
DSW120-056-12DI5	12	●	12	56	71	118

● : Line up

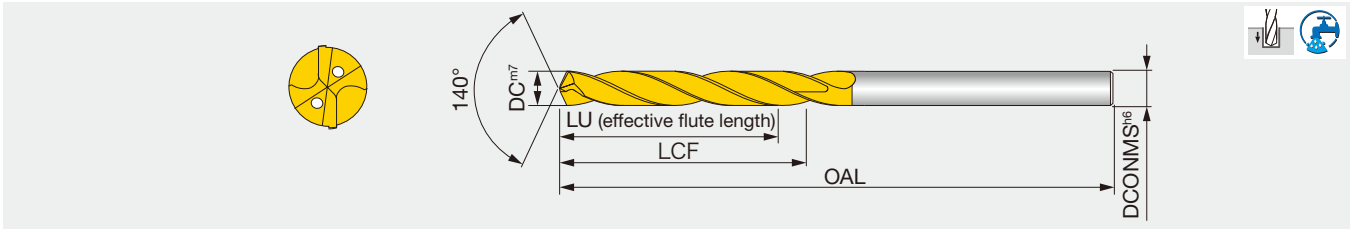
STANDARD CUTTING CONDITIONS

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DSW-DI8

Solid drill, L/D = 8, DIN shank, with coolant hole



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-029-06DI8	3	●	6	29	34	72
DSW031-029-06DI8	3.1	●	6	29	34	72
DSW032-029-06DI8	3.2	●	6	29	34	72
DSW033-029-06DI8	3.3	●	6	29	34	72
DSW034-029-06DI8	3.4	●	6	29	34	72
DSW035-029-06DI8	3.5	●	6	29	34	72
DSW036-029-06DI8	3.6	●	6	29	34	72
DSW037-029-06DI8	3.7	●	6	29	34	72
DSW038-036-06DI8	3.8	●	6	36	43	81
DSW039-036-06DI8	3.9	●	6	36	43	81
DSW040-036-06DI8	4	●	6	36	43	81
DSW041-036-06DI8	4.1	●	6	36	43	81
DSW042-036-06DI8	4.2	●	6	36	43	81
DSW043-036-06DI8	4.3	●	6	36	43	81
DSW044-036-06DI8	4.4	●	6	36	43	81
DSW045-036-06DI8	4.5	●	6	36	43	81
DSW046-036-06DI8	4.6	●	6	36	43	81
DSW047-036-06DI8	4.7	●	6	36	43	81
DSW048-048-06DI8	4.8	●	6	48	57	95
DSW049-048-06DI8	4.9	●	6	48	57	95
DSW050-048-06DI8	5	●	6	48	57	95
DSW051-048-06DI8	5.1	●	6	48	57	95
DSW052-048-06DI8	5.2	●	6	48	57	95
DSW053-048-06DI8	5.3	●	6	48	57	95
DSW054-048-06DI8	5.4	●	6	48	57	95
DSW055-048-06DI8	5.5	●	6	48	57	95
DSW056-048-06DI8	5.6	●	6	48	57	95
DSW057-048-06DI8	5.7	●	6	48	57	95
DSW058-048-06DI8	5.8	●	6	48	57	95
DSW059-048-06DI8	5.9	●	6	48	57	95
DSW060-048-06DI8	6	●	6	48	57	95
DSW061-064-08DI8	6.1	●	8	64	76	114
DSW062-064-08DI8	6.2	●	8	64	76	114
DSW063-064-08DI8	6.3	●	8	64	76	114
DSW064-064-08DI8	6.4	●	8	64	76	114
DSW065-064-08DI8	6.5	●	8	64	76	114

Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW066-064-08DI8	6.6	●	8	64	76	114
DSW067-064-08DI8	6.7	●	8	64	76	114
DSW068-064-08DI8	6.8	●	8	64	76	114
DSW069-064-08DI8	6.9	●	8	64	76	114
DSW070-064-08DI8	7	●	8	64	76	114
DSW071-064-08DI8	7.1	●	8	64	76	114
DSW072-064-08DI8	7.2	●	8	64	76	114
DSW073-064-08DI8	7.3	●	8	64	76	114
DSW074-064-08DI8	7.4	●	8	64	76	114
DSW075-064-08DI8	7.5	●	8	64	76	114
DSW076-064-08DI8	7.6	●	8	64	76	114
DSW077-064-08DI8	7.7	●	8	64	76	114
DSW078-064-08DI8	7.8	●	8	64	76	114
DSW079-064-08DI8	7.9	●	8	64	76	114
DSW080-064-08DI8	8	●	8	64	76	114
DSW081-080-10DI8	8.1	●	10	80	95	142
DSW082-080-10DI8	8.2	●	10	80	95	142
DSW083-080-10DI8	8.3	●	10	80	95	142
DSW084-080-10DI8	8.4	●	10	80	95	142
DSW085-080-10DI8	8.5	●	10	80	95	142
DSW086-080-10DI8	8.6	●	10	80	95	142
DSW087-080-10DI8	8.7	●	10	80	95	142
DSW088-080-10DI8	8.8	●	10	80	95	142
DSW089-080-10DI8	8.9	●	10	80	95	142
DSW090-080-10DI8	9	●	10	80	95	142
DSW091-080-10DI8	9.1	●	10	80	95	142
DSW092-080-10DI8	9.2	●	10	80	95	142
DSW093-080-10DI8	9.3	●	10	80	95	142
DSW094-080-10DI8	9.4	●	10	80	95	142
DSW095-080-10DI8	9.5	●	10	80	95	142
DSW096-080-10DI8	9.6	●	10	80	95	142
DSW097-080-10DI8	9.7	●	10	80	95	142
DSW098-080-10DI8	9.8	●	10	80	95	142
DSW099-080-10DI8	9.9	●	10	80	95	142
DSW100-080-10DI8	10	●	10	80	95	142

● : Line up

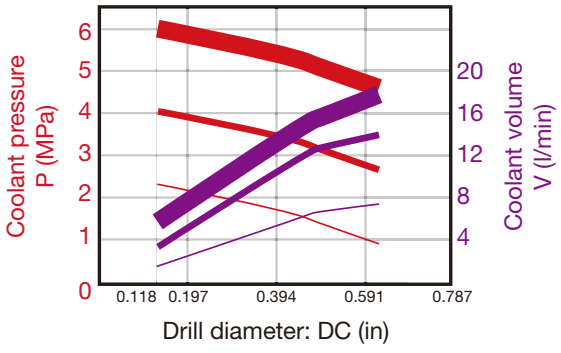
STANDARD CUTTING CONDITIONS

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Recommended coolant pressure and volume for internal coolant supply:

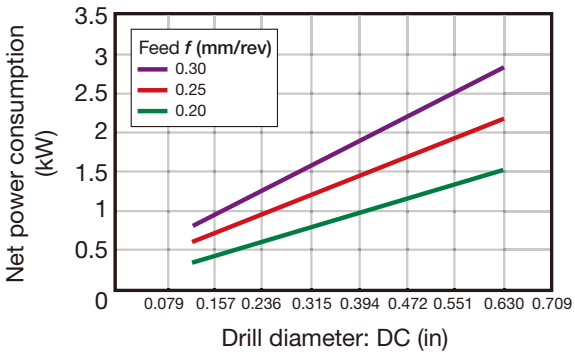
The following graph is a reference guide for pressure and volume. Values should be adjusted according to work material and actual chip evacuation.



: Ideal pressure
: Enough pressure
: Minimum pressure
: Ideal volume
: Enough volume
: Minimum volume

Reference for required spindle power:

The required spindle power may vary depending on the type of work material or hardness. A spindle with sufficient power should be used when referring to the below graph.



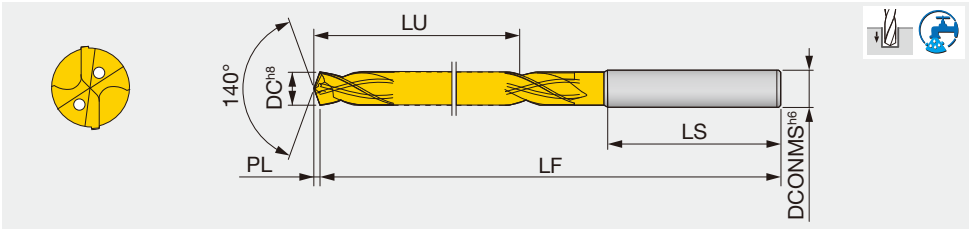
Work material : Alloy steel (4340)
Cutting speed : *Vc* = 328 sfm

SOLIDDRILL

DSXU-F03, F05

Solid drill, L/D = 3, 5 with coolant hole





L/D = 3

Inch	DC	AH180	DCONMS	LU	LS	LF	PL
DSXU2031F03	13/64	●	0.203	1.137	2.050	3.230	0.037
DSXU2344F03	15/64	●	0.234	1.223	2.050	3.230	0.043
DSXU2500F03	1/4	●	0.25	1.345	2.090	3.390	0.045
DSXU2656F03	17/64	●	0.266	1.428	2.090	3.460	0.048
DSXU2813F03	9/32	●	0.281	1.551	2.130	3.620	0.051
DSXU3125F03	5/16	●	0.313	1.627	2.130	3.700	0.057
DSXU3438F03	11/32	●	0.344	1.833	2.170	3.940	0.063
DSXU3750F03	3/8	●	0.375	2.038	2.200	4.170	0.068
DSXU3906F03	25/64	●	0.391	2.041	2.200	4.170	0.071
DSXU4063F03	13/32	●	0.406	2.164	2.400	4.570	0.074
DSXU4219F03	27/64	●	0.422	2.247	2.400	4.570	0.077
DSXU4375F03	7/16	●	0.438	2.360	2.440	4.800	0.080
DSXU4531F03	29/64	●	0.453	2.442	2.440	4.800	0.082
DSXU4688F03	15/32	●	0.469	2.445	2.440	4.800	0.085
DSXU4844F03	31/64	●	0.484	2.648	2.480	5.040	0.088
DSXU5000F03	1/2	●	0.500	2.651	2.480	5.040	0.091
DSXU5156F03	33/64	●	0.516	2.854	2.520	5.280	0.094
DSXU5313F03	17/32	●	0.531	2.857	2.520	5.280	0.097
DSXU5469F03	35/64	●	0.547	2.86	2.520	5.280	0.100
DSXU5625F03	9/16	●	0.563	3.052	2.560	5.510	0.102
DSXU5938F03	19/32	●	0.594	3.258	2.600	5.750	0.108
DSXU6250F03	5/8	●	0.625	3.264	2.600	5.750	0.114
DSXU6562F03	21/32	●	0.656	3.469	2.640	5.980	0.119
DSXU6875F03	11/16	●	0.688	3.665	2.680	6.220	0.125

L/D = 5

Inch	DC	AH180	DCONMS	LU	LS	LF	PL
DSXU2031F05	13/64	●	0.203	1.767	2.050	3.780	0.037
DSXU2188F05	7/32	●	0.219	1.93	2.050	3.940	0.040
DSXU2344F05	15/64	●	0.234	1.933	2.050	3.940	0.043
DSXU2500F05	1/4	●	0.25	2.095	2.090	4.130	0.045
DSXU2656F05	17/64	●	0.266	2.248	2.090	4.290	0.048
DSXU2813F05	9/32	●	0.281	2.411	2.130	4.490	0.051
DSXU2969F05	19/64	●	0.297	2.574	2.130	4.650	0.054
DSXU3125F05	5/16	●	0.313	2.577	2.130	4.650	0.057
DSXU3281F05	21/64	●	0.328	2.74	2.170	5.000	0.060
DSXU3438F05	11/32	●	0.344	2.893	2.170	5.000	0.063
DSXU3594F05	23/64	●	0.359	3.055	2.200	5.350	0.065
DSXU3750F05	3/8	●	0.375	3.218	2.200	5.350	0.068
DSXU3906F05	25/64	●	0.391	3.221	2.200	5.350	0.071
DSXU4063F05	13/32	●	0.406	3.384	2.400	5.870	0.074
DSXU4219F05	27/64	●	0.422	3.537	2.400	5.870	0.077
DSXU4375F05	7/16	●	0.438	3.700	2.440	6.220	0.080
DSXU4531F05	29/64	●	0.453	3.862	2.440	6.220	0.082
DSXU4844F05	31/64	●	0.484	4.178	2.480	6.570	0.088
DSXU5000F05	1/2	●	0.500	4.181	2.480	6.570	0.091
DSXU5156F05	33/64	●	0.516	4.504	2.520	6.930	0.094
DSXU5313F05	17/32	●	0.531	4.507	2.520	6.930	0.097
DSXU5625F05	9/16	●	0.563	4.822	2.560	7.280	0.102
DSXU6250F05	5/8	●	0.625	5.154	2.600	7.640	0.114
DSXU6562F05	21/32	●	0.656	5.469	2.640	7.990	0.119

● : Line up

STANDARD CUTTING CONDITIONS

See more information

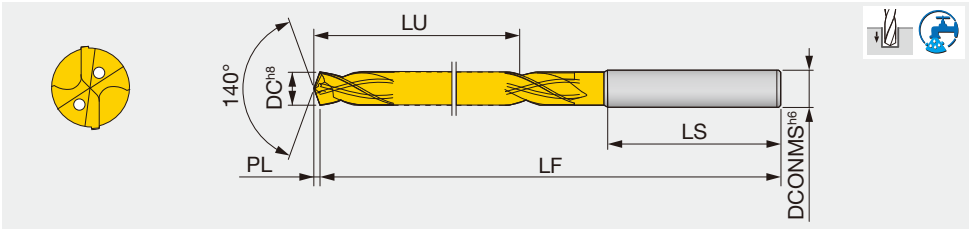
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SOLIDDRILL

DSX-F03

Solid drill, L/D = 3, with coolant hole





Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F03	3	●	3	9.6	48	68	0.55
DSX0310F03	3.1	●	4	9.9	48	71	0.56
DSX0320F03	3.2	●	4	10.2	48	71	0.58
DSX0330F03	3.3	●	4	10.5	48	71	0.6
DSX0340F03	3.4	●	4	10.8	48	71	0.62
DSX0350F03	3.5	●	4	11.1	48	71	0.64
DSX0360F03	3.6	●	4	11.5	48	73	0.66
DSX0370F03	3.7	●	4	11.8	48	73	0.67
DSX0380F03	3.8	●	4	12.1	48	73	0.69
DSX0390F03	3.9	●	4	12.4	48	73	0.71
DSX0400F03	4	●	4	12.7	48	73	0.73
DSX0410F03	4.1	●	5	13.1	50	78	0.75
DSX0420F03	4.2	●	5	13.4	50	78	0.76
DSX0430F03	4.3	●	5	13.7	50	78	0.78
DSX0440F03	4.4	●	5	14	50	78	0.8
DSX0450F03	4.5	●	5	14.3	50	78	0.82
DSX0460F03	4.6	●	5	14.6	50	80	0.84
DSX0470F03	4.7	●	5	15	50	80	0.86
DSX0480F03	4.8	●	5	15.3	50	80	0.87
DSX0490F03	4.9	●	5	15.6	50	80	0.89
DSX0500F03	5	●	5	15.9	50	80	0.91
DSX0510F03	5.1	●	6	16.2	52	82	0.93
DSX0520F03	5.2	●	6	16.6	52	82	0.95
DSX0530F03	5.3	●	6	16.9	52	82	0.96
DSX0540F03	5.4	●	6	17.2	52	82	0.98
DSX0550F03	5.5	●	6	17.5	52	82	1
DSX0560F03	5.6	●	6	17.8	52	82	1.02
DSX0570F03	5.7	●	6	18.1	52	82	1.04
DSX0580F03	5.8	●	6	18.5	52	82	1.06
DSX0590F03	5.9	●	6	18.8	52	82	1.07
DSX0600F03	6	●	6	19.1	52	82	1.09
DSX0610F03	6.1	●	7	19.4	53	86	1.11
DSX0620F03	6.2	●	7	19.7	53	86	1.13
DSX0630F03	6.3	●	7	20.1	53	86	1.15
DSX0640F03	6.4	●	7	20.4	53	86	1.16
DSX0650F03	6.5	●	7	20.7	53	86	1.18
DSX0660F03	6.6	●	7	21	53	88	1.2
DSX0670F03	6.7	●	7	21.3	53	88	1.22
DSX0680F03	6.8	●	7	21.6	53	88	1.24
DSX0690F03	6.9	●	7	22	53	88	1.26
DSX0700F03	7	●	7	22.3	53	88	1.27
DSX0710F03	7.1	●	8	22.6	54	92	1.29
DSX0720F03	7.2	●	8	22.9	54	92	1.31
DSX0730F03	7.3	●	8	23.2	54	92	1.33

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0740F03	7.4	●	8	23.6	54	92	1.35
DSX0750F03	7.5	●	8	23.9	54	92	1.36
DSX0760F03	7.6	●	8	24.2	54	94	1.38
DSX0770F03	7.7	●	8	24.5	54	94	1.4
DSX0780F03	7.8	●	8	24.8	54	94	1.42
DSX0790F03	7.9	●	8	25.1	54	94	1.44
DSX0800F03	8	●	8	25.5	54	94	1.46
DSX0810F03	8.1	●	9	25.8	55	100	1.47
DSX0820F03	8.2	●	9	26.1	55	100	1.49
DSX0830F03	8.3	●	9	26.4	55	100	1.51
DSX0840F03	8.4	●	9	26.7	55	100	1.53
DSX0850F03	8.5	●	9	27.1	55	100	1.55
DSX0860F03	8.6	●	9	27.4	55	100	1.57
DSX0870F03	8.7	●	9	27.7	55	100	1.58
DSX0880F03	8.8	●	9	28	55	100	1.6
DSX0890F03	8.9	●	9	28.3	55	100	1.62
DSX0900F03	9	●	9	28.6	55	100	1.64
DSX0910F03	9.1	●	10	29	56	106	1.66
DSX0920F03	9.2	●	10	29.3	56	106	1.67
DSX0930F03	9.3	●	10	29.6	56	106	1.69
DSX0940F03	9.4	●	10	29.9	56	106	1.71
DSX0950F03	9.5	●	10	30.2	56	106	1.73
DSX0960F03	9.6	●	10	30.6	56	106	1.75
DSX0970F03	9.7	●	10	30.9	56	106	1.77
DSX0980F03	9.8	●	10	31.2	56	106	1.78
DSX0990F03	9.9	●	10	31.5	56	106	1.8
DSX1000F03	10	●	10	31.8	56	106	1.82
DSX1030F03	10.3	●	11	32.8	61	116	1.87
DSX1050F03	10.5	●	11	33.4	61	116	1.91
DSX1080F03	10.8	●	11	34.4	61	116	1.97
DSX1100F03	11	●	11	35	61	116	2
DSX1180F03	11.8	●	12	37.5	62	122	2.15
DSX1210F03	12.1	●	13	38.5	63	128	2.2
DSX1250F03	12.5	●	13	39.8	63	128	2.27
DSX1300F03	13	●	13	41.4	63	128	2.37
DSX1370F03	13.7	●	14	43.6	64	134	2.49
DSX1400F03	14	●	14	44.5	64	134	2.55
DSX1410F03	14.1	●	15	44.9	65	140	2.57
DSX1550F03	15.5	●	16	49.3	66	146	2.82
DSX1600F03	16	●	16	50.9	66	146	2.91
DSX1650F03	16.5	●	17	52.5	67	152	3
DSX1750F03	17.5	●	18	55.7	68	158	3.18
DSX2000F03	20	●	20	63.6	70	170	3.64

● : Line up

STANDARD CUTTING CONDITIONS

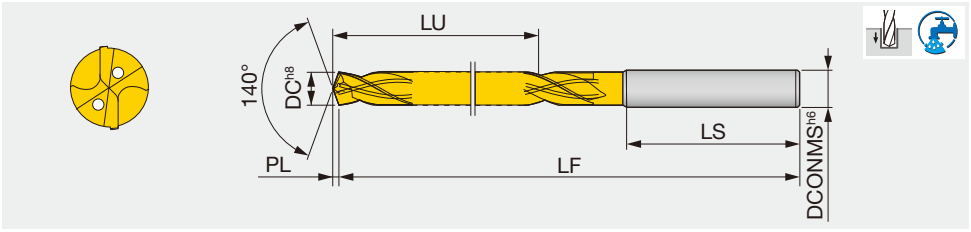
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DSX-F05

Solid drill, L/D = 5, with coolant hole





Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F05	3	●	3	15.6	48	77	0.55
DSX0310F05	3.1	●	4	16.1	48	81	0.56
DSX0320F05	3.2	●	4	16.6	48	81	0.58
DSX0330F05	3.3	●	4	17.1	48	81	0.6
DSX0340F05	3.4	●	4	17.6	48	81	0.62
DSX0350F05	3.5	●	4	18.1	48	81	0.64
DSX0360F05	3.6	●	4	18.7	48	85	0.66
DSX0370F05	3.7	●	4	19.2	48	85	0.67
DSX0380F05	3.8	●	4	19.7	48	85	0.69
DSX0390F05	3.9	●	4	20.2	48	85	0.71
DSX0400F05	4	●	4	20.7	48	85	0.73
DSX0410F05	4.1	●	5	21.3	50	91	0.75
DSX0420F05	4.2	●	5	21.8	50	91	0.76
DSX0430F05	4.3	●	5	22.3	50	91	0.78
DSX0440F05	4.4	●	5	22.8	50	91	0.8
DSX0450F05	4.5	●	5	23.3	50	91	0.82
DSX0460F05	4.6	●	5	23.8	50	94	0.84
DSX0470F05	4.7	●	5	24.4	50	94	0.86
DSX0480F05	4.8	●	5	24.9	50	94	0.87
DSX0490F05	4.9	●	5	25.4	50	94	0.89
DSX0500F05	5	●	5	25.9	50	94	0.91
DSX0510F05	5.1	●	6	26.4	52	96	0.93
DSX0520F05	5.2	●	6	26.9	52	96	0.95
DSX0530F05	5.3	●	6	27.5	52	96	0.96
DSX0540F05	5.4	●	6	28	52	96	0.98
DSX0550F05	5.5	●	6	28.5	52	96	1
DSX0560F05	5.6	●	6	29	52	100	1.02
DSX0570F05	5.7	●	6	29.5	52	100	1.04
DSX0580F05	5.8	●	6	30.1	52	100	1.06
DSX0590F05	5.9	●	6	30.6	52	100	1.07
DSX0600F05	6	●	6	31.1	52	100	1.09
DSX0610F05	6.1	●	7	31.6	53	105	1.11
DSX0620F05	6.2	●	7	32.1	53	105	1.13
DSX0630F05	6.3	●	7	32.6	53	105	1.15
DSX0640F05	6.4	●	7	33.2	53	105	1.16
DSX0650F05	6.5	●	7	33.7	53	105	1.18
DSX0660F05	6.6	●	7	34.2	53	109	1.2
DSX0670F05	6.7	●	7	34.7	53	109	1.22
DSX0680F05	6.8	●	7	35.2	53	109	1.24
DSX0690F05	6.9	●	7	35.8	53	109	1.26
DSX0700F05	7	●	7	36.3	53	109	1.27
DSX0710F05	7.1	●	8	36.8	54	114	1.29
DSX0720F05	7.2	●	8	37.3	54	114	1.31

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0730F05	7.3	●	8	37.8	54	114	1.33
DSX0740F05	7.4	●	8	38.4	54	114	1.35
DSX0750F05	7.5	●	8	38.9	54	114	1.36
DSX0760F05	7.6	●	8	39.4	54	118	1.38
DSX0770F05	7.7	●	8	39.9	54	118	1.4
DSX0780F05	7.8	●	8	40.4	54	118	1.42
DSX0790F05	7.9	●	8	40.9	54	118	1.44
DSX0800F05	8	●	8	41.5	54	118	1.46
DSX0810F05	8.1	●	9	42	55	127	1.47
DSX0820F05	8.2	●	9	42.5	55	127	1.49
DSX0830F05	8.3	●	9	43	55	127	1.51
DSX0840F05	8.4	●	9	43.5	55	127	1.53
DSX0850F05	8.5	●	9	44	55	127	1.55
DSX0860F05	8.6	●	9	44.6	55	127	1.57
DSX0870F05	8.7	●	9	45.1	55	127	1.58
DSX0880F05	8.8	●	9	45.6	55	127	1.6
DSX0890F05	8.9	●	9	46.1	55	127	1.62
DSX0900F05	9	●	9	46.6	55	127	1.64
DSX0910F05	9.1	●	10	47.2	56	136	1.66
DSX0920F05	9.2	●	10	47.7	56	136	1.67
DSX0930F05	9.3	●	10	48.2	56	136	1.69
DSX0940F05	9.4	●	10	48.7	56	136	1.71
DSX0950F05	9.5	●	10	49.2	56	136	1.73
DSX0960F05	9.6	●	10	49.8	56	136	1.75
DSX0970F05	9.7	●	10	50.3	56	136	1.77
DSX0980F05	9.8	●	10	50.8	56	136	1.78
DSX0990F05	9.9	●	10	51.3	56	136	1.8
DSX1000F05	10	●	10	51.8	56	136	1.82
DSX1020F05	10.2	●	11	52.9	61	149	1.86
DSX1030F05	10.3	●	11	53.4	61	149	1.87
DSX1050F05	10.5	●	11	54.4	61	149	1.91
DSX1100F05	11	●	11	57	61	149	2
DSX1110F05	11.1	●	12	57.5	62	158	2.02
DSX1150F05	11.5	●	12	59.6	62	158	2.09
DSX1180F05	11.8	●	12	61.1	62	158	2.15
DSX1220F05	12.2	●	13	63.2	63	167	2.22
DSX1300F05	13	●	13	67.4	63	167	2.37
DSX1350F05	13.5	●	14	70	64	176	2.46
DSX1400F05	14	●	14	72.5	64	176	2.55
DSX1410F05	14.1	●	15	73.1	65	185	2.57
DSX1600F05	16	●	16	82.9	66	194	2.91
DSX1750F05	17.5	●	18	90.7	68	212	3.18
DSX1800F05	18	●	18	93.3	68	212	3.28

● : Line up

STANDARD CUTTING CONDITIONS

See more information

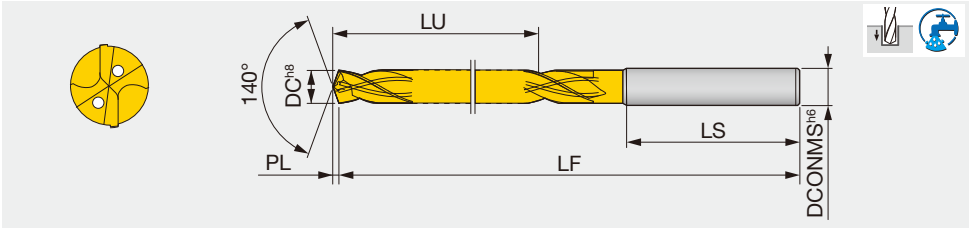
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SOLIDDRILL

DSX-F08

Solid drill, L/D = 8, with coolant hole





Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F08	3	●	3	33.6	48	86	0.55
DSX0350F08	3.5	●	4	39.6	48	92	0.64
DSX0400F08	4	●	4	44.7	48	97	0.73
DSX0450F08	4.5	●	5	50.8	50	105	0.82
DSX0500F08	5	●	5	55.9	50	110	0.91
DSX0510F08	5.1	●	6	61.9	52	113	0.93
DSX0550F08	5.5	●	6	62	52	113	1
DSX0600F08	6	●	6	67.1	52	118	1.09
DSX0650F08	6.5	●	7	73.2	53	125	1.18
DSX0700F08	7	●	7	78.3	53	130	1.27

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0750F08	7.5	●	8	84.4	54	137	1.36
DSX0800F08	8	●	8	89.5	54	142	1.46
DSX0830F08	8.3	●	9	95.5	55	154	1.51
DSX0850F08	8.5	●	9	95.6	55	154	1.55
DSX0900F08	9	●	9	100.6	55	154	1.64
DSX0950F08	9.5	●	10	106.7	56	166	1.73
DSX1000F08	10	●	10	111.8	56	166	1.82
DSX1100F08	11	●	11	90	61	182	2
DSX1300F08	13	●	13	106.4	63	206	2.37

● : Line up

STANDARD CUTTING CONDITIONS

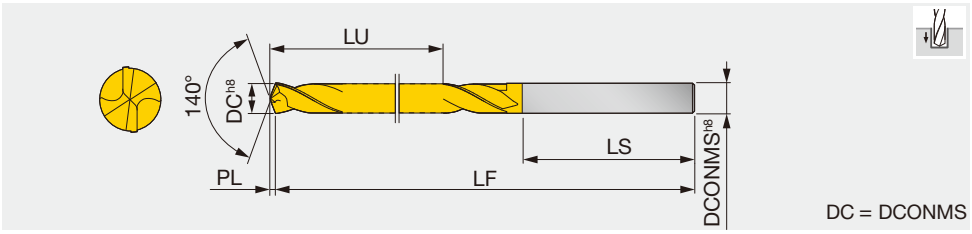
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DSE-F02

Solid drill, L/D = 2, without coolant hole





Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F02	3	●	3	16.6	30	46	0.55
DSE0320F02	3.2	●	3.2	18.6	31	49	0.58
DSE0340F02	3.4	●	3.4	20.6	32	52	0.62
DSE0350F02	3.5	●	3.5	20.6	32	52	0.64
DSE0400F02	4	●	4	22.7	33	55	0.73
DSE0430F02	4.3	●	4.3	24.8	34	58	0.78
DSE0450F02	4.5	●	4.5	24.8	34	58	0.82
DSE0500F02	5	●	5	26.9	36	62	0.91
DSE0510F02	5.1	●	5.1	26.9	36	62	0.93
DSE0550F02	5.5	●	5.5	29	38	66	1
DSE0560F02	5.6	●	5.6	29	38	66	1.02
DSE0600F02	6	●	6	29.1	38	66	1.09

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0640F02	6.4	●	6.4	32.2	39	70	1.16
DSE0650F02	6.5	●	6.5	32.2	39	70	1.18
DSE0680F02	6.8	●	6.8	35.2	40	74	1.24
DSE0700F02	7	●	7	35.3	40	74	1.27
DSE0750F02	7.5	●	7.5	35.4	40	74	1.36
DSE0800F02	8	●	8	38.5	42	79	1.46
DSE0850F02	8.5	●	8.5	38.6	42	79	1.55
DSE0900F02	9	●	9	41.6	44	84	1.64
DSE0950F02	9.5	●	9.5	41.7	44	84	1.73
DSE1000F02	10	●	10	44.8	46	89	1.82
DSE1500F02	15	●	15	58.7	55	111	2.73

● : Line up

STANDARD CUTTING CONDITIONS

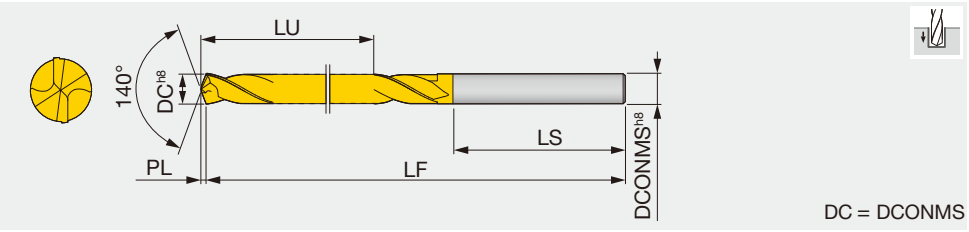
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DSE-F03

Solid drill, L/D = 3, without coolant hole





Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F03	3	●	3	21.6	39	60	0.55
DSE0320F03	3.2	●	3.2	24.6	36	60	0.58
DSE0340F03	3.4	●	3.4	24.6	36	60	0.62
DSE0350F03	3.5	●	3.5	24.6	36	60	0.64
DSE0400F03	4	●	4	27.7	33	60	0.73
DSE0430F03	4.3	●	4.3	29.8	34	63	0.78
DSE0450F03	4.5	●	4.5	29.8	34	63	0.82
DSE0500F03	5	●	5	32.9	36	68	0.91
DSE0510F03	5.1	●	5.1	34.9	38	72	0.93
DSE0550F03	5.5	●	5.5	35	38	72	1
DSE0600F03	6	●	6	42.1	40	81	1.09
DSE0650F03	6.5	●	6.5	42.2	40	81	1.18
DSE0680F03	6.8	●	6.8	44.2	40	83	1.24

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0700F03	7	●	7	44.3	40	83	1.27
DSE0740F03	7.4	●	7.4	46.4	42	87	1.35
DSE0750F03	7.5	●	7.5	46.4	42	87	1.36
DSE0800F03	8	●	8	49.5	42	90	1.46
DSE0850F03	8.5	●	8.5	54.6	43	96	1.55
DSE0860F03	8.6	●	8.6	56.6	43	98	1.57
DSE0900F03	9	●	9	56.6	43	98	1.64
DSE0950F03	9.5	●	9.5	59.7	44	102	1.73
DSE1000F03	10	●	10	61.8	45	105	1.82
DSE1030F03	10.3	●	10.3	67.9	46	112	1.87
DSE1050F03	10.5	●	10.5	67.9	46	112	1.91
DSE1100F03	11	●	11	70	46	114	2
DSE1500F03	15	●	15	93.7	62	153	2.73

● : Line up

STANDARD CUTTING CONDITIONS

See more information

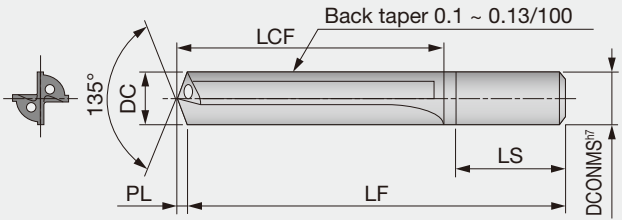
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SOLIDDRILL

FDCU

Solid drill, L/D = 5, 8 with coolant hole, for cast iron and Aluminum alloy





L/D = 5

Inch	DC	G1F	DCONMS	LCF	LS	LF	PL
FDCU218S	0.219	●	0.236	1.935	1.57	3.54	0.045
FDCU265S	0.266	●	0.276	2.260	1.57	3.94	0.055
FDCU312S	0.313	●	0.315	2.585	1.65	4.33	0.065
FDCU328S	0.328	●	0.354	2.745	1.73	4.53	0.068

L/D = 8

Inch	DC	G1F	DCONMS	LCF	LS	LF	PL
FDCU218L	0.219	●	0.236	2.643	1.57	4.33	0.045
FDCU250L	0.250	●	0.276	2.887	1.57	4.53	0.052
FDCU265L	0.266	●	0.276	3.086	1.57	4.72	0.055
FDCU281L	0.281	●	0.315	3.326	1.65	4.92	0.058
FDCU328L	0.328	●	0.354	3.769	1.73	5.51	0.068
FDCU343L	0.344	●	0.354	3.969	1.73	5.71	0.071

● : Line up

DC (in)	Tolerance (in)
0.203" ≤ DC ≤ 0.234"	+0.0008" ~ +0.0004"
0.234" < DC ≤ 0.328"	+0.0010" ~ +0.0006"

DC (in)	Tolerance (in)
0.219" ≤ DC	+0.0008" ~ +0.0004"
0.250" < DC ≤ 0.344"	+0.0010" ~ +0.0006"

STANDARD CUTTING CONDITIONS

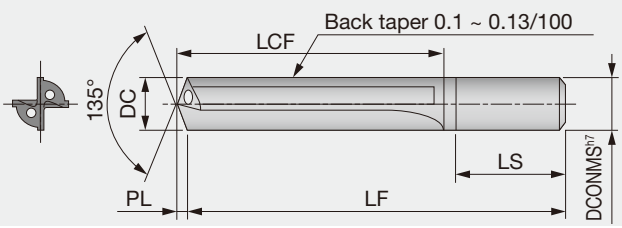
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FDC-L L/D=8

Solid drill, L/D = 8, with coolant hole, for cast iron and Aluminum alloy





Metric	DC	G1F	DCONMS	LCF	LS	LF	PL
FDC0500L	5	●	5	56	38	95	1.04
FDC0550L	5.5	●	6	62.1	40	105	1.14
FDC0600L	6	●	6	67.2	40	110	1.24
FDC0620L	6.2	●	7	73.3	40	115	1.28
FDC0650L	6.5	●	7	73.4	40	115	1.35
FDC0680L	6.8	●	7	78.4	40	120	1.41
FDC0700L	7	●	7	78.5	40	120	1.45

Metric	DC	G1F	DCONMS	LCF	LS	LF	PL
FDC0750L	7.5	●	8	84.6	42	125	1.55
FDC0780L	7.8	●	8	89.6	42	130	1.62
FDC0800L	8	●	8	89.7	42	130	1.66
FDC0850L	8.5	●	9	95.8	44	140	1.76
FDC0860L	8.6	●	9	100.8	44	145	1.78
FDC0900L	9	●	9	100.9	44	145	1.86
FDC0950L	9.5	●	10	107	44	150	1.97
FDC1000L	10	●	10	112.1	46	160	2.07

● : Line up

DC (mm)	Tolerance (mm)
5 ≤ DC ≤ 6	+0.02 ~ +0.01
6 < DC ≤ 10	+0.025 ~ +0.015

Coolant

- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

STANDARD CUTTING CONDITIONS

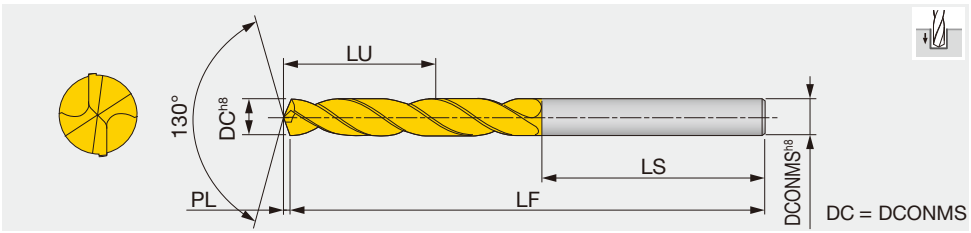
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DMXU-VS

Solid drill, L/D = 2, without coolant hole





Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1110VS	#34	●	0.111	0.630	1.180	1.810
DMXU1130VS	#33	●	0.113	0.630	1.180	1.810
DMXU1160VS	#32	●	0.116	0.630	1.180	1.810
DMXU1200VS	#31	●	0.120	0.708	1.220	1.930
DMXU1250VS	1/8	●	0.125	0.708	1.220	1.930
DMXU1285VS	#30	●	0.129	0.708	1.220	1.930
DMXU1360VS	#29	●	0.136	0.787	1.260	2.050
DMXU1405VS	#28	●	0.141	0.787	1.260	2.050
DMXU1406VS	9/64	●	0.141	0.787	1.260	2.050
DMXU1440VS	#27	●	0.144	0.787	1.260	2.050
DMXU1470VS	#26	●	0.147	0.886	1.300	2.170
DMXU1495VS	#25	●	0.150	0.886	1.300	2.170
DMXU1520VS	#24	●	0.152	0.886	1.300	2.170
DMXU1540VS	#23	●	0.154	0.886	1.300	2.170
DMXU1562VS	5/32	●	0.156	0.886	1.300	2.170
DMXU1570VS	#22	●	0.157	0.886	1.300	2.170
DMXU1590VS	#21	●	0.159	0.886	1.300	2.170
DMXU1610VS	#20	●	0.161	0.886	1.300	2.170
DMXU1660VS	#19	●	0.166	0.945	1.340	2.280
DMXU1695VS	#18	●	0.170	0.945	1.340	2.280
DMXU1719VS	11/64	●	0.172	0.945	1.340	2.280
DMXU1730VS	#17	●	0.173	0.945	1.340	2.280
DMXU1770VS	#16	●	0.177	0.945	1.340	2.280
DMXU1800VS	#15	●	0.180	0.945	1.340	2.280
DMXU1820VS	#14	●	0.182	0.945	1.340	2.280
DMXU1850VS	#13	●	0.185	0.945	1.340	2.280
DMXU1875VS	3/16	●	0.188	1.020	1.420	2.440
DMXU1890VS	#12	●	0.189	1.020	1.420	2.440
DMXU1910VS	#11	●	0.191	1.020	1.420	2.440
DMXU1935VS	#10	●	0.194	1.020	1.420	2.440
DMXU1960VS	#9	●	0.196	1.020	1.420	2.440
DMXU1990VS	#8	●	0.199	1.020	1.420	2.440
DMXU2010VS	#7	●	0.201	1.020	1.420	2.440
DMXU2031VS	13/64	●	0.203	1.020	1.420	2.440
DMXU2040VS	#6	●	0.204	1.020	1.420	2.440
DMXU2055VS	#5	●	0.206	1.020	1.420	2.440
DMXU2090VS	#4	●	0.209	1.100	1.500	2.600
DMXU2130VS	#3	●	0.213	1.100	1.500	2.600
DMXU2188VS	7/32	●	0.219	1.100	1.500	2.600
DMXU2210VS	#2	●	0.221	1.100	1.500	2.600
DMXU2280VS	#1	●	0.228	1.100	1.500	2.600
DMXU2344VS	15/64	●	0.234	1.100	1.500	2.600
DMXU2380VS	#B	●	0.238	1.220	1.540	2.760
DMXU2420VS	#C	●	0.242	1.220	1.540	2.760
DMXU2460VS	#D	●	0.246	1.220	1.540	2.760
DMXU2500VS	1/4	●	0.250	1.220	1.540	2.760
DMXU2570VS	#F	●	0.257	1.220	1.540	2.760
DMXU2610VS	#G	●	0.261	1.220	1.540	2.760
DMXU2656VS	17/64	●	0.266	1.340	1.570	2.910
DMXU2660VS	#H	●	0.266	1.340	1.570	2.910
DMXU2720VS	#I	●	0.272	1.340	1.570	2.910
DMXU2770VS	#J	●	0.277	1.340	1.570	2.910
DMXU2810VS	#K	●	0.281	1.340	1.570	2.910
DMXU2812VS	9/32	●	0.281	1.340	1.570	2.910
DMXU2900VS	#L	●	0.290	1.340	1.570	2.910
DMXU2950VS	#M	●	0.295	1.340	1.570	2.910
DMXU2969VS	19/64	●	0.297	1.460	1.650	3.110
DMXU3020VS	#N	●	0.302	1.460	1.650	3.110
DMXU3125VS	5/16	●	0.313	1.460	1.650	3.110
DMXU3160VS	#0	●	0.316	1.460	1.650	3.110
DMXU3230VS	#P	●	0.323	1.460	1.650	3.110
DMXU3281VS	21/64	●	0.328	1.460	1.650	3.110
DMXU3320VS	#Q	●	0.332	1.460	1.650	3.110
DMXU3390VS	#R	●	0.339	1.570	1.730	3.310
DMXU3438VS	11/32	●	0.344	1.570	1.730	3.310
DMXU3480VS	#S	●	0.348	1.570	1.730	3.310
DMXU3580VS	#T	●	0.358	1.570	1.730	3.310
DMXU3594VS	23/64	●	0.359	1.570	1.730	3.310
DMXU3680VS	#U	●	0.368	1.570	1.730	3.310
DMXU3750VS	3/8	●	0.375	1.690	1.810	3.500
DMXU3770VS	#V	●	0.377	1.690	1.810	3.500
DMXU3860VS	#W	●	0.386	1.690	1.810	3.500
DMXU3906VS	25/64	●	0.391	1.690	1.810	3.500
DMXU3970VS	#X	●	0.397	1.690	1.810	3.500
DMXU4040VS	#Y	●	0.404	1.690	1.810	3.500
DMXU4062VS	13/32	●	0.406	1.690	1.810	3.500
DMXU4130VS	#Z	●	0.413	1.690	1.810	3.500
DMXU4219VS	27/64	●	0.422	1.850	1.890	3.740
DMXU4375VS	7/16	●	0.438	1.850	1.890	3.740
DMXU4531VS	29/64	●	0.453	1.850	1.890	3.740
DMXU4688VS	15/32	●	0.469	2.010	2.010	4.020
DMXU4844VS	31/64	●	0.484	2.010	2.010	4.020
DMXU5000VS	1/2	●	0.500	2.010	2.010	4.020
DMXU5050VS	TUBE	●	0.505	2.010	2.010	4.020
DMXU5156VS	33/64	●	0.516	2.010	2.010	4.020
DMXU5312VS	17/32	●	0.531	2.130	2.090	4.210
DMXU5469VS	35/64	●	0.547	2.130	2.090	4.210
DMXU5625VS	9/16	●	0.563	2.200	2.170	4.370
DMXU5781VS	37/64	●	0.578	2.200	2.170	4.370
DMXU5937VS	19/32	●	0.594	2.280	2.240	4.530
DMXU6094VS	39/64	●	0.609	2.280	2.240	4.530
DMXU6250VS	5/8	●	0.625	2.280	2.240	4.530
DMXU6330VS	TUBE	●	0.633	2.360	2.320	4.690
DMXU6406VS	41/64	●	0.641	2.360	2.320	4.690
DMXU6562VS	21/32	●	0.656	2.360	2.320	4.690
DMXU6875VS	11/16	●	0.688	2.440	2.400	4.850
DMXU7031VS	45/64	●	0.703	2.440	2.400	4.850
DMXU7187VS	23/32	●	0.719	2.520	2.480	5.000
DMXU7344VS	47/64	●	0.734	2.520	2.480	5.000
DMXU7500VS	3/4	●	0.750	2.600	2.560	5.160
DMXU7590VS	TUBE	●	0.759	2.600	2.600	5.160
DMXU7656VS	49/64	●	0.766	2.600	2.560	5.160
DMXU7812VS	25/32	●	0.781	2.600	2.560	5.160

Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.
Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

● : Line up

STANDARD CUTTING CONDITIONS

See more information

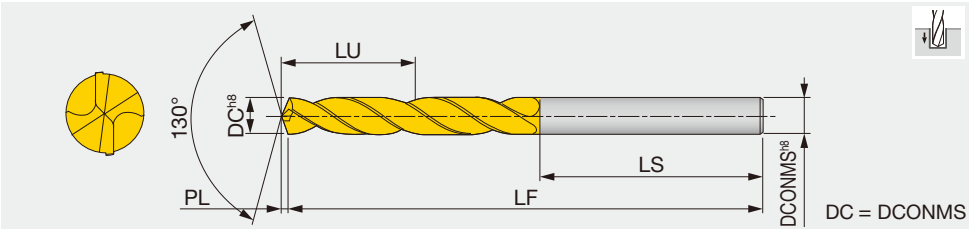
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SOLIDDRILL

DMXU-VM

Solid drill, L/D = 3, without coolant hole





Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1990VM	#8	●	0.199	1.340	1.500	2.830
DMXU2010VM	#7	●	0.201	1.340	1.500	2.830
DMXU2031VM	13/64	●	0.203	1.340	1.500	2.830
DMXU2040VM	#6	●	0.204	1.340	1.500	2.830
DMXU2055VM	#5	●	0.206	1.340	1.500	2.830
DMXU2090VM	#4	●	0.209	1.340	1.500	2.830
DMXU2130VM	#3	●	0.213	1.340	1.500	2.830
DMXU2188VM	7/32	●	0.219	1.420	1.500	2.910
DMXU2210VM	#2	●	0.221	1.340	1.500	2.910
DMXU2280VM	#1	●	0.228	1.340	1.500	2.910
DMXU2344VM	15/64	●	0.234	1.610	1.560	3.190
DMXU2380VM	#B	●	0.238	1.340	1.580	3.190
DMXU2420VM	#C	●	0.242	1.340	1.580	3.190
DMXU2460VM	#D	●	0.246	1.340	1.580	3.190
DMXU2500VM	1/4	●	0.250	1.340	1.580	3.190
DMXU2570VM	#F	●	0.257	1.690	1.570	3.270
DMXU2610VM	#G	●	0.261	1.690	1.570	3.270
DMXU2656VM	17/64	●	0.266	1.690	1.570	3.270
DMXU2660VM	#H	●	0.266	1.690	1.570	3.270
DMXU2720VM	#I	●	0.272	1.690	1.570	3.270
DMXU2770VM	#J	●	0.277	1.770	1.650	3.430
DMXU2810VM	#K	●	0.281	1.770	1.650	3.430
DMXU2812VM	9/32	●	0.281	1.770	1.650	3.430
DMXU2900VM	#L	●	0.290	1.770	1.650	3.430
DMXU2950VM	#M	●	0.295	1.770	1.650	3.430
DMXU2969VM	19/64	●	0.297	1.890	1.650	3.540
DMXU3020VM	#N	●	0.302	1.770	1.650	3.540
DMXU3125VM	5/16	●	0.313	1.770	1.650	3.540
DMXU3160VM	#O	●	0.316	2.090	1.690	3.780
DMXU3230VM	#P	●	0.323	2.090	1.690	3.780
DMXU3281VM	21/64	●	0.328	2.090	1.690	3.780
DMXU3320VM	#Q	●	0.332	2.090	1.690	3.780
DMXU3390VM	#R	●	0.339	2.170	1.690	3.860
DMXU3438VM	11/32	●	0.344	2.170	1.690	3.860
DMXU3480VM	#S	●	0.348	2.170	1.690	3.860
DMXU3580VM	#T	●	0.358	2.280	1.730	4.020
DMXU3594VM	23/64	●	0.359	2.280	1.730	4.020
DMXU3680VM	#U	●	0.368	2.280	1.730	4.020
DMXU3750VM	3/8	●	0.375	2.360	1.770	4.130
DMXU3770VM	#V	●	0.377	2.360	1.770	4.130
DMXU3860VM	#W	●	0.386	2.360	1.770	4.130
DMXU3906VM	25/64	●	0.390	2.360	1.770	4.130
DMXU3970VM	#X	●	0.397	2.600	1.810	4.410
DMXU4040VM	#Y	●	0.404	2.600	1.810	4.410
DMXU4062VM	13/32	●	0.406	2.600	1.810	4.410
DMXU4130VM	#Z	●	0.413	2.600	1.810	4.410
DMXU4219VM	27/64	●	0.422	2.670	1.810	4.490
DMXU4375VM	7/16	●	0.438	2.800	1.850	4.650
DMXU4531VM	29/64	●	0.453	2.870	1.890	4.760
DMXU4688VM	15/32	●	0.469	2.870	1.890	4.760
DMXU4844VM	31/64	●	0.484	2.990	2.320	5.320

Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU5000VM	1/2	●	0.500	3.070	2.320	5.390
DMXU5050VM	TUBE	●	0.505	3.070	2.320	5.390
DMXU5156VM	33/64	●	0.516	3.310	2.360	5.670
DMXU5312VM	17/32	●	0.531	3.310	2.360	5.670
DMXU5469VM	35/64	●	0.547	3.390	2.400	5.790
DMXU5625VM	9/16	●	0.562	3.500	2.440	5.940
DMXU5781VM	37/64	●	0.578	3.580	2.440	6.030
DMXU5937VM	19/32	●	0.594	3.700	2.480	6.180
DMXU6094VM	39/64	●	0.609	3.700	2.480	6.180
DMXU6250VM	5/8	●	0.625	3.780	2.520	6.300
DMXU6330VM	TUBE	●	0.633	4.020	2.400	6.570
DMXU6406VM	41/64	●	0.641	4.020	2.400	6.570
DMXU6562VM	21/32	●	0.656	4.020	2.400	6.570
DMXU6875VM	11/16	●	0.688	4.020	2.400	6.570
DMXU7031VM	45/64	●	0.703	4.020	2.400	6.570
DMXU7187VM	23/32	●	0.719	4.490	2.400	7.050
DMXU7344VM	47/64	●	0.734	4.490	2.400	7.050
DMXU7500VM	3/4	●	0.750	4.490	2.400	7.050
DMXU7590VM	TUBE	●	0.759	4.490	2.400	7.050
DMXU7656VM	49/64	●	0.766	4.490	2.400	7.050
DMXU7812VM	25/32	●	0.781	4.490	2.400	7.050

Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.
Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

● : Line up

STANDARD CUTTING CONDITIONS

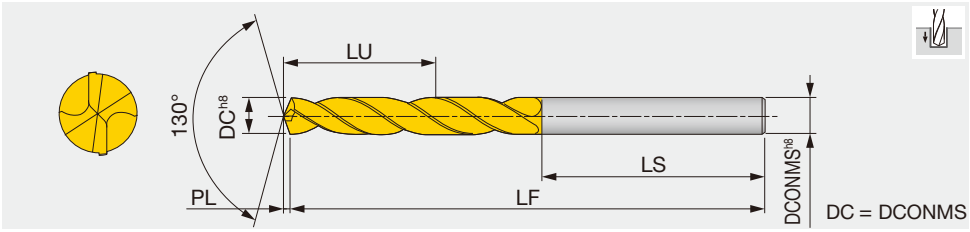
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DMX (S type)

Solid drill, L/D = 2, without coolant hole





Metric	DC	AH170	DCONMS	LU	LS	LF	PL
DMX037S	3.7	●	3.7	20.9	32	52	0.86
DMX038S	3.8	●	3.8	22.9	33	55	0.89
DMX039S	3.9	●	3.9	22.9	33	55	0.91
DMX040S	4	●	4	22.9	33	55	0.93
DMX051S	5.1	●	5.1	27.2	36	62	1.19
DMX061S	6.1	●	6.1	32.4	39	70	1.42
DMX062S	6.2	●	6.2	32.5	39	70	1.45
DMX068S	6.8	●	6.8	35.6	40	74	1.59
DMX070S	7	●	7	35.6	40	74	1.63

Metric	DC	AH170	DCONMS	LU	LS	LF	PL
DMX080S	8	●	8	38.9	42	79	1.87
DMX085S	8.5	●	8.5	39	42	79	1.98
DMX090S	9	●	9	42.1	44	84	2.1
DMX111S	11.1	●	11.1	49.6	48	95	2.59
DMX130S	13	●	13	54	51	102	3.03
DMX140S	14	●	14	57.3	53	107	3.26
DMX145S	14.5	●	14.5	59.4	55	111	3.38
DMX165S	16.5	●	16.5	63.9	59	119	3.85

• Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole. • Use a water-soluble cutting fluid.

● : Line up

STANDARD CUTTING CONDITIONS

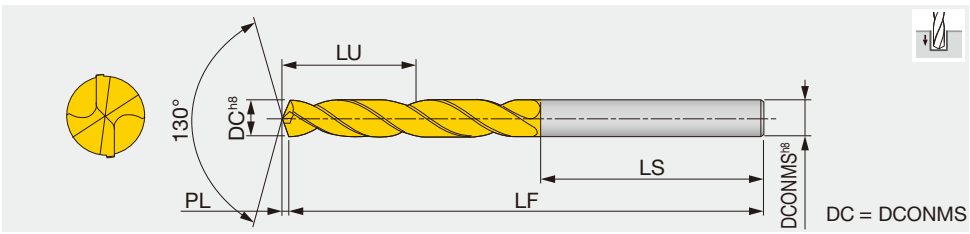
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DMX (M type)

Solid drill, L/D = 3, without coolant hole





Metric	DC	AH170	DCONMS	LU	LS	LF	PL
DMX030M	3	●	3	21.7	39	60	0.7
DMX034M	3.4	●	3.4	24.8	36	60	0.79
DMX037M	3.7	●	3.7	27.9	33	60	0.86
DMX039M	3.9	●	3.9	27.9	33	60	0.91
DMX040M	4	●	4	27.9	33	60	0.93
DMX041M	4.1	●	4.1	30	34	63	0.96
DMX043M	4.3	●	4.3	30	34	63	1
DMX048M	4.8	●	4.8	33.1	36	68	1.12
DMX050M	5	●	5	33.2	36	68	1.17
DMX051M	5.1	●	5.1	35.2	38	72	1.19
DMX055M	5.5	●	5.5	35.3	38	72	1.28

Metric	DC	AH170	DCONMS	LU	LS	LF	PL
DMX058M	5.8	●	5.8	37.4	38	74	1.35
DMX061M	6.1	●	6.1	42.4	40	81	1.42
DMX068M	6.8	●	6.8	44.6	40	83	1.59
DMX078M	7.8	●	7.8	49.8	42	90	1.82
DMX080M	8	●	8	49.9	42	90	1.87
DMX110M	11	●	11	70.6	46	114	2.56
DMX127M	12.7	●	12.7	81	59	137	2.96
DMX138M	13.8	●	13.8	89.2	61	147	3.22
DMX148M	14.8	●	14.8	94.5	62	153	3.45
DMX165M	16.5	●	16.5	105.9	65	167	3.85

• Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole. • Use a water-soluble cutting fluid.

● : Line up

STANDARD CUTTING CONDITIONS

See more information

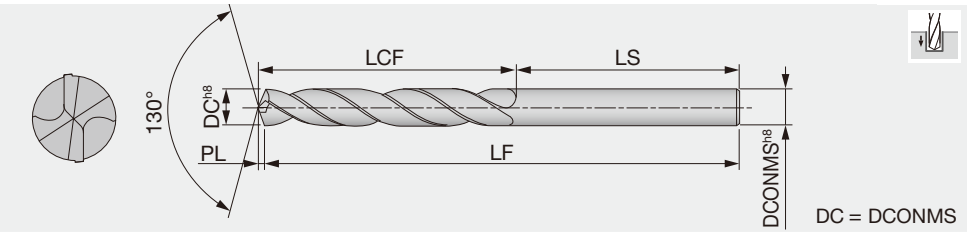
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SOLIDDRILL

DMX-FS

Solid drill, L/D = 2, without coolant hole





Metric	DC	MD20	LCF	LS	LF	PL
DMX0600FS	6	●	29.4	38	66	1.4
DMX0700FS	7	●	35.6	40	74	1.63
DMX1000FS	10	●	45.3	46	89	2.33

DC	Tolerance h8(mm)
6	0 ~ -0.018
7, 10	0 ~ -0.022

● : Line up

STANDARD CUTTING CONDITIONS

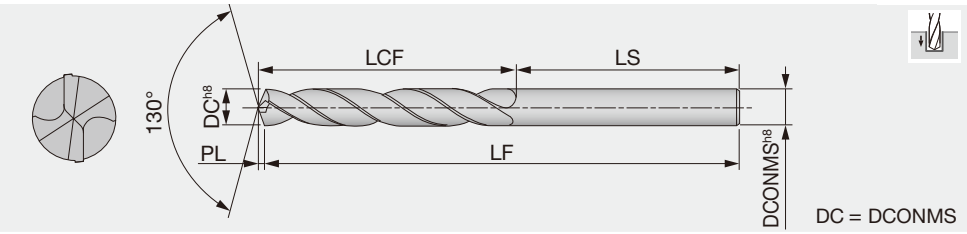
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DMX-FM

Solid drill, L/D = 3, without coolant hole





Metric	DC	MD20	LCF	LS	LF	PL
DMX0600FM	6	●	42.4	40	81	1.4
DMX1250FM	12.5	●	78.9	59	135	2.91

DC	Tolerance h8(mm)
6	0 ~ -0.018
12.5	0 ~ -0.027

● : Line up

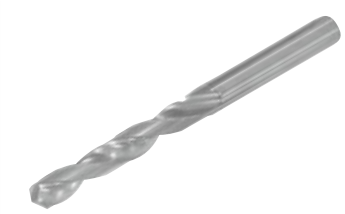
STANDARD CUTTING CONDITIONS

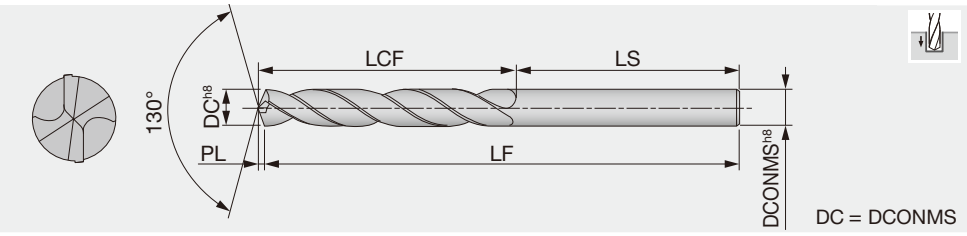
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DMX-FL

Solid drill, L/D = 5, without coolant hole





Metric	DC	MD20	LCF	LS	LF	PL
DMX0300FL	3	●	27.7	39	66	0.7
DMX0400FL	4	●	35.9	33	68	0.93
DMX0500FL	5	●	43.2	36	78	1.17
DMX0850FL	8.5	●	72	43	113	1.98

● : Line up

DC	Tolerance h8(mm)
3	0 ~ -0.014
4, 5	0 ~ -0.018
8.5	0 ~ -0.022

STANDARD CUTTING CONDITIONS

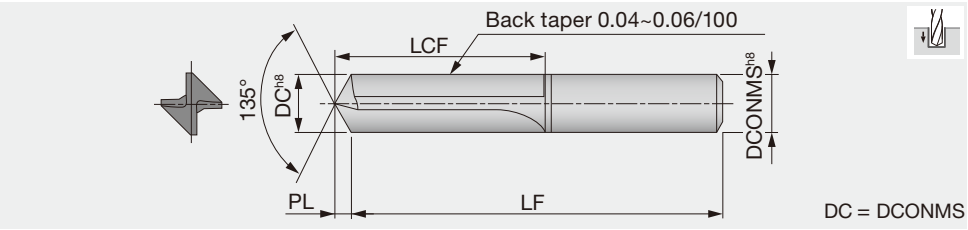
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FDS

Soliddrill, L/D = 3, without oil hole, for pre-tap hole drilling





For bolt holes

Metric	DC	G1F	DCONMS	LCF	LF	PL
FDS1100	11	●	11	57.3	120	2.28

● : Line up

DC	Tolerance h8(mm)
11	0 ~ -0.027

STANDARD CUTTING CONDITIONS

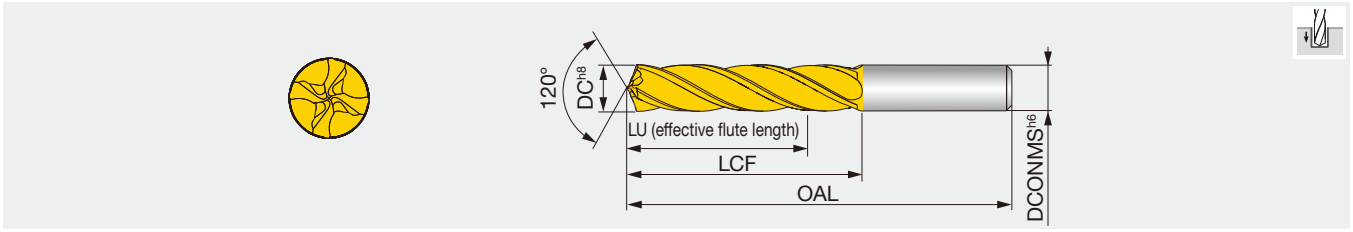
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SOLID 4 FLUTES DRILL

DSQ-E3

Solid drill, L/D = 3, DIN shank, without coolant hole, DIN shank



Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-018-06E3	0.236	●	0.236	0.945	1.181	3.150
DSQ068-021-07E3	0.268	●	0.276	1.063	1.339	3.307
DSQ085-026-09E3	0.335	●	0.354	1.339	1.693	3.661
DSQ090-027-09E3	0.354	●	0.354	1.417	1.772	3.740
DSQ100-030-10E3	0.394	●	0.394	1.575	1.969	3.937
DSQ105-032-11E3	0.413	●	0.433	1.654	2.087	4.843

Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ108-033-11E3	0.425	●	0.433	1.693	2.126	4.882
DSQ120-036-12E3	0.472	●	0.472	1.890	2.362	5.118
DSQ130-039-13E3	0.512	●	0.512	2.047	2.559	5.315
DSQ140-042-14E3	0.551	●	0.551	2.205	2.756	5.512
DSQ160-048-16E3	0.630	●	0.630	2.520	3.150	5.906

● : Line up

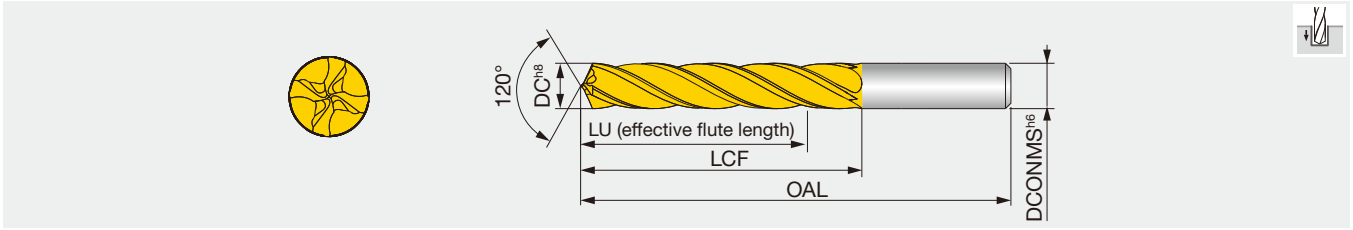
Metric	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-018-06E3	6	●	6	24	30	80
DSQ068-021-07E3	6.8	●	7	27	34	84
DSQ085-026-09E3	8.5	●	9	34	43	93
DSQ090-027-09E3	9	●	9	36	45	95
DSQ100-030-10E3	10	●	10	40	50	100
DSQ105-032-11E3	10.5	●	11	42	53	123

Metric	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ108-033-11E3	10.8	●	11	43	54	124
DSQ120-036-12E3	12	●	12	48	60	130
DSQ130-039-13E3	13	●	13	52	65	135
DSQ140-042-14E3	14	●	14	56	70	140
DSQ160-048-16E3	16	●	16	64	80	150

● : Line up

DSQ-E5

Solid drill, L/D = 5, DIN shank, without coolant hole



Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-030-06E5	0.236	●	0.236	1.417	1.654	3.622
DSQ068-034-07E5	0.268	●	0.276	1.614	1.890	3.858
DSQ085-043-09E5	0.335	●	0.354	2.008	2.362	4.331

Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ105-053-11E5	0.413	●	0.433	2.480	2.913	5.669
DSQ120-060-12E5	0.472	●	0.472	2.835	3.307	6.063
DSQ160-080-16E5	0.630	●	0.630	3.780	4.409	7.165

● : Line up

Metric	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-030-06E5	6	●	6	36	42	92
DSQ068-034-07E5	6.8	●	7	41	48	98
DSQ085-043-09E5	8.5	●	9	51	60	110

Metric	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ105-053-11E5	10.5	●	11	63	74	144
DSQ120-060-12E5	12	●	12	72	84	154
DSQ160-080-16E5	16	●	16	96	112	182

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) ø0.236" - ø0.390"	Feed: *f* (ipr) ø0.394" - ø0.630"
K	Gray cast irons Class 30, etc.	- 200	197 - 394	0.008 - 0.031	0.012 - 0.039
	Ductile cast irons 65-45-12, etc.	- 300	197 - 394	0.008 - 0.031	0.012 - 0.039

- The cutting parameters shown in the table are a starting guideline.
  Values should be varied depending on the power or rigidity of the machine.
  Optimum conditions should be selected depending on the actual chip control or damage on edges.
- When using the smaller diameter tools in each range, set the feed "f" to the lower values.
- When drilling with a depth deeper than L/D = 3, a pecking cycle or dwell operation should be considered depending on the actual chip control.

MEMO



TungSix-Drill

Indexable drill

		Inch	Metric
	**TUNGSIX-DRILL** Indexable drill with 6-corner inserts for high productivity ø0.750" - ø1.062" , ø20 mm - ø54 mm L/D = 2, 3, 4 J006 J070 -	✓	✓
	**TUNGDRILLTWISTED** Indexable drill with 4-corner inserts for various drilling applications ø0.500" - ø2.125" , ø12.5 mm - ø54 mm L/D = 2, 3, 4, 5 J006 J080 -	✓	✓
	**TUNGDRILLBIG** Large diameter drill with cartridges for TungSix-Drill and TungDrillTwisted inserts ø2.250" - ø3.157" , ø55 mm - ø80 mm L/D = 2.5 J006 J094 -	✓	✓

TUNGSIX-DRILL

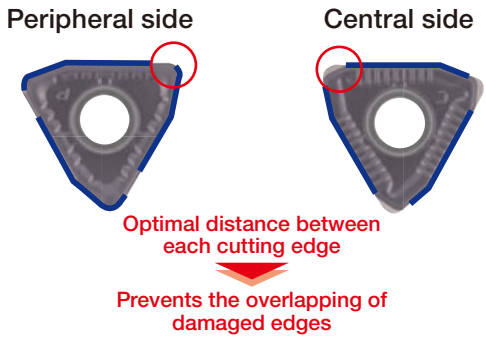


Indexable drill

6 cornered insert with high performance and high economical solution

Double-sided insert with 6-cutting edges

TungSixDrill is the first indexable drill in the world to adapt double-sided inserts with 6-cutting edges, reducing the insert consumption for our customers.

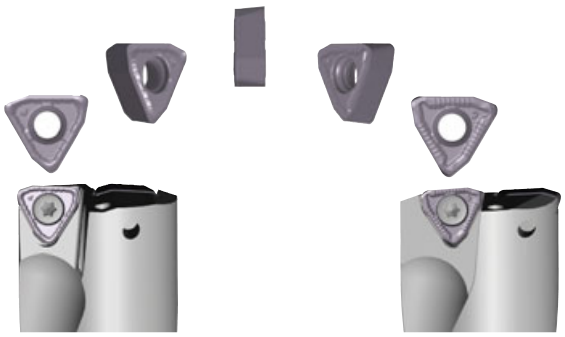


One insert type for both the central and peripheral pockets

One side has the central edge and other side has the peripheral edge.

Low cutting force even with double sided insert

The cutting forces are almost equal to competitors positive single sided inserts, especially at higher feed rates, thus complementing higher productivity.



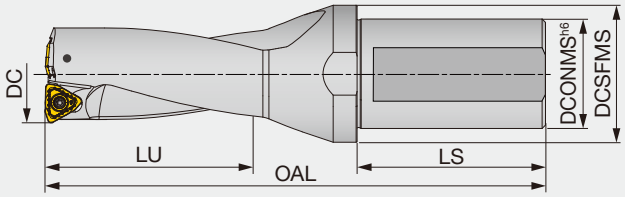
Reference pages: J071 - J079

TUNGSIX-DRILL

TDSU-F L/D=2

Indexable drill, L/D = 2, flat shank





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-02***	0.750	1.000	1.457	1.531	2.280	4.897	0.004	0.800	WWMU05X205R-D*
TDSU0812F-2	0.812	1.000	1.457	1.657	2.205	4.697	0.031	0.770	WWMU05X205R-D*
TDSU0875F-2	0.875	1.000	1.457	1.782	2.205	4.862	0.020	0.820	WWMU05X205R-D*
TDSU0937F-2	0.937	1.000	1.457	1.911	2.205	5.028	0.047	0.860	WWMU060306R-D*
TDSU1000F-2	1.000	1.000	1.457	2.035	2.205	5.197	0.026	0.920	WWMU060306R-D*
TDSU1062F-2	1.062	1.250	1.575	2.161	2.342	5.500	0.012	1.320	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-02	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)*
ø0.750" - ø1.062"	+ 0.008" / 0	+ 0.014" / 0

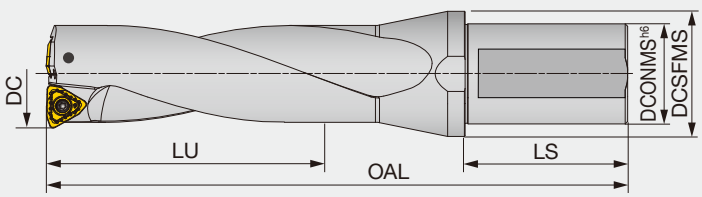
*Just for reference

Recommended clamping torque:
CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft

TDSU-F L/D=3

Indexable drill, L/D = 3, flat shank





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-03***	0.750	1.000	1.457	2.281	2.280	5.653	0.004	0.840	WWMU05X205R-D*
TDSU0812F-3	0.812	1.000	1.457	2.470	2.205	5.547	0.031	0.840	WWMU05X205R-D*
TDSU0875F-3	0.875	1.000	1.457	2.657	2.205	5.697	0.020	0.870	WWMU05X205R-D*
TDSU0937F-3	0.937	1.000	1.457	2.848	2.205	5.929	0.047	0.930	WWMU060306R-D*
TDSU1000F-3	1.000	1.000	1.457	3.035	2.205	6.157	0.026	1.010	WWMU060306R-D*
TDSU1062F-3	1.062	1.250	1.575	3.221	2.342	6.524	0.012	1.430	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-03	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)*
ø0.750" - ø1.062"	+ 0.008" / 0	+ 0.014" / 0

*Just for reference

Recommended clamping torque:
CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft

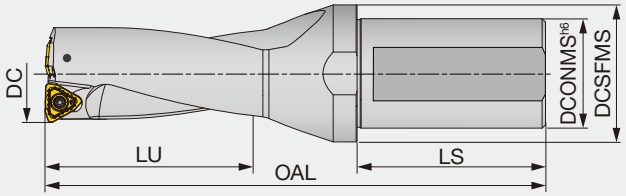
Reference pages: Inserts, Standard cutting conditions → J076 - J077

TUNGSIX-DRILL

TDS-F L/D=2

Indexable drill, L/D = 2, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-2	20	25	32	40.8	54	115.8	1	0.3	WWMU05X205R-D*
TDS205F25-2	20.5	25	32	41.8	54	117.3	0.9	0.3	WWMU05X205R-D*
TDS210F25-2	21	25	32	42.8	54	118.8	0.8	0.3	WWMU05X205R-D*
TDS215F25-2	21.5	25	32	43.8	54	119.8	0.6	0.3	WWMU05X205R-D*
TDS220F25-2	22	25	32	44.8	54	120.8	0.5	0.3	WWMU05X205R-D*
TDS225F25-2	22.5	25	37	45.8	54	122.3	0.4	0.3	WWMU05X205R-D*
TDS230F25-2	23	25	37	46.8	54	123.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-2	23.5	25	37	47.8	54	124.8	0.2	0.4	WWMU05X205R-D*
TDS240F25-2	24	25	37	48.9	54	125.9	1.2	0.4	WWMU060306R-D*
TDS245F25-2	24.5	25	37	49.9	54	127.4	1	0.4	WWMU060306R-D*
TDS250F25-2	25	25	37	50.9	54	128.9	0.8	0.4	WWMU060306R-D*
TDS255F25-2	25.5	25	37	51.9	54	130.4	0.6	0.4	WWMU060306R-D*
TDS260F25-2	26	25	37	52.9	54	131.9	0.5	0.4	WWMU060306R-D*
TDS270F32-2	27	32	40	54.9	59	138.9	0.3	0.6	WWMU060306R-D*
TDS280F32-2	28	32	40	57.1	59	142.1	1.3	0.6	WWMU08X408R-D*
TDS290F32-2	29	32	40	59.1	59	144.1	1.1	0.7	WWMU08X408R-D*
TDS300F32-2	30	32	40	61.1	59	147.1	0.8	0.7	WWMU08X408R-D*
TDS310F32-2	31	32	40	63.1	59	150.1	0.5	0.7	WWMU08X408R-D*
TDS320F32-2	32	32	40	65.1	59	152.1	0.2	0.8	WWMU08X408R-D*
TDS330F40-2	33	40	50	67.3	69	165.3	1.7	1.2	WWMU09X510R-D*
TDS340F40-2	34	40	50	69.3	69	168.3	1.4	1.2	WWMU09X510R-D*
TDS350F40-2	35	40	50	71.3	69	171.3	1.2	1.2	WWMU09X510R-D*
TDS360F40-2	36	40	50	73.3	69	174.3	0.9	1.3	WWMU09X510R-D*
TDS370F40-2	37	40	50	75.3	69	175.3	0.7	1.3	WWMU09X510R-D*
TDS380F40-2	38	40	50	77.3	69	178.3	0.4	1.3	WWMU09X510R-D*
TDS390F40-2	39	40	50	79.6	69	180.6	2.2	1.4	WWMU11X512R-D*
TDS400F40-2	40	40	50	81.6	69	183.6	1.9	1.4	WWMU11X512R-D*
TDS410F40-2	41	40	50	83.6	69	187.6	1.7	1.5	WWMU11X512R-D*
TDS420F40-2	42	40	55	85.6	69	189.6	1.5	1.6	WWMU11X512R-D*
TDS430F40-2	43	40	55	87.6	69	192.6	1.3	1.6	WWMU11X512R-D*
TDS440F40-2	44	40	55	89.6	69	194.6	1	1.7	WWMU11X512R-D*
TDS450F40-2	45	40	55	91.6	69	197.6	0.7	1.7	WWMU11X512R-D*
TDS460F40-2	46	40	55	93.6	69	200.6	0.4	1.8	WWMU11X512R-D*
TDS470F40-2	47	40	55	95.8	69	202.8	2.6	1.9	WWMU13X512R-D*
TDS480F40-2	48	40	55	97.8	69	205.8	2.4	1.9	WWMU13X512R-D*
TDS490F40-2	49	40	55	99.8	69	207.8	2.2	1.9	WWMU13X512R-D*
TDS500F40-2	50	40	55	101.8	69	210.8	2	2	WWMU13X512R-D*
TDS510F40-2	51	40	55	103.8	69	214.8	1.7	2.1	WWMU13X512R-D*
TDS520F40-2	52	40	55	105.8	69	216.8	1.5	2.2	WWMU13X512R-D*
TDS530F40-2	53	40	55	107.8	69	219.8	1.3	2.3	WWMU13X512R-D*
TDS540F40-2	54	40	55	109.8	69	221.8	1	2.4	WWMU13X512R-D*

SPARE PARTS

Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø20 - ø27	+ 0.2 / 0	+ 0.25 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.3 / 0

*Just for reference

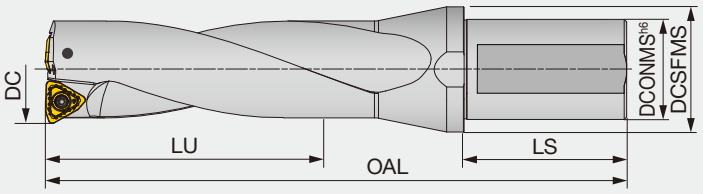
Recommended clamping torque: CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

Reference pages: Inserts, Standard cutting conditions → J076 - J077

TDS-F L/D=3

Indexable drill, L/D = 3, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-3	20	25	32	60.8	54	135.8	1	0.3	WWMU05X205R-D*
TDS205F25-3	20.5	25	32	62.3	54	136.8	0.9	0.3	WWMU05X205R-D*
TDS209F25-3 (1)	20.9	25	32	63.5	54	138.8	0.8	0.3	WWMU05X205R-D*
TDS210F25-3	21	25	32	63.8	54	138.8	0.8	0.4	WWMU05X205R-D*
TDS215F25-3	21.5	25	32	65.3	54	140.8	0.6	0.4	WWMU05X205R-D*
TDS220F25-3	22	25	32	66.8	54	141.8	0.5	0.4	WWMU05X205R-D*
TDSU0875F25-3 (2)	22.2	25	32	66.8	54	141.8	0.4	0.4	WWMU05X205R-D*
TDS225F25-3	22.5	25	37	68.3	54	144.8	0.4	0.4	WWMU05X205R-D*
TDS230F25-3	23	25	37	69.8	54	145.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-3	23.5	25	37	71.3	54	147.8	0.2	0.4	WWMU05X205R-D*
TDS239F25-3 (1)	23.9	25	37	72.6	54	149.9	1.2	0.4	WWMU060306R-D*
TDS240F25-3	24	25	37	72.9	54	149.9	1.2	0.4	WWMU060306R-D*
TDS245F25-3	24.5	25	37	74.4	54	151.9	1	0.5	WWMU060306R-D*
TDS250F25-3	25	25	37	75.9	54	153.9	0.8	0.5	WWMU060306R-D*
TDS255F25-3	25.5	25	37	77.4	54	154.9	0.6	0.5	WWMU060306R-D*
TDS260F25-3 (1)	26	25	37	78.9	54	156.9	0.5	0.5	WWMU060306R-D*
TDS264F32-3	26.4	32	40	80.1	59	163.4	0.4	0.6	WWMU060306R-D*
TDS265F32-3	26.5	32	40	80.4	59	163.4	0.4	0.6	WWMU060306R-D*
TDS270F32-3	27	32	40	81.9	59	164.9	0.3	0.6	WWMU060306R-D*
TDS275F32-3	27.5	32	40	83.1	59	168.1	0	0.6	WWMU08X408R-D*
TDS280F32-3	28	32	40	85.1	59	169.1	1.3	0.7	WWMU08X408R-D*
TDS285F32-3	28.5	32	40	86.1	59	171.1	1.1	0.7	WWMU08X408R-D*
TDSU1125F32-3 (2)	28.6	32	40	87.1	59	172.1	1.1	0.7	WWMU08X408R-D*
TDS290F32-3	29	32	40	88.1	59	172.1	1.1	0.7	WWMU08X408R-D*
TDS295F32-3	29.5	32	40	89.1	59	176.1	0.8	0.7	WWMU08X408R-D*
TDS300F32-3	30	32	40	91.1	59	177.1	0.8	0.8	WWMU08X408R-D*
TDS305F32-3	30.5	32	40	92.1	59	181.1	0.5	0.8	WWMU08X408R-D*
TDS310F32-3	31	32	40	94.1	59	181.1	0.5	0.8	WWMU08X408R-D*
TDSU1250F32-3 (2)	31.8	32	40	96.1	59	184.1	0.2	0.8	WWMU08X408R-D*
TDS320F32-3	32	32	40	97.1	59	184.1	0.2	0.9	WWMU08X408R-D*
TDS330F40-3	33	40	50	100.3	69	198.3	1.7	1.3	WWMU09X510R-D*
TDS340F40-3	34	40	50	103.3	69	201.3	1.4	1.3	WWMU09X510R-D*
TDS350F40-3	35	40	50	106.3	69	205.3	1.2	1.3	WWMU09X510R-D*
TDS360F40-3	36	40	50	109.3	69	209.3	0.9	1.4	WWMU09X510R-D*
TDS370F40-3	37	40	50	112.3	69	212.3	0.7	1.4	WWMU09X510R-D*
TDS380F40-3	38	40	50	115.3	69	216.3	0.4	1.5	WWMU09X510R-D*
TDS390F40-3	39	40	50	118.6	69	219.6	2.2	1.6	WWMU11X512R-D*
TDS400F40-3	40	40	50	121.6	69	223.6	1.9	1.6	WWMU11X512R-D*
TDS410F40-3	41	40	50	124.6	69	227.6	1.7	1.7	WWMU11X512R-D*
TDS420F40-3	42	40	55	127.6	69	230.6	1.5	1.8	WWMU11X512R-D*
TDS430F40-3	43	40	55	130.6	69	234.6	1.3	1.8	WWMU11X512R-D*
TDS440F40-3	44	40	55	133.6	69	237.6	1	1.9	WWMU11X512R-D*
TDS450F40-3	45	40	55	136.6	69	242.6	0.7	2	WWMU11X512R-D*
TDS460F40-3	46	40	55	139.6	69	246.6	0.4	2.1	WWMU11X512R-D*
TDS470F40-3	47	40	55	142.8	69	249.8	2.6	2.2	WWMU13X512R-D*
TDS480F40-3	48	40	55	145.8	69	253.8	2.4	2.3	WWMU13X512R-D*
TDS490F40-3	49	40	55	148.8	69	256.8	2.2	2.3	WWMU13X512R-D*
TDS500F40-3	50	40	55	151.8	69	260.8	2	2.4	WWMU13X512R-D*
TDS510F40-3	51	40	55	154.8	69	264.8	1.7	2.5	WWMU13X512R-D*
TDS520F40-3	52	40	55	157.8	69	267.8	1.5	2.6	WWMU13X512R-D*
TDS530F40-3	53	40	55	160.8	69	271.8	1.3	2.7	WWMU13X512R-D*
TDS540F40-3	54	40	55	163.8	69	274.8	1	2.9	WWMU13X512R-D*

SPARE PARTS





Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Recommended clamping torque: CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

(1) For pre thread hole: DC = 20.9 mm: M24x3, DC = 23.9 mm: M27x3, DC = 26.4 mm: M30x3.5
(2) For inch size: DC: 22.2 mm = 0.87", DC: 28.6 mm = 1.125", DC: 31.8 mm = 1.250"

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø20 - ø27	+ 0.2 / 0	+ 0.25 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.3 / 0

*Just for reference

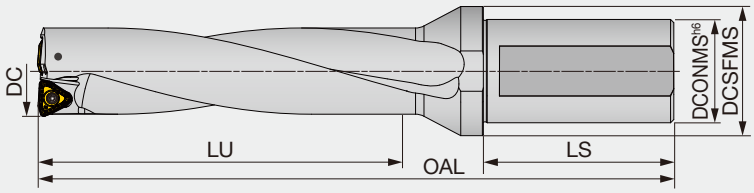
Reference pages: Inserts, Standard cutting conditions → J076 - J077

TUNGSIX-DRILL

TDSU-F L/D=4

Indexable drill, L/D = 4, flat shank





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-04***	0.750	1.000	1.457	3.031	2.280	6.401	0.004	0.880	WWMU05X205R-D*
TDSU0812F-4	0.812	1.000	1.457	3.283	2.343	6.457	0.031	0.950	WWMU05X205R-D*
TDSU0875F-4	0.875	1.000	1.457	3.531	2.343	6.708	0.016	1.010	WWMU05X205R-D*
TDSU0937F-4	0.938	1.000	1.457	3.787	2.343	7.003	0.047	1.100	WWMU060306R-D*
TDSU1000F-4	1.000	1.000	1.457	4.035	2.343	7.294	0.024	1.220	WWMU060306R-D*
TDSU1062F-4	1.063	1.250	1.575	4.287	2.343	7.585	0.012	1.640	WWMU060306R-D*
TDSU1125F-4	1.125	1.250	1.575	4.543	2.343	7.894	0.043	1.700	WWMU08X408R-D*
TDSU1187F-4	1.187	1.250	1.575	4.791	2.343	8.174	0.019	1.820	WWMU08X408R-D*
TDSU1250F-4	1.250	1.250	1.575	5.043	2.343	8.469	0.008	1.970	WWMU08X408R-D*
TDSU1312F-4	1.312	1.500	1.969	5.299	2.736	9.161	0.055	2.850	WWMU09X510R-D*
TDSU1375F-4	1.375	1.500	1.969	5.551	2.736	9.450	0.047	2.950	WWMU09X510R-D*
TDSU1437F-4	1.437	1.500	1.969	5.799	2.736	9.742	0.027	3.190	WWMU09X510R-D*
TDSU1500F-4	1.500	1.500	1.969	6.051	2.736	10.033	0.015	3.370	WWMU09X510R-D*
TDSU1562F-4	1.562	1.500	1.969	6.307	2.736	10.352	0.074	3.570	WWMU11X512R-D*
TDSU1625F-4	1.625	1.500	2.165	6.559	2.736	10.641	0.059	3.860	WWMU11X512R-D*
TDSU1687F-4	1.687	1.500	2.165	6.807	2.736	10.932	0.051	4.160	WWMU11X512R-D*
TDSU1750F-4	1.750	1.500	2.165	7.059	2.736	11.223	0.027	4.420	WWMU11X512R-D*
TDSU1812F-4	1.812	1.500	2.165	7.307	2.736	11.517	0.015	4.700	WWMU11X512R-D*
TDSU1875F-4	1.875	1.500	2.165	7.571	2.736	11.813	0.094	5.080	WWMU13X512R-D*
TDSU1937F-4	1.937	1.500	2.165	7.819	2.736	12.105	0.078	5.300	WWMU13X512R-D*
TDSU2000F-4	2.000	1.500	2.165	8.071	2.736	12.396	0.067	5.750	WWMU13X512R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS




Designation	Clamping screw	Wrench
TDSU-0750FS-04	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312... - TDSU1500...	CSTB-4	T-15D
TDSU1562... - TDSU2000...	CSTB-5	T-20D

Recommended clamping torque: CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft, CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)*
ø0.750" - ø2.000"	+ 0.008" / 0	+ 0.014" / 0

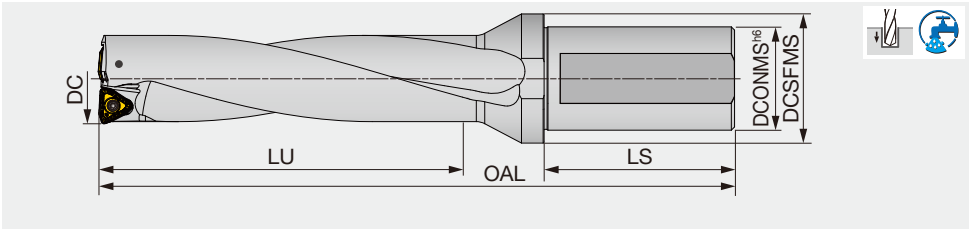
*Just for reference

Reference pages: Inserts, Standard cutting conditions → J076 - J077

TDS-F L/D=4

Indexable drill, L/D = 4, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-4	20	25	32	80.8	54	155.8	1	0.4	WWMU05X205R-D*
TDS205F25-4	20.5	25	32	82.8	54	157.8	0.9	0.4	WWMU05X205R-D*
TDS210F25-4	21	25	32	84.8	54	159.8	0.8	0.4	WWMU05X205R-D*
TDS215F25-4	21.5	25	32	86.8	54	161.8	0.6	0.4	WWMU05X205R-D*
TDS220F25-4	22	25	32	88.8	54	163.8	0.5	0.4	WWMU05X205R-D*
TDS225F25-4	22.5	25	37	90.8	54	166.3	0.4	0.4	WWMU05X205R-D*
TDS230F25-4	23	25	37	92.8	54	168.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-4	23.5	25	37	94.8	54	171.3	0.2	0.5	WWMU05X205R-D*
TDS240F25-4	24	25	37	96.9	54	173.9	1.2	0.5	WWMU060306R-D*
TDS245F25-4	24.5	25	37	98.9	54	176.4	1	0.5	WWMU060306R-D*
TDS250F25-4	25	25	37	100.9	54	178.9	0.8	0.5	WWMU060306R-D*
TDS255F25-4	25.5	25	37	102.9	54	180.9	0.6	0.6	WWMU060306R-D*
TDS260F25-4	26	25	37	104.9	54	182.9	0.5	0.5	WWMU060306R-D*
TDS270F32-4	27	32	40	108.9	59	191.9	0.3	0.7	WWMU060306R-D*
TDS280F32-4	28	32	40	113.1	59	197.1	1.3	0.8	WWMU08X408R-D*
TDS290F32-4	29	32	40	117.1	59	201.1	1.1	0.8	WWMU08X408R-D*
TDS300F32-4	30	32	40	121.1	59	207.1	0.8	0.9	WWMU08X408R-D*
TDS310F32-4	31	32	40	125.1	59	212.1	0.5	0.9	WWMU08X408R-D*
TDS320F32-4	32	32	40	129.1	59	216.1	0.2	1	WWMU08X408R-D*
TDS330F40-4	33	40	50	133.3	69	231.3	1.7	1.4	WWMU09X510R-D*
TDS340F40-4	34	40	50	137.3	69	235.3	1.4	1.4	WWMU09X510R-D*
TDS350F40-4	35	40	50	141.3	69	240.3	1.2	1.4	WWMU09X510R-D*
TDS360F40-4	36	40	50	145.3	69	245.3	0.9	1.5	WWMU09X510R-D*
TDS370F40-4	37	40	50	149.3	69	249.3	0.7	1.5	WWMU09X510R-D*
TDS380F40-4	38	40	50	153.3	69	254.3	0.4	1.7	WWMU09X510R-D*
TDS390F40-4	39	40	50	157.5	69	259	2.2	1.8	WWMU11X512R-D*
TDS400F40-4	40	40	50	161.5	69	264	1.9	1.8	WWMU11X512R-D*
TDS410F40-4	41	40	50	165.5	69	269	1.7	1.9	WWMU11X512R-D*
TDS420F40-4	42	40	55	169.5	69	273	1.5	2	WWMU11X512R-D*
TDS430F40-4	43	40	55	173.5	69	278	1.3	2	WWMU11X512R-D*
TDS440F40-4	44	40	55	177.5	69	282	1	2.1	WWMU11X512R-D*
TDS450F40-4	45	40	55	181.5	69	288	0.7	2.3	WWMU11X512R-D*
TDS460F40-4	46	40	55	185.5	69	293	0.4	2.4	WWMU11X512R-D*
TDS470F40-4	47	40	55	189.8	69	297.3	2.6	2.5	WWMU13X512R-D*
TDS480F40-4	48	40	55	193.8	69	302.3	2.4	2.7	WWMU13X512R-D*
TDS490F40-4	49	40	55	197.8	69	306.3	2.2	2.7	WWMU13X512R-D*
TDS500F40-4	50	40	55	201.8	69	311.3	2	2.8	WWMU13X512R-D*
TDS510F40-4	51	40	55	205.8	69	316.3	1.7	2.9	WWMU13X512R-D*
TDS520F40-4	52	40	55	209.8	69	320.3	1.5	3	WWMU13X512R-D*
TDS530F40-4	53	40	55	213.8	69	325.3	1.3	3.1	WWMU13X512R-D*
TDS540F40-4	54	40	55	217.8	69	329.3	1	3.4	WWMU13X512R-D*

SPARE PARTS





Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø20 - ø27	+ 0.2 / 0	+ 0.3 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.35 / 0

*Just for reference

Recommended clamping torque: CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

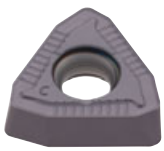
Reference pages: Inserts, Standard cutting conditions → J076 - J077

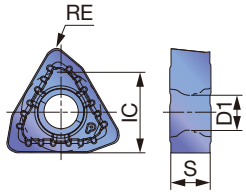
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Chip breakers	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	- 200 HB	First choice	DS	AH6030	525 - 820
			Wear resistance	DJ	AH9030	525 - 1050
	Carbon steels (C > 0.3) 1045, 1055, etc.	- 300 HB	First choice	DJ	AH9030	262 - 820
			Fracture resistance	DJ	AH3135	262 - 820
	Low alloy steels 5120, etc.	- 200 HB	First choice	DS	AH6030	525 - 820
			Wear resistance	DJ	AH9030	525 - 820
	Alloy steels 4140, 8620, etc.	- 300 HB	First choice	DJ	AH9030	262 - 656
			Fracture resistance	DJ	AH3135	262 - 656
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	- 200 HB	First choice	DS	AH6030	328 - 656
			Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	- 200 HB	First choice	DS	AH6030	328 - 656
			Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	-	First choice	DS	AH6030	262 - 394
			Fracture resistance	DJ	AH3135	262 - 394
K	Gray cast irons Class 25, Class 30, etc.	150 - 250 HB	First choice	DJ	AH9030	262 - 820
			Fracture resistance	DJ	AH3135	262 - 656
	Ductile cast irons 60-40-18, 60-55-06, etc.	150 - 250 HB	First choice	DJ	AH9030	262 - 656
			Fracture resistance	DJ	AH3135	262 - 492
N	Aluminum alloy	-	First choice	DS	AH6030	656 - 1312
S	Heat resistant alloy Inconel718, etc	- 40 HRC	First choice	DS	AH6030	66 - 197
			Fracture resistance	DJ	AH3135	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	DS	AH6030	131 - 394
			Fracture resistance	DJ	AH3135	131 - 394
H	Hardened steel Over 40HRC	- 50 HRC	First choice	DJ	AH9030	164 - 328
			Fracture resistance	DJ	AH3135	131 - 262

INSERT

DJ





P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

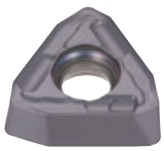
Designation	IC (in)	S (in)	Coated AH3135	Coated AH9030	D1 (in)	RE (in)	DCN (in)	DCX (in)
WWMU05X205R-DJ	0.228	0.094	●	●	0.098	0.020	0.787	0.925
WWMU060306R-DJ	0.264	0.114	●	●	0.118	0.024	0.941	1.063
WWMU08X408R-DJ	0.315	0.154	●	●	0.134	0.031	1.083	1.260
WWMU09X510R-DJ	0.382	0.193	●	●	0.173	0.039	1.299	1.496
WWMU11X512R-DJ	0.445	0.224	●	●	0.217	0.047	1.535	1.811
WWMU13X512R-DJ	0.512	0.224	●	●	0.217	0.047	1.850	2.126

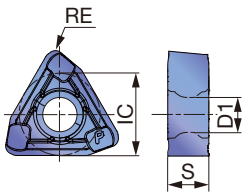
●: Line up

Feed: *f* (ipr)

L/D = 2, 3			L/D = 4		
DC (in)			DC (in)		
ø0.787" - ø1.083"	ø1.102" - ø1.496"	ø1.535" - ø2.126"	ø0.787" - ø1.063"	ø1.102" - ø1.496"	ø1.353" - ø2.126"
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

DS





P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials		

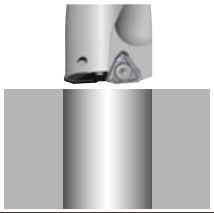
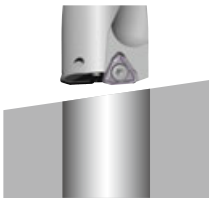
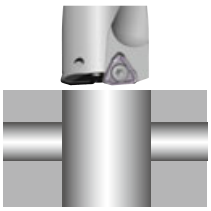
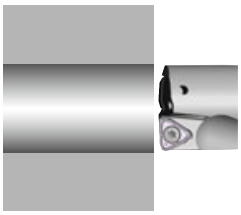
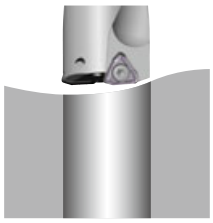
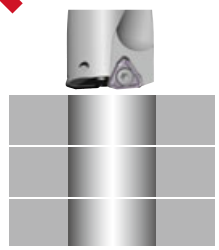
★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH6030				
WWMU05X205R-DS	0.228	0.094	●	0.098	0.020	0.787	0.925
WWMU060306R-DS	0.264	0.114	●	0.118	0.024	0.941	1.063
WWMU08X408R-DS	0.315	0.154	●	0.134	0.031	1.083	1.260
WWMU09X510R-DS	0.382	0.193	●	0.173	0.039	1.299	1.496
WWMU11X512R-DS	0.445	0.224	●	0.217	0.047	1.535	1.811
WWMU13X512R-DS	0.512	0.224	●	0.217	0.047	1.850	2.126

●: Line up

APPLICATION RANGE

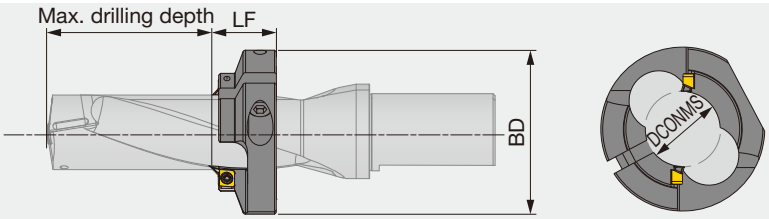
*In case of Interrupted cutting, feed should be decreased.

Feed *f* (ipr)	Refer to J076 - J077 page	0.002"	0.002"	0.002"
Application range	OK Plane surface 	OK Slant surface 	OK Cross hole 	OK Plunging 
Feed *f* (ipr)	**0.004"**	**0.002"**	**Disapprove**	**Disapprove**
Application range	OK Boring 	OK Round surface 	Stacked plates 	Back boring 

TUNGSIX-DRILL

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	Max. drilling depth		
					L/D = 2	L/D = 3	L/D = 4
TDXCF210L25	0.791	1.929	0.984	TDSU0812...	0.700	1.512	-
TDXCF230L25	0.870	1.929	0.984	TDSU0875...	0.825	1.700	-
TDXCF240L25	0.909	1.929	0.984	TDSU0937...	0.950	1.887	-
TDXCF260L30	0.982	2.520	1.181	TDSU1000...	0.878	1.878	-
TDXCF270L30	1.020	2.520	1.181	TDSU1062...	1.003	2.065	-
TDXCF290L30	1.098	2.520	1.181	TDSU1125...	-	-	3.486
TDXCF300L30	1.138	2.520	1.181	TDSU1187...	-	-	3.726
TDXCF320L30	1.217	2.520	1.181	TDSU1250...	-	-	3.976
TDXCF340L30	1.291	2.520	1.181	TDSU1312...	-	-	4.226
TDXCF350L30	1.331	2.520	1.181	TDSU1375...	-	-	4.476
TDXCF370L30	1.409	3.346	1.181	TDSU1437...	-	-	4.726
TDXCF380L30	1.449	3.346	1.181	TDSU1500...	-	-	4.977
TDXCF400L30	1.528	3.346	1.181	TDSU1562...	-	-	5.245
TDXCF410L30	1.567	3.346	1.181	TDSU1625...	-	-	5.496
TDXCF430L30	1.638	3.346	1.181	TDSU1687...	-	-	5.746
TDXCF450L30	1.717	3.346	1.181	TDSU1750...	-	-	5.998
TDXCF460L30	1.756	3.346	1.181	TDSU1812...	-	-	6.248
TDXCF480L30	1.835	3.346	1.181	TDSU1875...	-	-	6.496
TDXCF500L30	1.913	3.346	1.181	TDSU1937...	-	-	6.746
TDXCF510L30	1.953	3.346	1.181	TDSU2000...	-	-	6.996

SPARE PARTS



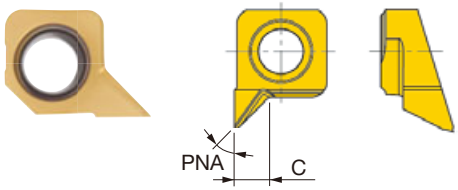



Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF210 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 2.58 lb·ft

INSERT

XHGX-45A



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C (in)	Coated GH130
XHGX090700R-45A	45°	0.098	●

●: Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

② Place the inserts, and tighten the insert screw lightly.

③ Adjust the ring position with a presetter, height gauge, or vernier caliper, and securely tighten the ring screw, then the insert screw.



Match the positions of flutes on drill and ring.

(Inserts will be automatically set to the right positions.)

The cutting edge of the insert is in the ring flute.



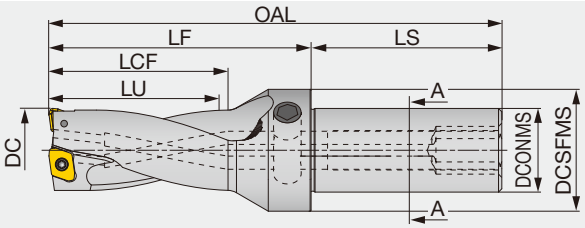
The flutes on drill and ring do not match.

TUNGDRILLTWISTED

TDXU-FS L/D=2

Indexable drill, L/D = 2, flat shank with side port







A - A section

Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-02	0.500	0.750	1.250	1.015	1.015	1.130	2.019	4.034	0.030	0.440	XPMT040104R-D*
TDXU-0531FS-02	0.531	0.750	1.250	1.077	1.077	1.200	2.089	4.104	0.024	0.450	XPMT040104R-D*
TDXU-0562FS-02	0.562	0.750	1.250	1.139	1.139	1.260	2.152	4.167	0.018	0.450	XPMT040104R-D*
TDXU-0625FS-02	0.625	0.750	1.250	1.271	1.271	1.390	2.283	4.304	0.026	0.460	XPMT050204R-D*
TDXU-0687FS-02	0.687	1.000	1.457	1.393	1.393	1.510	2.471	4.770	0.048	0.790	XPMT06X308R-D*
TDXU-0750FS-02	0.75	1.000	1.457	1.519	1.519	1.640	2.591	4.890	0.027	0.820	XPMT06X308R-D*
TDXU-0812FS-02	0.812	1.000	1.457	1.643	1.643	1.760	2.729	5.028	0.015	0.850	XPMT06X308R-D*
TDXU-0875FS-02	0.875	1.000	1.457	1.773	1.773	1.890	2.849	5.152	0.045	0.880	XPMT07H308R-D*
TDXU-0937FS-02	0.937	1.000	1.457	1.897	1.897	2.020	2.991	5.294	0.029	0.930	XPMT07H308R-D*
TDXU-1000FS-02	1.000	1.000	1.457	2.023	2.023	2.140	3.111	5.414	0.013	0.960	XPMT07H308R-D*
TDXU-1062FS-02	1.062	1.250	1.575	2.153	2.153	2.270	3.401	5.710	0.059	1.300	XPMT08T308R-D*
TDXU-1125FS-02	1.125	1.250	1.575	2.279	2.279	2.400	3.541	5.850	0.043	1.380	XPMT08T308R-D*
TDXU-1187FS-02	1.187	1.250	1.575	2.403	2.403	2.520	3.658	5.967	0.026	1.450	XPMT08T308R-D*
TDXU-1250FS-02	1.250	1.250	1.575	2.529	2.529	2.650	3.783	6.092	0.010	1.520	XPMT08T308R-D*
TDXU-1312FS-02	1.312	1.500	1.969	2.667	2.667	2.790	4.013	6.744	0.088	2.250	XPMT110412R-D*
TDXU-1375FS-02	1.375	1.500	1.969	2.793	2.793	2.910	4.155	6.886	0.072	2.320	XPMT110412R-D*
TDXU-1437FS-02	1.437	1.500	1.969	2.917	2.917	3.040	4.272	7.003	0.055	2.340	XPMT110412R-D*
TDXU-1500FS-02	1.500	1.500	1.969	3.043	3.043	3.160	4.413	7.144	0.038	2.530	XPMT110412R-D*
TDXU-1562FS-02	1.562	1.500	1.969	3.167	3.167	3.290	4.553	7.284	0.022	2.540	XPMT110412R-D*
TDXU-1625FS-02	1.625	1.500	2.165	3.311	3.311	3.430	4.728	7.477	0.128	2.850	XPMT150512R-D*
TDXU-1687FS-02	1.687	1.500	2.165	3.435	3.435	3.550	4.868	7.617	0.115	3.020	XPMT150512R-D*
TDXU-1750FS-02	1.750	1.500	2.165	3.561	3.561	3.680	4.986	7.735	0.097	3.140	XPMT150512R-D*
TDXU-1812FS-02	1.812	1.500	2.165	3.685	3.685	3.810	5.128	7.877	0.082	3.300	XPMT150512R-D*
TDXU-1875FS-02	1.875	1.500	2.165	3.811	3.811	3.930	5.251	8.000	0.063	3.490	XPMT150512R-D*
TDXU-1937FS-02	1.937	1.500	2.165	3.935	3.935	4.050	5.385	8.134	0.049	3.610	XPMT150512R-D*
TDXU-2000FS-02	2.000	1.500	2.165	4.061	4.061	4.180	5.510	8.259	0.030	3.820	XPMT150512R-D*
TDXU-2125FS-02	2.125	1.500	2.165	4.311	4.311	4.430	5.790	8.548	-	4.240	XPMT150512R-D*

** For offsetting on lathe

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)
ø0.500" - ø0.625"	+ 0.004" / 0	+ 0.010" / 0
ø0.687" - ø2.125"	+ 0.008" / 0	+ 0.012" / 0

*Just for reference

SPARE PARTS






Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-02	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

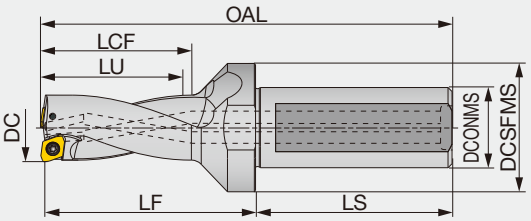
Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb·ft, CSPB-2.2= 0.74 lb·ft, CSPB-2.5= 0.96 lb·ft, CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft, CSTB-5= 3.69 lb·ft

Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TDX-F L/D=2

Indexable drill, L/D = 2, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-2	12.5	20	25	25.4	49	28.4	41	90.4	0.8	0.2	XPMT040104R-D*
TDX130F20-2	13	20	25	26.4	49	29.4	42	91.4	0.7	0.2	XPMT040104R-D*
TDX135F20-2	13.5	20	25	27.4	49	30.4	43	92.4	0.6	0.2	XPMT040104R-D*
TDX140F20-2	14	20	25	28.4	49	31.4	44	93.4	0.5	0.2	XPMT040104R-D*
TDX145F20-2	14.5	20	25	29.4	49	32.4	46	95.4	0.4	0.2	XPMT040104R-D*
TDX150F20-2	15	20	25	30.5	49	33.5	47	96.5	0.9	0.2	XPMT050204R-D*
TDX155F20-2	15.5	20	32	31.5	49	34.5	49	98.5	0.8	0.2	XPMT050204R-D*
TDX160F20-2	16	20	32	32.5	49	35.5	51	100.5	0.6	0.2	XPMT050204R-D*
TDX165F20-2	16.5	20	32	33.5	49	36.5	52	101.5	0.5	0.2	XPMT050204R-D*
TDX170F20-2	17	20	32	34.5	49	37.5	53	102.5	0.4	0.2	XPMT050204R-D*
TDX175F25-2	17.5	25	32	35.5	54	38.5	55	109.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-2	18	25	32	36.5	54	39.5	56	110.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-2	18.5	25	32	37.5	54	40.5	57	111.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-2	19	25	32	38.5	54	41.5	58	112.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-2	19.5	25	32	39.5	54	42.5	60	114.5	0.7	0.3	XPMT06X308R-D*
TDX200F25-2	20	25	32	40.5	54	45.5	61	115.5	0.5	0.3	XPMT06X308R-D*
TDX205F25-2	20.5	25	32	41.5	54	46.5	62.5	117	0.4	0.3	XPMT06X308R-D*
TDX210F25-2	21	25	32	42.5	54	47.5	64	118.5	0.3	0.3	XPMT06X308R-D*
TDX215F25-2	21.5	25	32	43.5	54	48.5	65	119.5	0.2	0.3	XPMT06X308R-D*
TDX220F25-2	22	25	32	44.6	54	49.6	66	120.6	1.2	0.3	XPMT07H308R-D*
TDX225F25-2	22.5	25	37	45.6	54	50.6	67.5	122.1	1.1	0.3	XPMT07H308R-D*
TDX230F25-2	23	25	37	46.6	54	51.6	69	123.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-2	23.5	25	37	47.6	54	52.6	70	124.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-2	24	25	37	48.6	54	53.6	71	125.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-2	24.5	25	37	49.6	54	54.6	72.5	127.1	0.5	0.4	XPMT07H308R-D*
TDX250F25-2	25	25	37	50.6	54	55.6	74	128.6	0.4	0.4	XPMT07H308R-D*
TDX255F25-2	25.5	25	37	51.6	54	56.6	75.5	130.1	0.3	0.4	XPMT07H308R-D*
TDX260F25-2	26	25	37	52.6	54	57.6	77	131.6	0.2	0.4	XPMT07H308R-D*
TDX270F32-2	27	32	40	54.7	59	59.7	79	138.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-2	28	32	40	56.7	59	61	82.3	142	1.2	0.6	XPMT08T308R-D*
TDX290F32-2	29	32	40	58.7	59	63	84.3	144	1	0.7	XPMT08T308R-D*
TDX300F32-2	30	32	40	60.7	59	65	87.3	147	0.7	0.7	XPMT08T308R-D*
TDX310F32-2	31	32	40	62.7	59	67	90.3	150	0.4	0.7	XPMT08T308R-D*
TDX320F32-2	32	32	40	64.7	59	69	92.3	152	0.2	0.8	XPMT08T308R-D*
TDX330F40-2	33	40	50	67.1	69	71.7	95.6	165.7	2.3	1.2	XPMT110412R-D*
TDX340F40-2	34	40	50	69.1	69	73.7	98.6	168.7	2.1	1.2	XPMT110412R-D*
TDX350F40-2	35	40	50	71.1	69	75.7	101.6	171.7	1.8	1.2	XPMT110412R-D*
TDX360F40-2	36	40	50	73.1	69	77.7	104.6	174.7	1.5	1.3	XPMT110412R-D*
TDX370F40-2	37	40	50	75.1	69	79.7	105.6	175.7	1.3	1.3	XPMT110412R-D*
TDX380F40-2	38	40	50	77.1	69	81.7	108.6	178.7	1	1.3	XPMT110412R-D*
TDX390F40-2	39	40	50	79.1	69	83.7	110.6	180.7	0.7	1.4	XPMT110412R-D*
TDX400F40-2	40	40	50	81.1	69	85.7	113.6	183.7	0.5	1.4	XPMT110412R-D*
TDX410F40-2	41	40	50	83.1	69	87.7	117.6	187.7	0.2	1.5	XPMT110412R-D*
TDX420F40-2	42	40	55	85.6	69	90.6	120	190.6	3.1	1.6	XPMT150512R-D*
TDX430F40-2	43	40	55	87.6	69	92.6	123	193.6	2.9	1.6	XPMT150512R-D*
TDX440F40-2	44	40	55	89.6	69	94.6	125	195.6	2.6	1.7	XPMT150512R-D*
TDX450F40-2	45	40	55	91.6	69	96.6	128	198.6	2.3	1.7	XPMT150512R-D*
TDX460F40-2	46	40	55	93.6	69	98.6	131	201.6	2.1	1.8	XPMT150512R-D*
TDX470F40-2	47	40	55	95.6	69	100.6	133	203.6	1.8	1.9	XPMT150512R-D*
TDX480F40-2	48	40	55	97.6	69	102.6	136	206.6	1.5	1.9	XPMT150512R-D*
TDX490F40-2	49	40	55	99.6	69	104.6	138	208.6	1.3	1.9	XPMT150512R-D*
TDX500F40-2	50	40	55	101.6	69	106.6	141	211.6	1	2	XPMT150512R-D*
TDX510F40-2	51	40	55	103.6	69	108.6	145	215.6	0.7	2.1	XPMT150512R-D*
TDX520F40-2	52	40	55	105.6	69	110.6	147	217.6	0.5	2.2	XPMT150512R-D*
TDX530F40-2	53	40	55	107.6	69	112.6	150	220.6	-	2.3	XPMT150512R-D*
TDX540F40-2	54	40	55	109.6	69	114.6	152	222.6	-	2.4	XPMT150512R-D*

SPARE PARTS





Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.3 / 0

Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.7 N·m, CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

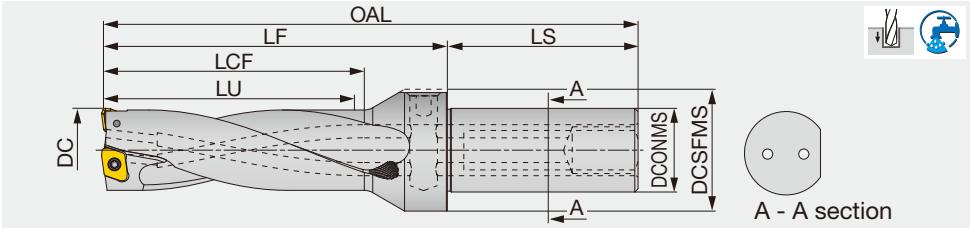
Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TUNGDRILLTWISTED

TDXU-F L/D=3

Indexable drill, L/D = 3, flat shank with side port





Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-03	0.500	0.750	1.250	1.515	2.000	1.630	2.519	4.534	0.030	0.450	XPMT040104R-D*
TDXU-0531FS-03	0.531	0.750	1.250	1.608	2.000	1.730	2.620	4.635	0.024	0.460	XPMT040104R-D*
TDXU-0562FS-03	0.562	0.750	1.250	1.701	2.000	1.820	2.715	4.730	0.018	0.470	XPMT040104R-D*
TDXU-0625FS-03	0.625	0.750	1.250	1.896	2.000	2.020	2.909	4.930	0.026	0.490	XPMT050204R-D*
TDXU-0687FS-03	0.687	1.000	1.457	2.080	2.280	2.200	3.159	5.458	0.048	0.830	XPMT06X308R-D*
TDXU-0750FS-03	0.750	1.000	1.457	2.269	2.280	2.390	3.341	5.640	0.027	0.870	XPMT06X308R-D*
TDXU-0812FS-03	0.812	1.000	1.457	2.455	2.280	2.580	3.542	5.841	0.015	0.910	XPMT06X308R-D*
TDXU-0875FS-03	0.875	1.000	1.457	2.648	2.280	2.770	3.724	6.027	0.045	0.950	XPMT07H308R-D*
TDXU-0937FS-03	0.937	1.000	1.457	2.834	2.280	2.960	3.929	6.232	0.029	1.030	XPMT07H308R-D*
TDXU-1000FS-03	1.000	1.000	1.457	3.023	2.280	3.210	4.111	6.314	0.013	1.050	XPMT07H308R-D*
TDXU-1062FS-03	1.062	1.250	1.575	3.215	2.280	3.340	4.464	6.773	0.059	1.430	XPMT08T308R-D*
TDXU-1125FS-03	1.125	1.250	1.575	3.404	2.280	3.520	4.666	6.975	0.043	1.520	XPMT08T308R-D*
TDXU-1187FS-03	1.187	1.250	1.575	3.590	2.280	3.710	4.845	7.154	0.026	1.620	XPMT08T308R-D*
TDXU-1250FS-03	1.250	1.250	1.575	3.779	2.280	3.900	5.033	7.342	0.010	1.740	XPMT08T308R-D*
TDXU-1312FS-03	1.312	1.500	1.969	3.979	2.688	4.100	5.325	8.056	0.088	2.510	XPMT110412R-D*
TDXU-1375FS-03	1.375	1.500	1.969	4.168	2.688	4.290	5.530	8.261	0.072	2.610	XPMT110412R-D*
TDXU-1437FS-03	1.437	1.500	1.969	4.354	2.688	4.470	5.709	8.440	0.055	2.630	XPMT110412R-D*
TDXU-1500FS-03	1.500	1.500	1.969	4.543	2.688	4.660	5.913	8.644	0.038	2.860	XPMT110412R-D*
TDXU-1562FS-03	1.562	1.500	1.969	4.729	2.688	4.850	6.115	8.846	0.022	2.920	XPMT110412R-D*
TDXU-1625FS-03	1.625	1.500	2.165	4.936	2.688	5.050	6.353	9.102	0.128	3.330	XPMT150512R-D*
TDXU-1687FS-03	1.687	1.500	2.165	5.122	2.688	5.240	6.555	9.304	0.115	3.570	XPMT150512R-D*
TDXU-1750FS-03	1.750	1.500	2.165	5.311	2.688	5.430	6.736	9.485	0.097	3.740	XPMT150512R-D*
TDXU-1812FS-03	1.812	1.500	2.165	5.497	2.688	5.620	6.941	9.690	0.082	3.950	XPMT150512R-D*
TDXU-1875FS-03	1.875	1.500	2.165	5.686	2.688	5.800	7.126	9.875	0.063	4.220	XPMT150512R-D*
TDXU-1937FS-03	1.937	1.500	2.165	5.872	2.688	5.990	7.322	10.071	0.049	4.410	XPMT150512R-D*
TDXU-2000FS-03	2.000	1.500	2.165	6.061	2.688	6.180	7.510	10.259	0.030	4.60	XPMT150512R-D*
TDXU-2125FS-03	2.125	1.500	2.165	6.436	2.688	6.550	7.915	10.664	-	5.310	XPMT150512R-D*

** For offsetting on lathe

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)*
ø0.500" - ø0.625"	+ 0.004" / 0	+ 0.010" / 0
ø0.687" - ø2.125"	+ 0.008" / 0	+ 0.012" / 0

*Just for reference

SPARE PARTS






Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-03	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687-TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

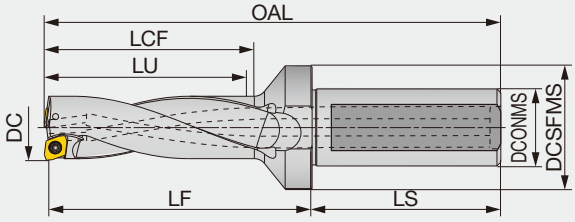
Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.52 lb·ft, CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft, CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TDX-F L/D=3

Indexable drill, L/D = 3, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-3	12.5	20	25	37.9	49	40.9	53	102.4	0.8	0.2	XPMT040104R-D*
TDX130F20-3	13	20	25	39.4	49	42.4	55	104.4	0.7	0.2	XPMT040104R-D*
TDX135F20-3	13.5	20	25	40.9	49	43.9	56	105.4	0.6	0.2	XPMT040104R-D*
TDX140F20-3	14	20	25	42.4	49	45.4	58	107.4	0.5	0.2	XPMT040104R-D*
TDX145F20-3	14.5	20	25	43.9	49	46.9	60	109.4	0.4	0.2	XPMT040104R-D*
TDX150F20-3	15	20	25	45.4	49	48.4	62	111.4	0.9	0.2	XPMT050204R-D*
TDX155F20-3	15.5	20	32	46.9	49	49.9	64	113.4	0.8	0.2	XPMT050204R-D*
TDX160F20-3	16	20	32	48.4	49	51.4	66	115.4	0.6	0.2	XPMT050204R-D*
TDX165F20-3	16.5	20	32	49.9	49	52.9	68	117.4	0.5	0.2	XPMT050204R-D*
TDX170F20-3	17	20	32	51.4	49	54.4	69	118.4	0.4	0.2	XPMT050204R-D*
TDX175F25-3	17.5	25	32	53	54	56	72	126.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-3	18	25	32	54.5	54	57.5	73	127.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-3	18.5	25	32	56	54	59	75	129.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-3	19	25	32	57.5	54	60.5	76	130.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-3	19.5	25	32	59	54	62	79	133.5	0.7	0.3	XPMT06X308R-D*
TDX200F25-3	20	25	32	60.5	54	65.5	81	135.5	0.5	0.3	XPMT06X308R-D*
TDX205F25-3	20.5	25	32	62	54	67	82	136.5	0.4	0.3	XPMT06X308R-D*
TDX210F25-3	21	25	32	63.5	54	68.5	84	138.5	0.3	0.3	XPMT06X308R-D*
TDX215F25-3	21.5	25	32	65	54	70	86	140.5	0.2	0.4	XPMT06X308R-D*
TDX220F25-3	22	25	32	66.6	54	71.6	87	141.6	1.2	0.4	XPMT07H308R-D*
TDX225F25-3	22.5	25	37	68.1	54	73.1	90	144.6	1.1	0.4	XPMT07H308R-D*
TDX230F25-3	23	25	37	69.6	54	74.6	91	145.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-3	23.5	25	37	71.1	54	76.1	93	147.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-3	24	25	37	72.6	54	77.6	95	149.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-3	24.5	25	37	74.1	54	79.1	97	151.6	0.5	0.5	XPMT07H308R-D*
TDX250F25-3	25	25	37	75.6	54	80.6	99	153.6	0.4	0.5	XPMT07H308R-D*
TDX255F25-3	25.5	25	37	77.1	54	82.1	100	154.6	0.3	0.5	XPMT07H308R-D*
TDX260F25-3	26	25	37	78.6	54	83.6	102	156.6	0.2	0.5	XPMT07H308R-D*
TDX270F32-3	27	32	40	81.7	59	86.7	105	164.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-3	28	32	40	84.7	59	89	109.3	169	1.2	0.7	XPMT08T308R-D*
TDX290F32-3	29	32	40	87.7	59	92	112.3	172	1	0.7	XPMT08T308R-D*
TDX300F32-3	30	32	40	90.7	59	95	117.3	177	0.7	0.8	XPMT08T308R-D*
TDX310F32-3	31	32	40	93.7	59	98	121.3	181	0.4	0.8	XPMT08T308R-D*
TDX320F32-3	32	32	40	96.7	59	101	124.3	184	0.2	0.9	XPMT08T308R-D*
TDX330F40-3	33	40	50	100.1	69	104.7	128.6	198.7	2.3	1.3	XPMT110412R-D*
TDX340F40-3	34	40	50	103.1	69	107.7	131.6	201.7	2.1	1.3	XPMT110412R-D*
TDX350F40-3	35	40	50	106.1	69	110.7	135.6	205.7	1.8	1.3	XPMT110412R-D*
TDX360F40-3	36	40	50	109.1	69	113.7	139.6	209.7	1.5	1.4	XPMT110412R-D*
TDX370F40-3	37	40	50	112.1	69	116.7	142.6	212.7	1.3	1.4	XPMT110412R-D*
TDX380F40-3	38	40	50	115.1	69	119.7	146.6	216.7	1	1.5	XPMT110412R-D*
TDX390F40-3	39	40	50	118.1	69	122.7	149.6	219.7	0.7	1.6	XPMT110412R-D*
TDX400F40-3	40	40	50	121.1	69	125.7	153.6	223.7	0.5	1.6	XPMT110412R-D*
TDX410F40-3	41	40	50	124.1	69	128.7	157.6	227.7	0.2	1.7	XPMT110412R-D*
TDX420F40-3	42	40	55	127.6	69	132.6	161	231.6	3.1	1.8	XPMT150512R-D*
TDX430F40-3	43	40	55	130.6	69	135.6	165	235.6	2.9	1.8	XPMT150512R-D*
TDX440F40-3	44	40	55	133.6	69	138.6	168	238.6	2.6	1.9	XPMT150512R-D*
TDX450F40-3	45	40	55	136.6	69	141.6	173	243.6	2.3	2	XPMT150512R-D*
TDX460F40-3	46	40	55	139.6	69	144.6	177	247.6	2.1	2.1	XPMT150512R-D*
TDX470F40-3	47	40	55	142.6	69	147.6	180	250.6	1.8	2.2	XPMT150512R-D*
TDX480F40-3	48	40	55	145.6	69	150.6	184	254.6	1.5	2.3	XPMT150512R-D*
TDX490F40-3	49	40	55	148.6	69	153.6	187	257.6	1.3	2.3	XPMT150512R-D*
TDX500F40-3	50	40	55	151.6	69	156.6	191	261.6	1	2.4	XPMT150512R-D*
TDX510F40-3	51	40	55	154.6	69	159.6	195	265.6	0.7	2.5	XPMT150512R-D*
TDX520F40-3	52	40	55	157.6	69	162.6	198	268.6	0.5	2.6	XPMT150512R-D*
TDX530F40-3	53	40	55	160.6	69	165.6	202	272.6	-	2.7	XPMT150512R-D*
TDX540F40-3	54	40	55	163.6	69	168.6	205	275.6	-	2.9	XPMT150512R-D*

SPARE PARTS

Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.3 / 0

*Just for reference

Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.7 N·m, CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

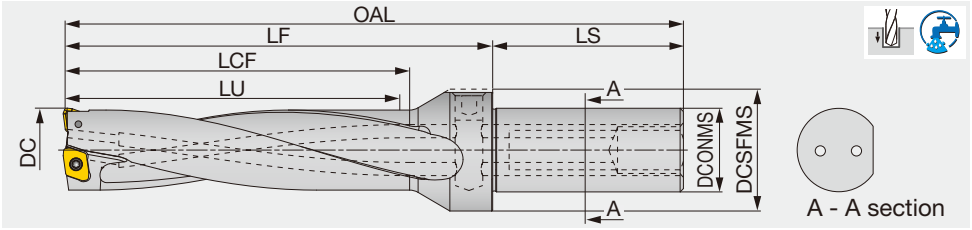
Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TUNGDRILLTWISTED

TDXU-F L/D=4

Indexable drill, L/D = 4, flat shank with side port





Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-04	0.500	0.750	1.250	2.015	2.000	2.130	3.019	5.034	0.030	0.460	XPMT040104R-D*
TDXU-0531FS-04	0.531	0.750	1.250	2.139	2.000	2.260	3.151	5.166	0.024	0.480	XPMT040104R-D*
TDXU-0562FS-04	0.562	0.750	1.250	2.263	2.000	2.390	3.278	5.293	0.018	0.490	XPMT040104R-D*
TDXU-0625FS-04	0.625	0.750	1.250	2.521	2.000	2.640	3.535	5.556	0.026	0.520	XPMT050204R-D*
TDXU-0687FS-04	0.687	1.000	1.457	2.767	2.280	2.890	3.847	6.146	0.048	0.860	XPMT06X308R-D*
TDXU-0750FS-04	0.750	1.000	1.457	3.019	2.280	3.140	4.091	6.390	0.027	0.920	XPMT06X308R-D*
TDXU-0812FS-04	0.812	1.000	1.457	3.267	2.280	3.390	4.355	6.654	0.015	0.960	XPMT06X308R-D*
TDXU-0875FS-04	0.875	1.000	1.457	3.523	2.280	3.640	4.599	6.902	0.045	1.030	XPMT07H308R-D*
TDXU-0937FS-04	0.937	1.000	1.457	3.771	2.280	3.890	4.867	7.170	0.029	1.130	XPMT07H308R-D*
TDXU-1000FS-04	1.000	1.000	1.457	4.023	2.280	4.140	5.111	7.414	0.013	1.140	XPMT07H308R-D*
TDXU-1062FS-04	1.062	1.250	1.575	4.277	2.280	4.400	5.527	7.836	0.059	1.560	XPMT08T308R-D*
TDXU-1125FS-04	1.125	1.250	1.575	4.529	2.280	4.650	5.791	8.100	0.043	1.660	XPMT08T308R-D*
TDXU-1187FS-04	1.187	1.250	1.575	4.777	2.280	4.900	6.032	8.341	0.026	1.800	XPMT08T308R-D*
TDXU-1250FS-04	1.250	1.250	1.575	5.029	2.280	5.150	6.283	8.592	0.010	1.950	XPMT08T308R-D*
TDXU-1312FS-04	1.312	1.500	1.969	5.291	2.688	5.410	6.637	9.368	0.088	2.770	XPMT110412R-D*
TDXU-1375FS-04	1.375	1.500	1.969	5.543	2.688	5.660	6.905	9.636	0.072	2.900	XPMT110412R-D*
TDXU-1437FS-04	1.437	1.500	1.969	5.791	2.688	5.910	7.146	9.877	0.055	2.930	XPMT110412R-D*
TDXU-1500FS-04	1.500	1.500	1.969	6.043	2.688	6.160	7.413	10.144	0.038	3.180	XPMT110412R-D*
TDXU-1562FS-04	1.562	1.500	1.969	6.291	2.688	6.410	7.677	10.408	0.022	3.310	XPMT110412R-D*
TDXU-1625FS-04	1.625	1.500	2.165	6.561	2.688	6.680	7.978	10.727	0.128	3.820	XPMT150512R-D*
TDXU-1687FS-04	1.687	1.500	2.165	6.809	2.688	6.930	8.242	10.991	0.115	4.120	XPMT150512R-D*
TDXU-1750FS-04	1.750	1.500	2.165	7.061	2.688	7.180	8.486	11.235	0.097	4.340	XPMT150512R-D*
TDXU-1812FS-04	1.812	1.500	2.165	7.309	2.688	7.430	8.754	11.503	0.082	4.600	XPMT150512R-D*
TDXU-1875FS-04	1.875	1.500	2.165	7.561	2.688	7.680	9.001	11.750	0.063	4.950	XPMT150512R-D*
TDXU-1937FS-04	1.937	1.500	2.165	7.809	2.688	7.930	9.259	12.008	0.049	5.210	XPMT150512R-D*
TDXU-2000FS-04	2.000	1.500	2.165	8.061	2.688	8.180	9.510	12.259	0.030	5.370	XPMT150512R-D*
TDXU-2125FS-04	2.125	1.500	2.165	8.561	2.688	8.680	10.040	12.789	-	6.390	XPMT150512R-D*

** For offsetting on lathe

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)
ø0.500" - ø0.625"	+ 0.004" / 0	+ 0.016" / 0
ø0.687" - ø2.125"	+ 0.008" / 0	+ 0.018" / 0

*Just for reference

SPARE PARTS






Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-04	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

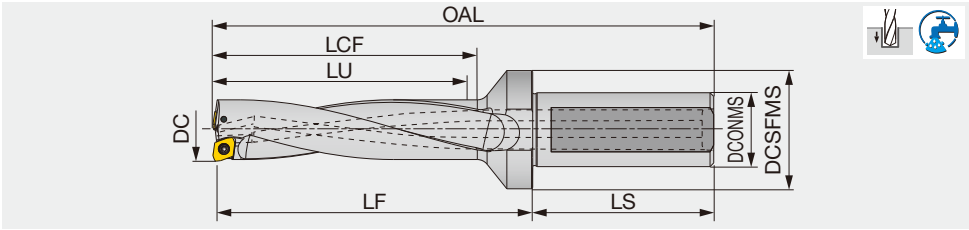
Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.52 lb·ft, CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft, CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TDX-F L/D=4

Indexable drill, L/D = 4, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-4	12.5	20	25	50.4	49	53.4	66	115.4	0.8	0.2	XPMT040104R-D*
TDX130F20-4	13	20	25	52.4	49	55.4	68	117.4	0.7	0.2	XPMT040104R-D*
TDX135F20-4	13.5	20	25	54.4	49	57.4	70	119.4	0.6	0.2	XPMT040104R-D*
TDX140F20-4	14	20	25	56.4	49	59.4	72	121.4	0.5	0.2	XPMT040104R-D*
TDX145F20-4	14.5	20	25	58.4	49	61.4	75	124.4	0.4	0.2	XPMT040104R-D*
TDX150F20-4	15	20	25	60.4	49	63.4	77	126.4	0.9	0.2	XPMT050204R-D*
TDX155F20-4	15.5	20	32	62.4	49	65.4	79	128.4	0.8	0.2	XPMT050204R-D*
TDX160F20-4	16	20	32	64.4	49	67.4	82	131.4	0.6	0.2	XPMT050204R-D*
TDX165F20-4	16.5	20	32	66.4	49	69.4	84	133.4	0.5	0.2	XPMT050204R-D*
TDX170F20-4	17	20	32	68.4	49	71.4	86	135.4	0.4	0.2	XPMT050204R-D*
TDX175F25-4	17.5	25	32	70.5	54	73.5	89	143.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-4	18	25	32	72.5	54	75.5	91	145.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-4	18.5	25	32	74.5	54	77.5	93	147.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-4	19	25	32	76.5	54	79.5	95	149.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-4	19.5	25	32	78.5	54	81.5	99	153.5	0.7	0.4	XPMT06X308R-D*
TDX200F25-4	20	25	32	80.5	54	84.5	101	155.5	0.5	0.4	XPMT06X308R-D*
TDX205F25-4	20.5	25	32	82.5	54	86.5	103	157.5	0.4	0.4	XPMT06X308R-D*
TDX210F25-4	21	25	32	84.5	54	88.5	105	159.5	0.3	0.4	XPMT06X308R-D*
TDX215F25-4	21.5	25	32	86.5	54	90.5	107	161.5	0.2	0.4	XPMT06X308R-D*
TDX220F25-4	22	25	32	88.6	54	92.6	109	163.6	1.2	0.5	XPMT07H308R-D*
TDX225F25-4	22.5	25	37	90.6	54	94.6	111.5	166.1	1.1	0.5	XPMT07H308R-D*
TDX230F25-4	23	25	37	92.6	54	96.6	114	168.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-4	23.5	25	37	94.6	54	98.6	116.5	171.1	0.8	0.4	XPMT07H308R-D*
TDX240F25-4	24	25	37	96.6	54	100.6	119	173.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-4	24.5	25	37	98.6	54	102.6	121.5	176.1	0.5	0.6	XPMT07H308R-D*
TDX250F25-4	25	25	37	100.6	54	104.6	124	178.6	0.4	0.6	XPMT07H308R-D*
TDX255F25-4	25.5	25	37	102.6	54	106.6	126	180.6	0.3	0.6	XPMT07H308R-D*
TDX260F25-4	26	25	37	104.6	54	108.6	128	182.6	0.2	0.6	XPMT07H308R-D*
TDX270F32-4	27	32	40	108.7	59	112.7	132	191.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-4	28	32	40	112.7	59	116.7	137	196.7	1.2	0.8	XPMT08T308R-D*
TDX290F32-4	29	32	40	116.7	59	120.7	141	200.7	1	0.7	XPMT08T308R-D*
TDX300F32-4	30	32	40	120.7	59	124.7	147	206.7	0.7	0.9	XPMT08T308R-D*
TDX310F32-4	31	32	40	124.7	59	128.7	152	211.7	0.4	0.9	XPMT08T308R-D*
TDX320F32-4	32	32	40	128.7	59	132.7	156	215.7	0.2	1	XPMT08T308R-D*
TDX330F40-4	33	40	50	133.1	69	137.1	161	231.1	2.3	1.4	XPMT110412R-D*
TDX340F40-4	34	40	50	137.1	69	141.1	165	235.1	2.1	1.4	XPMT110412R-D*
TDX350F40-4	35	40	50	141.1	69	145.1	170	240.1	1.8	1.4	XPMT110412R-D*
TDX360F40-4	36	40	50	145.1	69	149.1	175	245.1	1.5	1.5	XPMT110412R-D*
TDX370F40-4	37	40	50	149.1	69	153.1	179	249.1	1.3	1.5	XPMT110412R-D*
TDX380F40-4	38	40	50	153.1	69	157.1	184	254.1	1	1.7	XPMT110412R-D*
TDX390F40-4	39	40	50	157.1	69	161.1	188	258.1	0.7	1.8	XPMT110412R-D*
TDX400F40-4	40	40	50	161.1	69	165.1	193	263.1	0.5	1.8	XPMT110412R-D*
TDX410F40-4	41	40	50	165.1	69	169.1	198	268.1	0.2	1.9	XPMT110412R-D*
TDX420F40-4	42	40	55	169.6	69	173.6	202	272.6	3.1	2	XPMT150512R-D*
TDX430F40-4	43	40	55	173.6	69	177.6	207	277.6	2.9	2	XPMT150512R-D*
TDX440F40-4	44	40	55	177.6	69	181.6	211	281.6	2.6	2.1	XPMT150512R-D*
TDX450F40-4	45	40	55	181.6	69	185.6	217	287.6	2.3	2.3	XPMT150512R-D*
TDX460F40-4	46	40	55	185.6	69	189.6	222	292.6	2.1	2.4	XPMT150512R-D*
TDX470F40-4	47	40	55	189.6	69	193.6	226	296.6	1.8	2.5	XPMT150512R-D*
TDX480F40-4	48	40	55	193.6	69	197.6	231	301.6	1.5	2.7	XPMT150512R-D*
TDX490F40-4	49	40	55	197.6	69	201.6	235	305.6	1.3	2.7	XPMT150512R-D*
TDX500F40-4	50	40	55	201.6	69	205.6	240	310.6	1	2.8	XPMT150512R-D*
TDX510F40-4	51	40	55	205.6	69	209.6	245	315.6	0.7	2.9	XPMT150512R-D*
TDX520F40-4	52	40	55	209.6	69	213.6	249	319.6	0.5	3	XPMT150512R-D*
TDX530F40-4	53	40	55	213.6	69	217.6	254	324.6	-	3.1	XPMT150512R-D*
TDX540F40-4	54	40	55	217.6	69	221.6	258	328.6	-	3.4	XPMT150512R-D*

SPARE PARTS

Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø12.5 - ø17	+ 0.1 / 0	+ 0.4 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.45 / 0

*Just for reference

Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.7 N·m, CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

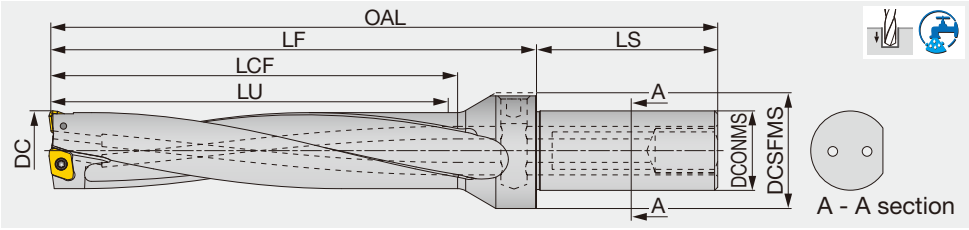
Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TUNGDRILLTWISTED

TDXU-F L/D=5

Indexable drill, L/D = 5, flat shank with side port





Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-05	0.500	0.750	1.250	2.515	2.000	2.630	3.519	5.534	0.030	0.470	XPMT040104R-D*
TDXU-0531FS-05	0.531	0.750	1.250	2.670	2.000	2.790	3.682	5.697	0.024	0.500	XPMT040104R-D*
TDXU-0562FS-05	0.562	0.750	1.250	2.825	2.000	2.950	3.841	5.856	0.018	0.510	XPMT040104R-D*
TDXU-0625FS-05	0.625	0.750	1.250	3.146	2.000	3.270	4.161	6.182	0.026	0.550	XPMT050204R-D*
TDXU-0687FS-05	0.687	1.000	1.457	3.454	2.280	3.580	4.535	6.834	0.048	0.900	XPMT06X308R-D*
TDXU-0750FS-05	0.750	1.000	1.457	3.769	2.280	3.890	4.841	7.140	0.027	0.960	XPMT06X308R-D*
TDXU-0812FS-05	0.812	1.000	1.457	4.079	2.280	4.200	5.168	7.467	0.015	1.020	XPMT06X308R-D*
TDXU-0875FS-05	0.875	1.000	1.457	4.398	2.280	4.520	5.474	7.777	0.045	1.100	XPMT07H308R-D*
TDXU-0937FS-05	0.937	1.000	1.457	4.708	2.280	4.830	5.805	8.108	0.029	1.220	XPMT07H308R-D*
TDXU-1000FS-05	1.000	1.000	1.457	5.023	2.280	5.140	6.111	8.414	0.013	1.230	XPMT07H308R-D*
TDXU-1062FS-05	1.062	1.250	1.575	5.339	2.280	5.460	6.590	8.899	0.059	1.690	XPMT08T308R-D*
TDXU-1125FS-05	1.125	1.250	1.575	5.654	2.280	5.770	6.916	9.225	0.043	1.810	XPMT08T308R-D*
TDXU-1187FS-05	1.187	1.250	1.575	5.964	2.280	6.080	7.219	9.528	0.026	1.970	XPMT08T308R-D*
TDXU-1250FS-05	1.250	1.250	1.575	6.279	2.280	6.400	7.533	9.842	0.010	2.160	XPMT08T308R-D*
TDXU-1312FS-05	1.312	1.500	1.969	6.603	2.688	6.720	7.949	10.680	0.088	3.030	XPMT110412R-D*
TDXU-1375FS-05	1.375	1.500	1.969	6.918	2.688	7.040	8.280	11.011	0.072	3.190	XPMT110412R-D*
TDXU-1437FS-05	1.437	1.500	1.969	7.228	2.688	7.350	8.583	11.314	0.055	3.220	XPMT110412R-D*
TDXU-1500FS-05	1.500	1.500	1.969	7.543	2.688	7.660	8.913	11.644	0.038	3.510	XPMT110412R-D*
TDXU-1562FS-05	1.562	1.500	1.969	7.853	2.688	7.970	9.239	11.970	0.022	3.700	XPMT110412R-D*
TDXU-1625FS-05	1.625	1.500	2.165	8.186	2.688	8.300	9.603	12.352	0.128	4.300	XPMT150512R-D*
TDXU-1687FS-05	1.687	1.500	2.165	8.496	2.688	8.610	9.929	12.678	0.115	4.670	XPMT150512R-D*
TDXU-1750FS-05	1.750	1.500	2.165	8.811	2.688	8.930	10.236	12.985	0.097	4.940	XPMT150512R-D*
TDXU-1812FS-05	1.812	1.500	2.165	9.121	2.688	9.240	10.567	13.316	0.082	5.250	XPMT150512R-D*
TDXU-1875FS-05	1.875	1.500	2.165	9.436	2.688	9.550	10.876	13.625	0.063	5.680	XPMT150512R-D*
TDXU-1937FS-05	1.937	1.500	2.165	9.746	2.688	9.860	11.196	13.945	0.049	6.010	XPMT150512R-D*
TDXU-2000FS-05	2.000	1.500	2.165	10.061	2.688	10.180	11.510	14.259	0.030	6.140	XPMT150512R-D*
TDXU-2125FS-05	2.125	1.500	2.165	10.686	2.688	10.800	12.165	14.914	-	7.460	XPMT150512R-D*

** For offsetting on lathe

Tool diameter (in)	Tool diameter tolerance (in)	Hole diameter tolerance (in)
ø0.500" - ø0.625"	+ 0.004" / 0	+ 0.016" / 0
ø0.687" - ø2.125"	+ 0.008" / 0	+ 0.018" / 0

*Just for reference

SPARE PARTS






Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-05	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

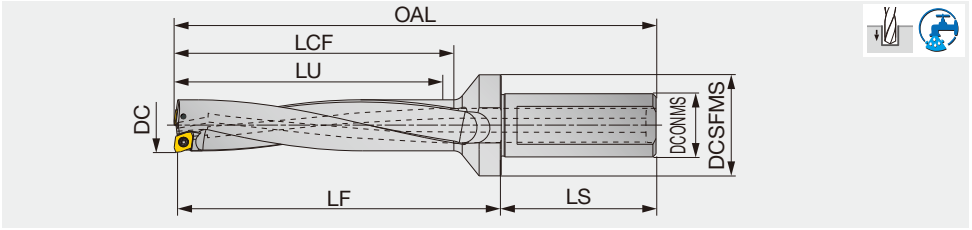
Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.52 lb·ft, CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft, CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

TDX-F L/D=5

Indexable drill, L/D = 5, flat shank





Metric	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-5	12.5	20	25	62.9	49	65.9	78.5	127.9	0.8	0.2	XPMT040104R-D*
TDX130F20-5	13	20	25	65.4	49	68.4	81	130.4	0.7	0.2	XPMT040104R-D*
TDX135F20-5	13.5	20	25	67.9	49	70.9	83.5	132.9	0.6	0.2	XPMT040104R-D*
TDX140F20-5	14	20	25	70.4	49	73.4	86	135.4	0.5	0.2	XPMT040104R-D*
TDX145F20-5	14.5	20	25	72.9	49	75.9	89.5	138.9	0.4	0.2	XPMT040104R-D*
TDX150F20-5	15	20	25	75.4	49	78.4	92	141.4	0.9	0.2	XPMT050204R-D*
TDX155F20-5	15.5	20	32	77.9	49	80.9	94.5	143.9	0.8	0.2	XPMT050204R-D*
TDX160F20-5	16	20	32	80.4	49	83.4	98	147.4	0.6	0.2	XPMT050204R-D*
TDX165F20-5	16.5	20	32	82.9	49	85.9	100.5	149.9	0.5	0.2	XPMT050204R-D*
TDX170F20-5	17	20	32	85.4	49	88.4	103	152.4	0.4	0.2	XPMT050204R-D*
TDX175F25-5	17.5	25	32	88	54	91	106.5	161	1.2	0.3	XPMT06X308R-D*
TDX180F25-5	18	25	32	90.5	54	93.5	109	163.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-5	18.5	25	32	93	54	96	111.5	166	0.9	0.4	XPMT06X308R-D*
TDX190F25-5	19	25	32	95.5	54	98.5	114	168.5	0.8	0.4	XPMT06X308R-D*
TDX195F25-5	19.5	25	32	98	54	101	118.5	173	0.7	0.4	XPMT06X308R-D*
TDX200F25-5	20	25	32	100.5	54	104.5	121	175.5	0.5	0.4	XPMT06X308R-D*
TDX205F25-5	20.5	25	32	103	54	107	123.5	178	0.4	0.4	XPMT06X308R-D*
TDX210F25-5	21	25	32	105.5	54	109.5	126	180.5	0.3	0.4	XPMT06X308R-D*
TDX215F25-5	21.5	25	32	108	54	112	128.5	183	0.2	0.4	XPMT06X308R-D*
TDX220F25-5	22	25	32	110.6	54	114.6	131	185.6	1.2	0.6	XPMT07H308R-D*
TDX225F25-5	22.5	25	37	113.1	54	117.1	134	188.6	1.1	0.6	XPMT07H308R-D*
TDX230F25-5	23	25	37	115.6	54	119.6	137	191.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-5	23.5	25	37	118.1	54	122.1	140	194.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-5	24	25	37	120.6	54	124.6	143	197.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-5	24.5	25	37	123.1	54	127.1	146	200.6	0.5	0.7	XPMT07H308R-D*
TDX250F25-5	25	25	37	125.6	54	129.6	149	203.6	0.4	0.7	XPMT07H308R-D*
TDX255F25-5	25.5	25	37	128.1	54	132.1	151.5	206.1	0.3	0.7	XPMT07H308R-D*
TDX260F25-5	26	25	37	130.6	54	134.6	154	208.6	0.2	0.7	XPMT07H308R-D*
TDX270F32-5	27	32	40	135.7	59	139.7	159	218.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-5	28	32	40	140.7	59	144.7	165	224.7	1.2	0.9	XPMT08T308R-D*
TDX290F32-5	29	32	40	145.7	59	149.7	170	229.7	1	0.7	XPMT08T308R-D*
TDX300F32-5	30	32	40	150.7	59	154.7	177	236.7	0.7	1	XPMT08T308R-D*
TDX310F32-5	31	32	40	155.7	59	159.7	183	242.7	0.4	1	XPMT08T308R-D*
TDX320F32-5	32	32	40	160.7	59	164.7	188	247.7	0.2	1.1	XPMT08T308R-D*
TDX330F40-5	33	40	50	166.1	69	170.1	194	264.1	2.3	1.5	XPMT110412R-D*
TDX340F40-5	34	40	50	171.1	69	175.1	199	269.1	2.1	1.5	XPMT110412R-D*
TDX350F40-5	35	40	50	176.1	69	180.1	205	275.1	1.8	1.5	XPMT110412R-D*
TDX360F40-5	36	40	50	181.1	69	185.1	211	281.1	1.5	1.6	XPMT110412R-D*
TDX370F40-5	37	40	50	186.1	69	190.1	216	286.1	1.3	1.6	XPMT110412R-D*
TDX380F40-5	38	40	50	191.1	69	195.1	222	292.1	1	1.9	XPMT110412R-D*
TDX390F40-5	39	40	50	196.1	69	200.1	227	297.1	0.7	2	XPMT110412R-D*
TDX400F40-5	40	40	50	201.1	69	205.1	233	303.1	0.5	2	XPMT110412R-D*
TDX410F40-5	41	40	50	206.1	69	210.1	239	309.1	0.2	2.1	XPMT110412R-D*
TDX420F40-5	42	40	55	211.6	69	215.6	244	314.6	3.1	2.2	XPMT150512R-D*
TDX430F40-5	43	40	55	216.6	69	220.6	250	320.6	2.9	2.2	XPMT150512R-D*
TDX440F40-5	44	40	55	221.6	69	225.6	255	325.6	2.6	2.3	XPMT150512R-D*
TDX450F40-5	45	40	55	226.6	69	230.6	262	332.6	2.3	2.6	XPMT150512R-D*
TDX460F40-5	46	40	55	231.6	69	235.6	268	338.6	2.1	2.7	XPMT150512R-D*
TDX470F40-5	47	40	55	236.6	69	240.6	273	343.6	1.8	2.8	XPMT150512R-D*
TDX480F40-5	48	40	55	241.6	69	245.6	279	349.6	1.5	3.1	XPMT150512R-D*
TDX490F40-5	49	40	55	246.6	69	250.6	284	354.6	1.3	3.1	XPMT150512R-D*
TDX500F40-5	50	40	55	251.6	69	255.6	290	360.6	1	3.2	XPMT150512R-D*
TDX510F40-5	51	40	55	256.6	69	260.6	296	366.6	0.7	3.3	XPMT150512R-D*
TDX520F40-5	52	40	55	261.6	69	265.6	301	371.6	0.5	3.4	XPMT150512R-D*
TDX530F40-5	53	40	55	266.6	69	270.6	307	377.6	-	3.5	XPMT150512R-D*
TDX540F40-5	54	40	55	271.6	69	275.6	312	382.6	-	3.9	XPMT150512R-D*

SPARE PARTS




Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Tool diameter (mm)	Tool diameter tolerance (mm)	Hole diameter tolerance (mm)*
ø12.5 - ø17	+ 0.1 / 0	+ 0.4 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.45 / 0

*Just for reference

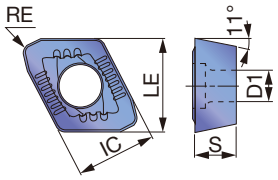
Recommended clamping torque: CSPB-2H/CSPB-2L043 = 0.7 N·m, CSPB-2.2 = 1 N·m, CSPB-2.5 = 1.3 N·m, CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

Reference pages: Inserts → J088 - J089
Standard cutting conditions → J090

INSERT

DJ





P	Steel			★	☆			
M	Stainless	☆		★				
K	Cast iron		☆	☆	★			
N	Non-ferrous	★		☆				
S	Superalloys	☆		★	☆			
H	Hard materials	☆		★	☆			

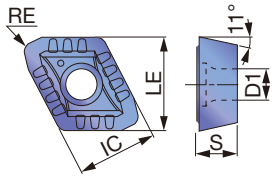
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated								S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	T1115	AH6030	AH9030									
XPMT040104R-DJ	0.169	0.177	●	●	●	●					0.063	0.091	0.016	0.492	0.571
XPMT050204R-DJ	0.205	0.213	●	●	●	●					0.094	0.091	0.016	0.591	0.669
XPMT06X308R-DJ	0.236	0.276	●	●	●	●					0.118	0.098	0.031	0.689	0.846
XPMT07H308R-DJ	0.276	0.323	●	●	●	●					0.142	0.110	0.031	0.866	1.024
XPMT08T308R-DJ	0.335	0.390	●	●	●	●					0.156	0.134	0.031	1.063	1.260
XPMT110412R-DJ	0.441	0.492	●	●	●	●					0.187	0.173	0.047	1.299	1.614
XPMT150512R-DJ	0.591	0.634	●	●	●	●					0.219	0.217	0.047	1.654	2.126

●: Line up

DS





P	Steel	☆	★					
M	Stainless	☆	★					
K	Cast iron							
N	Non-ferrous	☆						
S	Superalloys	☆	★					
H	Hard materials							

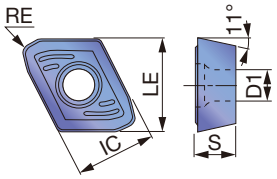
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated								S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030											
XPMT040104R-DS	0.169	0.177	●	●							0.063	0.091	0.016	0.492	0.571
XPMT050204R-DS	0.205	0.213	●	●							0.094	0.091	0.016	0.591	0.669
XPMT06X308R-DS	0.236	0.276	●	●							0.118	0.098	0.031	0.689	0.846
XPMT07H308R-DS	0.276	0.323	●	●							0.142	0.110	0.031	0.866	1.024
XPMT08T308R-DS	0.335	0.390	●	●							0.156	0.134	0.031	1.063	1.260
XPMT110412R-DS	0.441	0.492	●	●							0.187	0.173	0.047	1.299	1.614
XPMT150512R-DS	0.591	0.634	●	●							0.219	0.217	0.047	1.654	2.126

●: Line up

DW





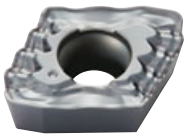
P	Steel	☆	★	☆
M	Stainless	☆	★	☆
K	Cast iron		☆	★
N	Non-ferrous	☆	★	
S	Superalloys	☆	★	☆
H	Hard materials	☆	★	☆

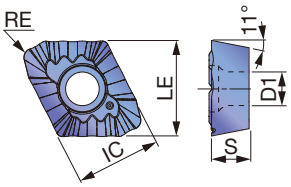
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated			S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030	AH9030					
XPMT040104R-DW	0.169	0.177	●	●	●	0.063	0.091	0.016	0.492	0.571
XPMT050204R-DW	0.205	0.213	●	●	●	0.094	0.091	0.016	0.591	0.669
XPMT06X308R-DW	0.236	0.276	●	●	●	0.118	0.098	0.031	0.689	0.846
XPMT07H308R-DW	0.276	0.323	●	●	●	0.142	0.110	0.031	0.866	1.024
XPMT08T308R-DW	0.335	0.390	●	●	●	0.156	0.134	0.031	1.063	1.260
XPMT110412R-DW	0.441	0.492	●	●	●	0.187	0.173	0.047	1.299	1.614
XPMT150512R-DW	0.591	0.634	●	●	●	0.219	0.217	0.047	1.654	2.126

●: Line up

DG





P	Steel	★	
M	Stainless	☆	
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated	S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725					
XPMT08T308R-DG	0.335	0.390	●	0.156	0.134	0.031	1.063	1.260
XPMT110412R-DG	0.441	0.492	●	0.187	0.173	0.047	1.299	1.614
XPMT150512R-DG	0.591	0.634	●	0.219	0.217	0.047	1.654	2.126

●: Line up

RECOMMENDED INSERT

ISO	Workpiece material	Hardness	First choice	High feed	High speed	Troubleshooting: Chipping resistance	Troubleshooting: Wear resistance	Troubleshooting: Surface finish	Troubleshooting: Chip control
P	Low carbon steels (C ≤ 0.3%)	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
P	Carbon steels (C > 0.3%) Alloy steels	- 300 HB	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
P	Low alloy steels	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	150 - 250 HB	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
K	Ductile cast irons	150 - 250 HB	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	-	DJ, AH725	DW, AH725	DS, AH6030	-	-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	- 40 HRC	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	- 50 HRC	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr) ø0.492" ~ ø0.571"	ø0.591" ~ ø0.669"	ø0.689" ~ ø1.024"	ø1.063" ~ ø1.260"	ø1.299" ~ ø2.126"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	- 200 HB	525 - 1050	2D, 3D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
				4D, 5D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
P	Carbon steels (C > 0.3) 1045, 1055, etc.	- 300 HB	262 - 820	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
				4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
P	Low alloy steels 4130, etc.	- 200 HB	525 - 820	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
				4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
P	Alloy steels 4140, 5120, etc.	- 300 HB	262 - 656	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
				4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
M	Stainless steels (Austenitic) 304, 316, etc.	- 200 HB	328 - 656	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
				4D, 5D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
M	Stainless steels (Martensitic and ferritic) 430, 416, etc.	- 200 HB	328 - 722	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
				4D, 5D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
M	Stainless steels (Precipitation hardening) 630, etc.	-	262 - 394	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
				4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
K	Gray cast irons Class 25, Class 30, etc.	150 - 250 HB	262 - 820	2D, 3D	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
				4D, 5D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	262 - 656	2D, 3D	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
				4D, 5D	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
N	Aluminum alloy 333.0, 383.0, etc.	-	656 - 1312	2D, 3D	0.0039 - 0.0047	0.0039 - 0.0059	0.0059 - 0.0079	0.0059 - 0.0079	0.0059 - 0.0098
				4D, 5D	0.0031 - 0.0047	0.0031 - 0.0047	0.0047 - 0.0063	0.0047 - 0.0063	0.0047 - 0.0079
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	66 - 197	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			66 - 197	4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	131 - 394	2D, 3D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
			131 - 394	4D, 5D	0.0024 - 0.0031	0.0024 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0039
H	Hardened steel ≥ 40HRC	- 50 HRC	131 - 328	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			131 - 328	4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

STANDARD CUTTING CONDITIONS FOR DG TYPE CHIPBREAKER

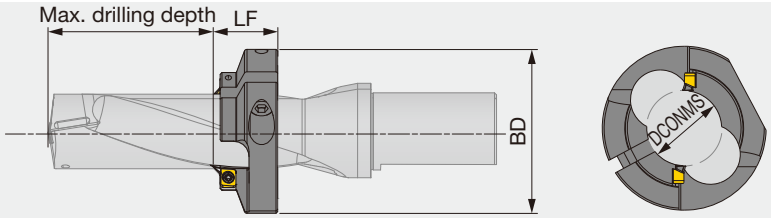
ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr) ø1.063" ~ ø1.260"	ø1.299" ~ ø2.126"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	- 200 HB	260 - 590	2D, 3D 4D, 5D	0.0016 - 0.0039	

- When using the smaller side of the diameter range, the feed rate should be set lower.
- When using DW insert for work materials of 40 HRC, the feed rate should be set below 50%.
- For difficult-to-cut materials (heat-resistant alloys, etc.), the cutting speed should be set 25% below that of carbon steels.
- High speed machining means cutting speeds over 150 m/min.
- For high-feed machining, apply a feed rate that is approximately 1.5 times the standard feed conditions.
- When using DW insert for troubleshooting, use it within the range of standard cutting conditions.
- DG type chipbreaker is suitable for heavy machines that have low-rpm spindles. If chatter occurs, a lower feed rate is recommended.

TUNGDRILLTWISTED

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	Max. drilling depth			
					L/D = 2	L/D = 3	L/D = 4	L/D = 5
TDXCF150L25	0.681	1.929	0.984	TDX175*25-*	0.512	1.201	1.890	2.579
TDXCF160L25	0.681	1.929	0.984	TDX180*25-*	0.551	1.260	1.969	2.677
TDXCF180L25	0.713	1.929	0.984	TDX185*25-*	0.591	1.319	2.047	2.776
TDXCF190L25	0.713	1.929	0.984	TDX190*25-*	0.630	1.378	2.126	2.874
TDXCF210L25	0.752	1.929	0.984	TDX195*25-*	0.669	1.437	2.205	2.972
TDXCF230L25	0.752	1.929	0.984	TDX200*25-*	0.787	1.575	2.323	3.110
TDXCF240L25	0.791	1.929	0.984	TDX205*25-*	0.827	1.634	2.402	3.209
TDXCF260L30	0.791	1.929	0.984	TDX210*25-*	0.866	1.693	2.480	3.307
TDXCF270L30	0.831	1.929	0.984	TDX215*25-*	0.906	1.752	2.559	3.406
TDXCF290L30	0.831	1.929	0.984	TDX220*25-*	0.945	1.811	2.638	3.504
TDXCF300L30	0.870	1.929	0.984	TDX225*25-*	0.984	1.870	2.717	3.602
TDXCF320L30	0.870	1.929	0.984	TDX230*25-*	1.024	1.929	2.795	3.701
TDXCF340L30	0.909	1.929	0.984	TDX235*25-*	1.063	1.988	2.874	3.799
TDXCF350L30	0.909	1.929	0.984	TDX240*25-*	1.102	2.047	2.953	3.898
TDXCF370L30	0.943	1.929	0.984	TDX245*25-*	1.142	2.106	3.031	3.996
TDXCF380L30	0.943	1.929	0.984	TDX250*25-*	1.181	2.165	3.110	4.094
TDXCF400L30	0.982	2.520	1.181	TDX255*25-*	1.024	2.028	2.992	3.996
TDXCF410L30	0.982	2.520	1.181	TDX260*25-*	1.063	2.087	3.071	4.094
TDXCF430L30	1.020	2.520	1.181	TDX270*32-*	1.142	2.205	3.228	4.291
TDXCF450L30	1.059	2.520	1.181	TDX280*32-*	1.193	2.295	3.386	4.488
TDXCF460L30	1.098	2.520	1.181	TDX290*32-*	1.272	2.413	3.543	4.685
TDXCF480L30	1.138	2.520	1.181	TDX300*32-*	1.350	2.531	3.701	4.882
TDXCF500L30	1.177	2.520	1.181	TDX310*32-*	1.429	2.650	3.858	5.079
TDXCF510L30	1.217	2.520	1.181	TDX320*32-*	1.508	2.768	4.016	5.276

SPARE PARTS

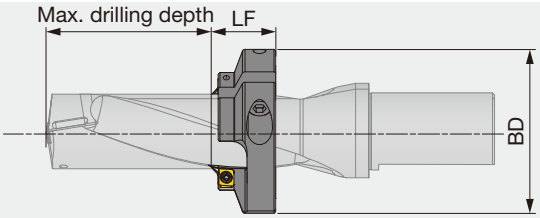
Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF130 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

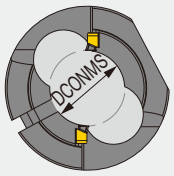
Recommended clamping torque: CSPB-4S = 2.58 lb·ft

TUNGDRILLTWISTED

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill





Metric	DCONMS	BD	LF	Application drill	Max. drilling depth			
					L/D = 2	L/D = 3	L/D = 4	L/D = 5
TDXCF180L25	17.3	49	25	TDX175*25-*	13	30.5	48	65.5
TDXCF180L25	17.3	49	25	TDX180*25-*	14	32	50	68
TDXCF190L25	18.1	49	25	TDX185*25-*	15	33.5	52	70.5
TDXCF190L25	18.1	49	25	TDX190*25-*	16	35	54	73
TDXCF200L25	19.1	49	25	TDX195*25-*	17	36.5	56	75.5
TDXCF200L25	19.1	49	25	TDX200*25-*	20	40	59	79
TDXCF210L25	20.1	49	25	TDX205*25-*	21	41.5	61	81.5
TDXCF210L25	20.1	49	25	TDX210*25-*	22	43	63	84
TDXCF220L25	21.1	49	25	TDX215*25-*	23	44.5	65	86.5
TDXCF220L25	21.1	49	25	TDX220*25-*	24	46	67	89
TDXCF230L25	22.1	49	25	TDX225*25-*	25	47.5	69	91.5
TDXCF230L25	22.1	49	25	TDX230*25-*	26	49	71	94
TDXCF240L25	23.1	49	25	TDX235*25-*	27	50.5	73	96.5
TDXCF240L25	23.1	49	25	TDX240*25-*	28	52	75	99
TDXCF250L25	23.95	49	25	TDX245*25-*	29	53.5	77	101.5
TDXCF250L25	23.95	49	25	TDX250*25-*	30	55	79	104
TDXCF260L30	24.95	64	30	TDX255*25-*	26	51.5	76	101.5
TDXCF260L30	24.95	64	30	TDX260*25-*	27	53	78	104
TDXCF270L30	25.9	64	30	TDX270*32-*	29	56	82	109
TDXCF280L30	26.9	64	30	TDX280*32-*	30.3	58.3	86	114
TDXCF290L30	27.9	64	30	TDX290*32-*	32.3	61.3	90	119
TDXCF300L30	28.9	64	30	TDX300*32-*	34.3	64.3	94	124
TDXCF310L30	29.9	64	30	TDX310*32-*	36.3	67.3	98	129
TDXCF320L30	30.9	64	30	TDX320*32-*	38.3	70.3	102	134

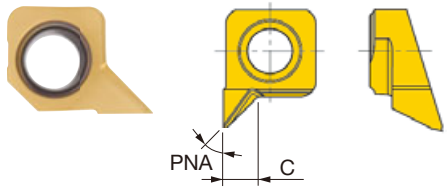
SPARE PARTS

Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF180... - TDXCF250...	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260... - TDXCF320...	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 3.5 N·m

INSERT

XHGX-45A



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C (in)	Coated GH130
XHGX090700R-45A	45°	0.098	●

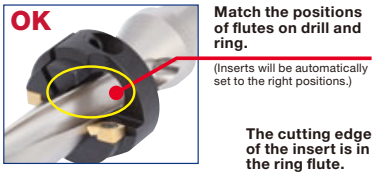
●: Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

② Place the inserts, and tighten the insert screw lightly.

③ Adjust the ring position with a presetter, height gauge, or vernier caliper, and securely tighten the ring screw, then the insert screw.



Match the positions of flutes on drill and ring.
(Inserts will be automatically set to the right positions.)

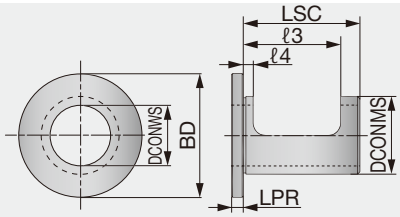
The cutting edge of the insert is in the ring flute.



The flutes on drill and ring do not match.

EZ sleeve

Eccentric sleeve for TungDrillTwisted and TungSix-Drill



Inch	DCONWS	DCONMS	BD	LSC	LPR	ℓ3	ℓ4	Hole diameter adjustment	Cutting edge height adjustment
EZ0.75-1.25	0.750	1.250	1.750	2.000	0.200	1.575	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.00-1.50	1.000	1.500	2.000	2.500	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.25-2.00	1.250	2.000	2.500	2.700	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.50-2.00	1.500	2.000	2.750	2.900	0.200	1.965	0.375	+0.024 ~ - 0.008	+0.012 ~ - 0.008

Metric	DCONWS	DCONMS	BD	LSC	LPR	ℓ3	ℓ4	Hole diameter adjustment	Cutting edge height adjustment
EZ2025	20	25	46	49	5	32.5	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ2532	25	32	51	52	5	38	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ3240	32	40	54	62	5	43	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ4050	40	50	69	63	5	55	4	+0.6 ~ - 0.2	+0.3 ~ - 0.2

SPARE PARTS

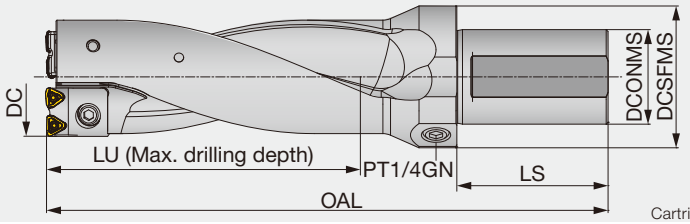
Designation	Wrench
EZ...	P-2.5

TUNGDRILLBIG

TDBU, TDS cartridge set

Indexable drill, L/D = 2.5, with tool diameter adjustability





Cartridge set is sold separately.

Body	Cartridge set*	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate		Insert
Inch	Inch								Designation	Thickness	
TDBU2250-2447-2.5	TDSCA57-62	2.250	2.000	2.953	6.117	4.000	11.957	8.800	-	-	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.289	2.000	2.953	6.117	4.000	11.957	8.800	AP0801	0.020	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.329	2.000	2.953	6.117	4.000	11.957	8.800	AP0802	0.039	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.368	2.000	2.953	6.117	4.000	11.957	8.800	AP0803	0.059	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.407	2.000	2.953	6.117	4.000	11.957	8.800	AP0804	0.079	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.447**	2.000	2.953	6.117	4.000	11.957	8.800	AP0805	0.098	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.461	2.000	2.953	6.447	4.000	12.567	10.100	-	-	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.500	2.000	2.953	6.447	4.000	12.567	10.100	AP0801	0.020	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.539	2.000	2.953	6.447	4.000	12.567	10.100	AP0802	0.039	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.579**	2.000	2.953	6.447	4.000	12.567	10.100	AP0803	0.059	WWMU08X408R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.632	2.000	2.953	7.170	4.000	13.544	11.900	-	-	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.671	2.000	2.953	7.170	4.000	13.544	11.900	AP1101	0.020	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.711	2.000	2.953	7.170	4.000	13.544	11.900	AP1102	0.039	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.750	2.000	2.953	7.170	4.000	13.544	11.900	AP1103	0.059	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.789	2.000	2.953	7.170	4.000	13.544	11.900	AP1104	0.079	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.829	2.000	2.953	7.170	4.000	13.544	11.900	AP1105	0.098	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.868**	2.000	2.953	7.170	4.000	13.544	11.900	AP1106	0.118	WWMU09X510R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.921	2.000	2.953	7.894	4.000	13.973	13.700	-	-	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.961	2.000	2.953	7.894	4.000	13.973	13.700	AP1101	0.020	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.000	2.000	2.953	7.894	4.000	13.973	13.700	AP1102	0.039	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.039	2.000	2.953	7.894	4.000	13.973	13.700	AP1103	0.059	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.079	2.000	2.953	7.894	4.000	13.973	13.700	AP1104	0.079	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.118	2.000	2.953	7.894	4.000	13.973	13.700	AP1105	0.098	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.157**	2.000	2.953	7.894	4.000	13.973	13.700	AP1106	0.118	WWMU11X512R-D*

*Cartridge set is sold separately

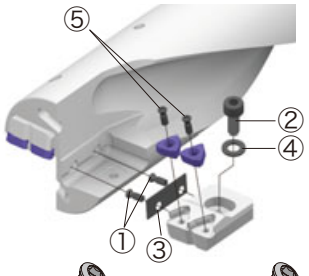
** - max diameter that can be achieved with this drill body

Body SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDSCA57-62	CSTB-3	T-9F
TDSCA63-66	CSTB-3	T-9F
TDSCA67-73	CSTB-4	T-15F
TDSCA74-80	CSTB-5	T-20F



Cartridge SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDS08CA-C-57-62	CSTB-3	-
TDS08CA-C-63-66	CSTB-3	-
TDS09CA-C-67-73	CSTB-4	-
TDS11CA-C-74-80	CSTB-5	-

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw (x2)
TDS08CA-P-57-62	CSTB-3	CSTB-3
TDS08CA-P-63-66	CSTB-3	CSTB-3
TDS09CA-P-67-73	CSTB-4	CSTB-3
TDS11CA-P-74-80	CSTB-5	CSTB-3

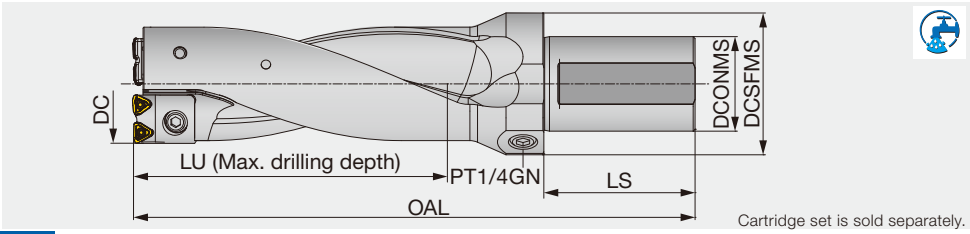
Recommended clamping torque: CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J096, Standard cutting conditions → J097

TDB, TDS cartridge set

Indexable drill, L/D = 2.5, with tool diameter adjustability





Cartridge set is sold separately.

Body	Cartridge set*	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(kg)	Setting plate		Insert
Metric	Metric								Designation	Thickness (mm)	
TDB55-56F50-2.5	TDSCA55-56	55	50	75	140	80	262	3.2	-	-	WWMU08X408R-D*
TDB55-56F50-2.5	TDSCA55-56	56	50	75	140	80	262	3.2	AP0801	0.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	57	50	75	155	80	282	3.6	-	-	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	58	50	75	155	80	282	3.6	AP0801	0.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	59	50	75	155	80	282	3.6	AP0802	1	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	60	50	75	155	80	282	3.6	AP0803	1.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	61	50	75	155	80	282	3.6	AP0804	2	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	62**	50	75	155	80	282	3.6	AP0805	2.5	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	63	50	75	165	80	297	4.2	-	-	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	64	50	75	165	80	297	4.2	AP0801	0.5	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	65	50	75	165	80	297	4.2	AP0802	1	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	66**	50	75	165	80	297	4.2	AP0803	1.5	WWMU08X408R-D*
TDB67-73F50-2.5	TDSCA67-73	67	50	75	183	80	322	5	-	-	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	68	50	75	183	80	322	5	AP1101	0.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	69	50	75	183	80	322	5	AP1102	1	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	70	50	75	183	80	322	5	AP1103	1.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	71	50	75	183	80	322	5	AP1104	2	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	72	50	75	183	80	322	5	AP1105	2.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	73**	50	75	183	80	322	5	AP1106	3	WWMU09X510R-D*
TDB74-80F50-2.5	TDSCA74-80	74	50	75	200	80	333	5.7	-	-	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	75	50	75	200	80	333	5.7	AP1101	0.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	76	50	75	200	80	333	5.7	AP1102	1	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	77	50	75	200	80	333	5.7	AP1103	1.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	78	50	75	200	80	333	5.7	AP1104	2	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	79	50	75	200	80	333	5.7	AP1105	2.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	80**	50	75	200	80	333	5.7	AP1106	3	WWMU11X512R-D*

*Cartridge set is sold separately

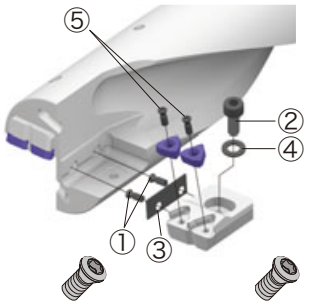
** max drill diameter that can be achieved with this drill body

Body SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDB55-56F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	-	-	-	-	-	T-9D	P-4	P-6	5.3X10X1
TDB57-62F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDB63-66F50-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDB67-73F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDB74-80F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDSCA55 - 56	CSTB-3	T-9F
TDSCA57 - 62	CSTB-3	T-9F
TDSCA63 - 66	CSTB-3	T-9F
TDSCA67 - 73	CSTB-4	T-15F
TDSCA74 - 80	CSTB-5	T-20F



Cartridge SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDS08CA-C-55-56	CSTB-3	-
TDS08CA-C-57-62	CSTB-3	-
TDS08CA-C-63-66	CSTB-3	-
TDS09CA-C-67-73	CSTB-4	-
TDS11CA-C-74-80	CSTB-5	-

SPARE PARTS

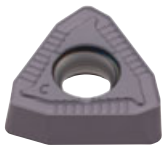
Designation	Insert screw (x2)	Setting plate screw (x2)
TDS08CA-P-55-56	CSTB-3	CSTB-3
TDS08CA-P-57-62	CSTB-3	CSTB-3
TDS08CA-P-63-66	CSTB-3	CSTB-3
TDS09CA-P-67-73	CSTB-4	CSTB-3
TDS11CA-P-74-80	CSTB-5	CSTB-3

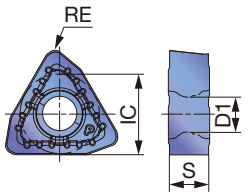
Recommended clamping torque: CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

Reference pages: Inserts → J096, Standard cutting conditions → J097

INSERT

DJ





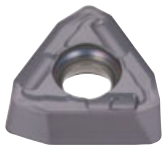
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

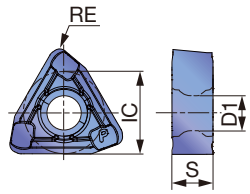
★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated AH3135	Coated AH9030	D1 (in)	RE (in)	DCN (in)	DCX (in)
WWMU08X408R-DJ	0.315	0.154	●	●	0.134	0.031	2.165	2.598
WWMU09X510R-DJ	0.382	0.193	●	●	0.173	0.039	2.638	2.874
WWMU11X512R-DJ	0.445	0.224	●	●	0.217	0.047	2.913	3.150

●: Line up

DS





P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated AH6030	D1 (in)	RE (in)	DCN (in)	DCX (in)
WWMU08X408R-DS	0.315	0.154	●	0.134	0.031	2.165	2.598
WWMU09X510R-DS	0.382	0.193	●	0.173	0.039	2.638	2.874
WWMU11X512R-DS	0.445	0.224	●	0.217	0.047	2.913	3.150

●: Line up

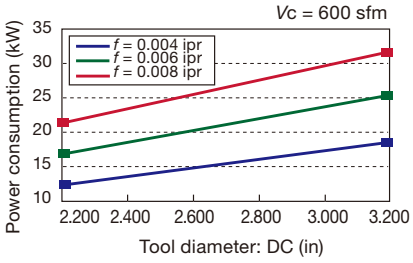
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Chip breakers	Grade	Cutting speed	Feed: *f* (ipr) DC (in)		
						Vc (sfm)	ø2.165" - ø2.205"	ø2.244" - ø2.874"	ø2.913" - ø3.150"
P	Low carbon steels (C<0.3) 1018, 1020, 1026, etc.	- 200 HB	First choice	DS	AH6030	525 - 820	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			Wear resistance	DJ	AH9030	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Carbon steels (C>0.3) 1045, 1055, etc.	- 300 HB	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
			Fracture resistance	DJ	AH3135	262 - 820	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0063
	Low alloy steels 5120, etc.	- 200 HB	First choice	DS	AH6030	525 - 820	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
			Wear resistance	DJ	AH9030	525 - 820	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
	Alloy steels 4140, 8620, etc.	- 300 HB	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
			Fracture resistance	DJ	AH3135	262 - 656	0.0016 - 0.0051	0.0016 - 0.0055	0.0016 - 0.0059
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	- 200 HB	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
			-	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	- 200 HB	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
			-	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	-	First choice	DS	AH6030	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			-	DJ	AH3135	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
K	Gray cast irons Class 25, Class 30, etc.	150 - 250 HB	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0071	0.0031 - 0.0079	0.0031 - 0.0087
			Fracture resistance	DJ	AH3135	262 - 656	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
	Ductile cast irons 60-40-18, 60-55-06, etc.	150 - 250 HB	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
			Fracture resistance	DJ	AH3135	262 - 492	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
N	Aluminum alloy	-	First choice	DS	AH6030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
			-	DJ	AH9030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
S	Heat-resistant alloys Inconel718, etc.	- 40 HRC	First choice	DS	AH6030	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
			-	DJ	AH3135	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	DS	AH6030	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
			-	DJ	AH3135	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
H	Hardened steel < 40HRC	- 50 HRC	First choice	DJ	AH9030	164 - 328	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
			Fracture resistance	DJ	AH3135	131 - 262	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50 or CAT50 holders.
- Figure on right shows reference of required machine power.



Cutting coolant

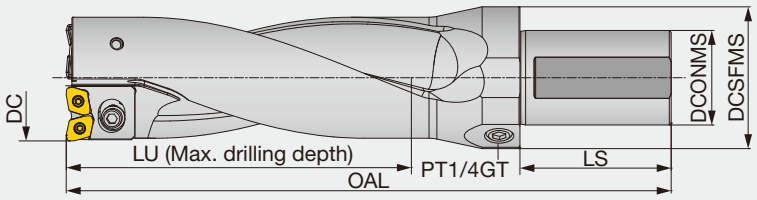
- Internal coolant supply is recommended.
- Coolant pressure higher than 1MPa is essential.
- Use water soluble type coolant.

TUNGDRILLBIG

TDBU, TDX cartridge set

Indexable drill, L/D = 2.5, with tool diameter adjustability





Cartridge set is sold separately.

Body	Cartridge set*	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate		Insert
Inch	Inch								Designation	Thickness	
TDBU2250-2447-2.5	TDXCA57-62	2.250	2.000	2.953	6.117	4.000	11.874	8.800	-	-	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.289	2.000	2.953	6.117	4.000	11.874	8.800	AP0801	0.020	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.329	2.000	2.953	6.117	4.000	11.874	8.800	AP0802	0.039	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.368	2.000	2.953	6.117	4.000	11.874	8.800	AP0803	0.059	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.407	2.000	2.953	6.117	4.000	11.874	8.800	AP0804	0.079	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.447**	2.000	2.953	6.117	4.000	11.874	8.800	AP0805	0.098	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.461	2.000	2.953	6.447	4.000	12.465	10.100	-	-	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.500	2.000	2.953	6.447	4.000	12.465	10.100	AP0801	0.020	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.539	2.000	2.953	6.447	4.000	12.465	10.100	AP0802	0.039	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.579**	2.000	2.953	6.447	4.000	12.465	10.100	AP0803	0.059	XPMT08T308R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.632	2.000	2.953	7.170	4.000	13.449	11.900	-	-	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.671	2.000	2.953	7.170	4.000	13.449	11.900	AP1101	0.020	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.711	2.000	2.953	7.170	4.000	13.449	11.900	AP1102	0.039	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.750	2.000	2.953	7.170	4.000	13.449	11.900	AP1103	0.059	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.789	2.000	2.953	7.170	4.000	13.449	11.900	AP1104	0.079	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.829	2.000	2.953	7.170	4.000	13.449	11.900	AP1105	0.098	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.868**	2.000	2.953	7.170	4.000	13.449	11.900	AP1106	0.118	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.921	2.000	2.953	7.894	4.000	13.843	13.700	-	-	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.961	2.000	2.953	7.894	4.000	13.843	13.700	AP1101	0.020	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.000	2.000	2.953	7.894	4.000	13.843	13.700	AP1102	0.039	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.039	2.000	2.953	7.894	4.000	13.843	13.700	AP1103	0.059	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.079	2.000	2.953	7.894	4.000	13.843	13.700	AP1104	0.079	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.118	2.000	2.953	7.894	4.000	13.843	13.700	AP1105	0.098	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.157**	2.000	2.953	7.894	4.000	13.843	13.700	AP1106	0.118	XPMT110412R-D*

*Cartridge set is sold separately

** max drill diameter that can be achieved with this drill body

Body

SPARE PARTS



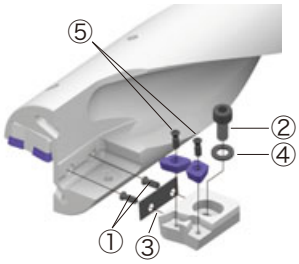
Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set

SPARE PARTS



Designation	⑤ Insert screw	Wrench
TDXCA57-62	CSTB-3	T-9F
TDXCA63-66	CSTB-3	T-9F
TDXCA67-73	CSTB-4	T-15F
TDXCA74-80	CSTB-4	T-15F



Cartridge

SPARE PARTS



Designation	Insert screw (x2)	Setting plate screw
TDX08CA-C1	CSTB-3	-
TDX08CA-C2	CSTB-3	-
TDX11CA-C1	CSTB-4	-
TDX11CA-C2	CSTB-4	-

SPARE PARTS



Designation	Insert screw (x2)	Setting plate screw (x2)
TDX08CA-P1	CSTB-3	CSTB-3
TDX08CA-P2	CSTB-3	CSTB-3
TDX11CA-P1	CSTB-4	CSTB-3
TDX11CA-P2	CSTB-4	CSTB-3

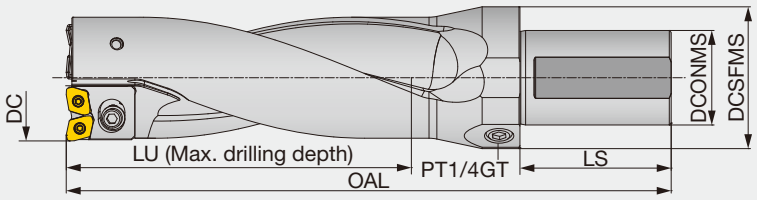
Recommended clamping torque: CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft

Reference pages: Inserts → J100 - J101, Standard cutting conditions → J101 - J102

TDB, TDX cartridge set

Indexable drill, L/D = 2.5, with tool diameter adjustability





Cartridge set is sold separately.

Body	Cartridge set*	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(kg)	Setting plate		Insert
Metric	Metric								Designation	Thickness (mm)	
TDB55-56F50-2.5	TDXCA55-56	55	50	75	140	80	260	3.2	-	-	XPMT08T308R-D*
TDB55-56F50-2.5	TDXCA55-56	56	50	75	140	80	260	3.2	AP0801	0.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	57	50	75	155	80	280	3.6	-	-	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	58	50	75	155	80	280	3.6	AP0801	0.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	59	50	75	155	80	280	3.6	AP0802	1	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	60	50	75	155	80	280	3.6	AP0803	1.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	61	50	75	155	80	280	3.6	AP0804	2	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	62**	50	75	155	80	280	3.6	AP0805	2.5	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	63	50	75	165	80	295	4.2	-	-	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	64	50	75	165	80	295	4.2	AP0801	0.5	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	65	50	75	165	80	295	4.2	AP0802	1	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	66**	50	75	165	80	295	4.2	AP0803	1.5	XPMT08T308R-D*
TDB67-73F50-2.5	TDXCA67-73	67	50	75	183	80	320	5	-	-	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	68	50	75	183	80	320	5	AP1101	0.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	69	50	75	183	80	320	5	AP1102	1	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	70	50	75	183	80	320	5	AP1103	1.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	71	50	75	183	80	320	5	AP1104	2	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	72	50	75	183	80	320	5	AP1105	2.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	73**	50	75	183	80	320	5	AP1106	3	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	74	50	75	200	80	330	5.7	-	-	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	75	50	75	200	80	330	5.7	AP1101	0.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	76	50	75	200	80	330	5.7	AP1102	1	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	77	50	75	200	80	330	5.7	AP1103	1.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	78	50	75	200	80	330	5.7	AP1104	2	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	79	50	75	200	80	330	5.7	AP1105	2.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	80**	50	75	200	80	330	5.7	AP1106	3	XPMT110412R-D*

*Cartridge set is sold separately

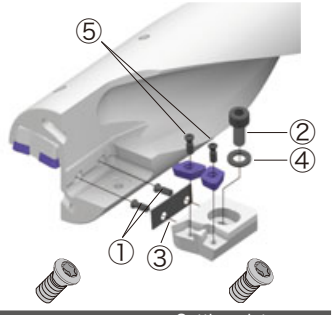
** max drill diameter that can be achieved with this drill body

Body SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDB55-56F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	-	-	-	-	-	T-9D	P-4	P-6	5.3X10X1
TDB57-62F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDB63-66F50-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDB67-73F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDB74-80F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDXCA55 - 56	CSTB-3	T-9F
TDXCA57 - 62	CSTB-3	T-9F
TDXCA63 - 66	CSTB-3	T-9F
TDXCA67 - 73	CSTB-4	T-15F
TDXCA74 - 80	CSTB-4	T-15F



Cartridge SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDX08CA-C0	CSTB-3	-
TDX08CA-C1	CSTB-3	-
TDX08CA-C2	CSTB-3	-
TDX11CA-C1	CSTB-4	-
TDX11CA-C2	CSTB-4	-

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw (x2)
TDX08CA-P0	CSTB-3	CSTB-3
TDX08CA-P1	CSTB-3	CSTB-3
TDX08CA-P2	CSTB-3	CSTB-3
TDX11CA-P1	CSTB-4	CSTB-3
TDX11CA-P2	CSTB-4	CSTB-3

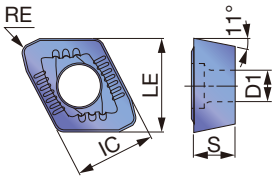
Recommended clamping torque: CSTB-3 = 2.3 N·m, CSTB-4 = 3.5 N·m

Reference pages: Inserts → J100 - J101, Standard cutting conditions → J101 - J102

INSERT

DJ





P	Steel			★	☆				
M	Stainless	☆		★					
K	Cast iron		☆	☆	★				
N	Non-ferrous	☆		★					
S	Superalloys	☆		★	☆				
H	Hard materials	☆		★	☆				

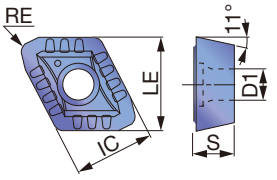
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated																	
			AH725	T1115	AH6030	AH9030											S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DJ	0.335	0.390	●	●	●	●											0.156	0.134	0.031	2.165	2.598
XPMT110412R-DJ	0.441	0.492	●	●	●	●											0.187	0.173	0.047	2.638	3.150

●: Line up

DS





P	Steel	☆	★						
M	Stainless	☆	★						
K	Cast iron								
N	Non-ferrous	☆							
S	Superalloys	☆	★						
H	Hard materials								

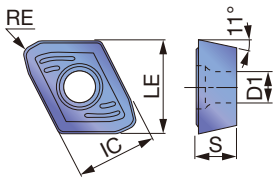
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated																	
			AH725	AH6030													S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DS	0.335	0.390	●	●													0.156	0.134	0.031	2.165	2.598
XPMT110412R-DS	0.441	0.492	●	●													0.187	0.173	0.047	2.638	3.150

●: Line up

DW





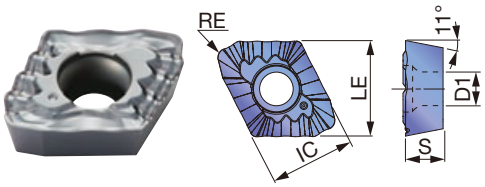
P	Steel	☆	★	☆					
M	Stainless	☆	★	☆					
K	Cast iron		☆	★					
N	Non-ferrous	☆	★						
S	Superalloys	☆	★	☆					
H	Hard materials	☆	★	☆					

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated																	
			AH725	AH6030	AH9030												S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DW	0.335	0.390	●	●	●												0.156	0.134	0.031	2.165	2.598
XPMT110412R-DW	0.441	0.492	●	●	●												0.187	0.173	0.047	2.638	3.150

●: Line up

DG



P	Steel	★
M	Stainless	☆
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated AH725	S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DG	0.335	0.390	●	0.156	0.134	0.031	2.165	2.598
XPMT110412R-DG	0.441	0.492	●	0.187	0.173	0.047	2.638	3.150

●: Line up

RECOMMENDED INSERT

ISO	Workpiece material	Hardness	First choice	High feed	High speed	Troubleshooting: Chipping resistance	Troubleshooting: Wear resistance	Troubleshooting: Surface finish	Troubleshooting: Chip control
P	Low carbon steels (C ≤ 0.3%)	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
	Carbon steels (C > 0.3%) Alloy steels	- 300 HB	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
	Low alloy steels	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	150 - 250 HB	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
	Ductile cast irons	150 - 250 HB	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	-	DJ, AH725	DW, AH725	DS, AH6030		-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	- 40 HRC	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	- 50 HRC	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) ø2.165" ~ ø2.441"	ø2.480" ~ ø2.874"	ø2.913" ~ ø3.150"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	- 200 HB	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
P	Carbon steels (C > 0.3) 1045, 1055, etc.	- 300 HB	262 - 820	0.0031 - 0.0071	0.0031 - 0.0071	0.0039 - 0.0079
P	Low alloy steels 4130, etc.	- 200 HB	525 - 820	0.0016 - 0.0063	0.0016 - 0.0063	0.0016 - 0.0063
P	Alloy steels 4140, 5120, etc.	- 300 HB	262 - 656	0.0031 - 0.0071	0.0031 - 0.0071	0.0031 - 0.0079
M	Stainless steels (Austenitic) 304, 316, etc.	- 200 HB	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
M	Stainless steels (Martensitic and ferritic) 430, 416, etc.	- 200 HB	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
M	Stainless steels (Precipitation hardening) 630, etc.	-	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047
K	Gray cast irons Class 25, Class 30, etc.	150 - 250 HB	262 - 820	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	262 - 656	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
N	Aluminum alloy 333.0, 383.0, etc.	-	656 - 1312	0.0059 - 0.0098	0.0059 - 0.0098	0.0071 - 0.011
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	66 - 197	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	131 - 394	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
H	Hardened steel ≥ 40HRC	- 50 HRC	131 - 328	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039

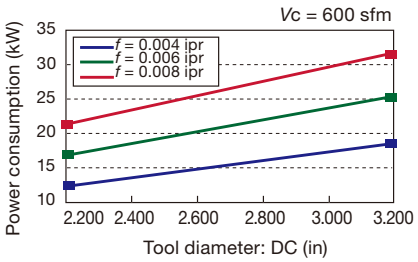
Standard cutting conditions for DG type chipbreaker

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr) ø1.063" ~ ø1.260"	ø1.299" ~ ø2.126"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	- 200 HB	260 - 590	2D, 3D	0.0016 - 0.0039	
				4D, 5D		

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50 or CAT50 holders.
- Figure on right shows reference of required machine power.

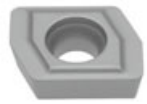


Cutting coolant

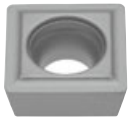
- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.

Drilling Insert (Former products)

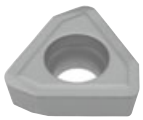
● LPMT03X206R-D4, LPMT05X204-D4

Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	LPMT03X206R-D4	●					ø14 ~ ø17.5 (ø0.551" - ø0.689")	TDJ (Former products)
	LPMT05X204-D4	●					ø14 ~ ø17.5 (ø0.551" - ø0.689")	

● SPMP831DS, SPMP/M**2ERD

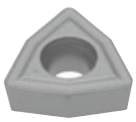
Shape	Designation	ISO Metric Designation	Coated					Applicable drill diameter	Applicable drill
			T313W						
	SPMP831DS	SPMT060204-DS	●					ø18 ~ ø19.5 (ø0.709" - ø0.768")	TDR, for Peripheral side (Former products)
	SPMP042ERD	SPMP080308ER-D	●					ø20 ~ ø28.5 (ø0.787" - ø1.122")	
	SPMM322ERD	SPMT090308ER-D	●					ø29 ~ ø34.5 (ø1.142" - ø1.358")	
	SPMM432ERD	SPMT120408ER-D	●					ø35 ~ ø49 (ø1.378" - ø1.929")	

● TPMP**ZDS, TPMP**ZERD, TPMM**ZERD

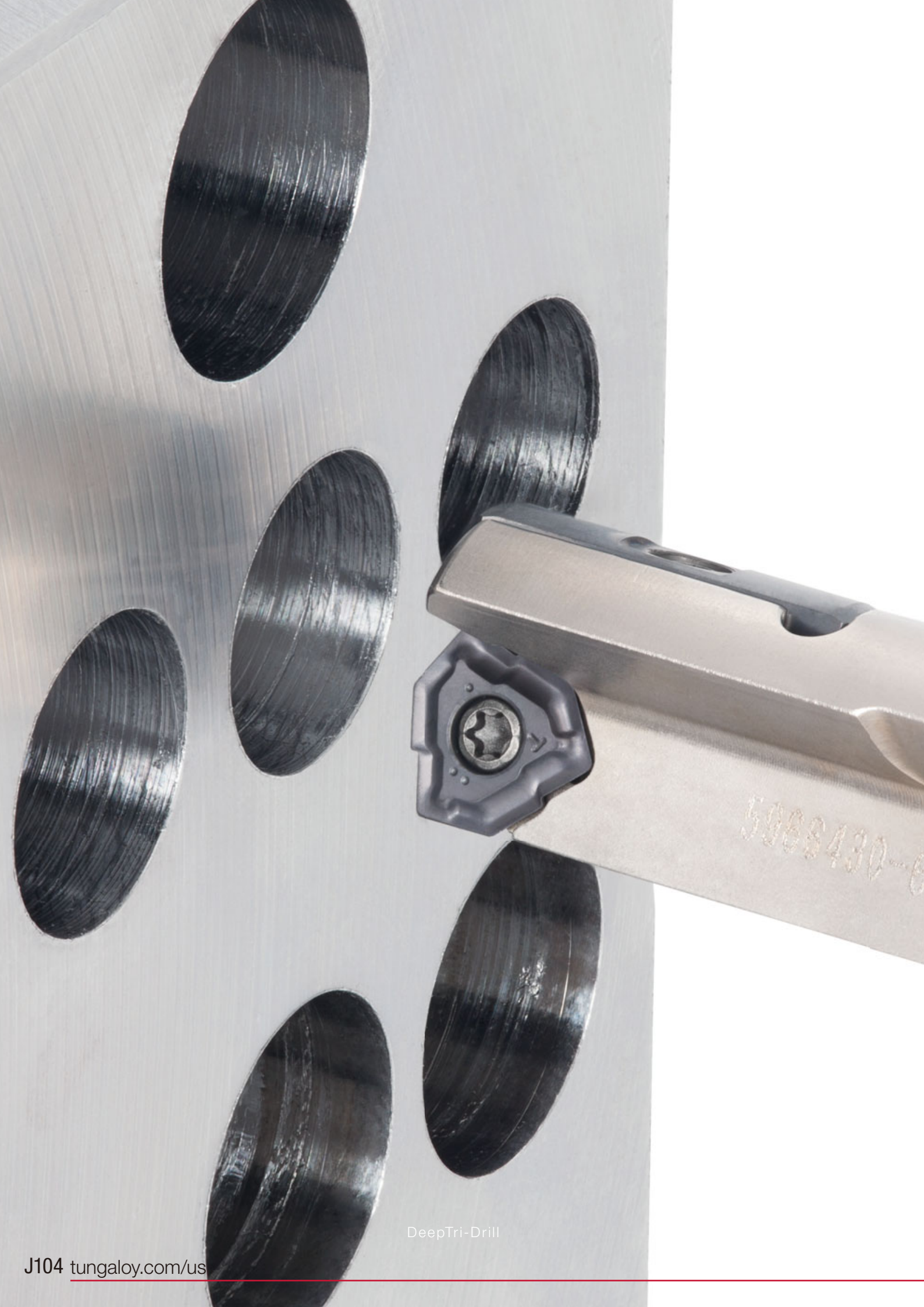
Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	TPMP83ZDS	●					ø18 ~ ø19.5 (ø0.709" - ø0.768")	TDR, for Central side (Former products)
	TPMP04ZERD	●					ø20 ~ ø28.5 (ø0.787" - ø1.122")	
	TPMM32ZERD	●					ø29 ~ ø34.5 (ø1.142" - ø1.358")	
	TPMM43ZERD	●					ø35 ~ ø54 (ø1.378" - ø2.126")	

TPMM43ZERD can be used on the peripheral side.

● WCMT**-D...

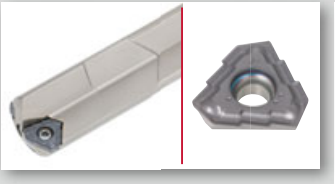
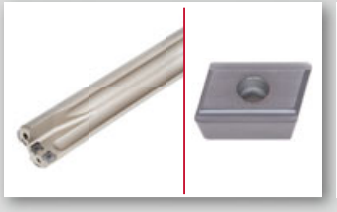
Shape	Designation	Coated						Applicable drill
		AH120	AH140	T313W				
	WCMT050308-DC			●				for counter boring, and drilling.
	WCMT050308-D4	●	●	●				
	WCMT06T308-DC			●				
	WCMT06T308-D4	●	●	●				
	WCMT080412-DC			●				
	WCMT080412-D4			●				

● : Line up



DeepTri-Drill

Deep Hole Drill

		Inch	Metric
	**DEEP TRI DRILL** Excellent productivity and stability in deep hole drilling ø0.437" - ø1.575" , ø10 mm - ø40 mm / L/D = 8 - 45 for machining centers OAL ≤ 64.961" , 1650 mm for gundrill machines (standard line-ups)	✓	✓
	J007 J106 -		
	**GUNDRILL** Brazed gundrills suitable for small diameter deep hole drilling **ø3 mm - ø12.2 mm / OAL ≤ 1650 mm (standard line-ups)**		✓
	J007, J106 J131		
	**TRI-FINE** Direct mount drill head with 3-cornered inserts **ø16 mm - ø28 mm , ø0.630" - ø1.102"**		✓
	J007 J132 -		
	**FINE-BEAM** Direct mount deep hole drilling heads **ø25 mm - ø89 mm , ø0.984" - ø3.504"**		✓
	J007 J132 -, J139 -		
	**UNIDEX** Indexable deep hole drilling heads with adjustable diameters **ø38 mm - ø293.99 mm , ø1.496" - ø11.574"**		✓
	J007 J132 -, J147 -		
	**Brazed BTA tools** New solution for BTA drilling with two types of tools: single tube and double tube **ø8 - ø65 mm , ø0.315" - ø2.559"**		✓
	J007 J132 -, J168 -		
	**HF drills for deep hole drilling** Indexable deep hole drills for large diameter with high productivity **ø30 mm - ø63 mm , ø0.453" - ø1.260" ,** **hole depth: L/D = 14**		✓
	J007, J181		

Indexable Gundrill guide

★ : First choice
☆ : Second choice

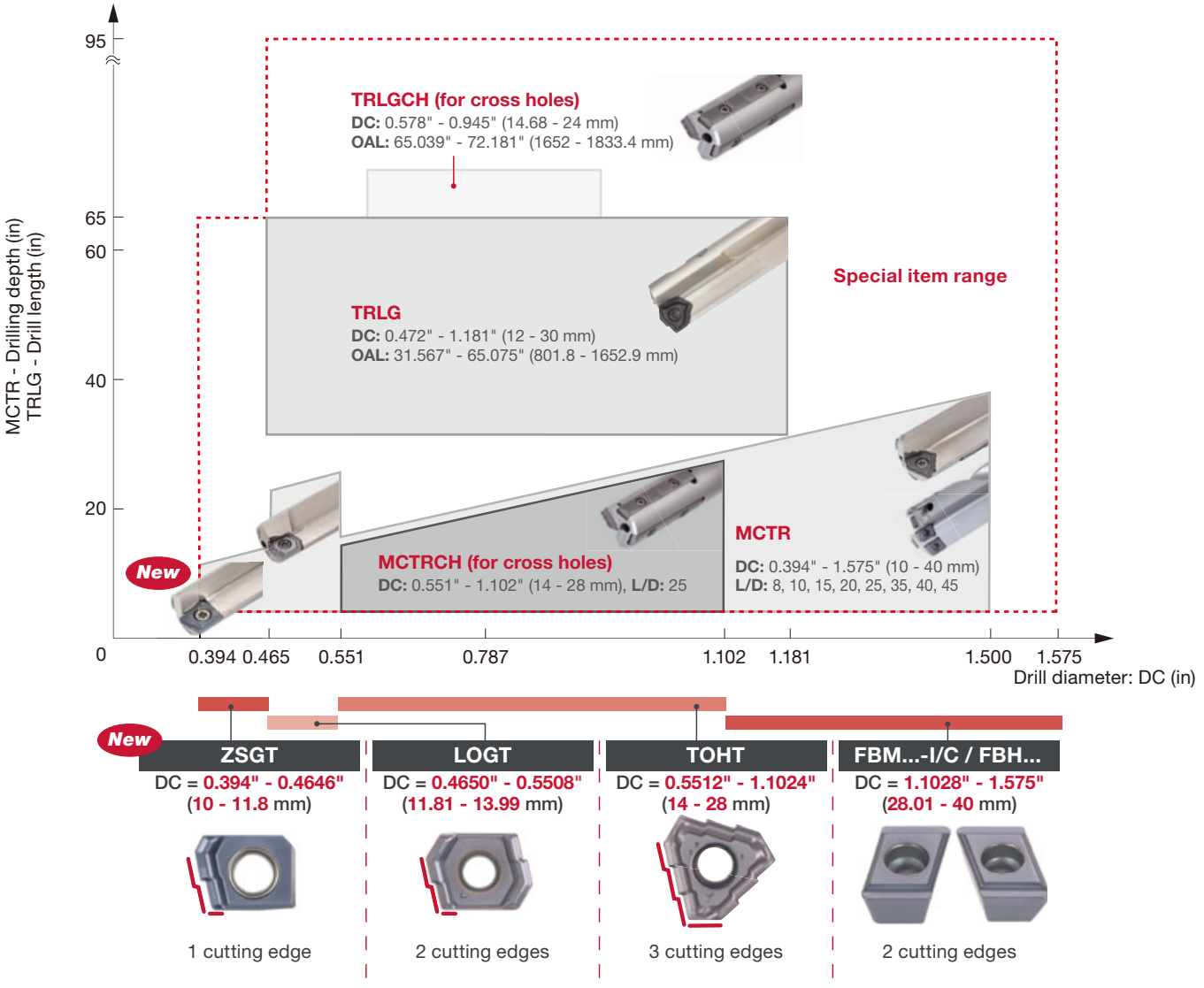
Drill series	Designation	Shape	Drill diameter (mm)	Effective Cutting edge	L/D	Coolant supply	IT class	Straightness (mm)	Machine: Lathes	Machine: Vertical machining centers	Machine: Horizontal machining centers	Machine: Gundrill machines	Workpiece material: P	M	K	N	S	H	Note	Page
DEEP T DRILL	MCTR		0.437" - 1.575", ø10 - ø40 mm	1	8 - 45	Int.	IT10-11	0.1/100	○	○	○		★	☆	★	☆	☆	☆	Indexable	J108 -
	MCTRCH		0.578" - 0.937", ø14 - ø28 mm	1	25	Int.	IT10-11	0.1/100	○	○	○		★	☆	★	☆	☆	☆	Indexable	J117
	TRLG		0.500" - 0.531", ø12 - ø30 mm	1	801.8 - 1652.9 mm	Int.	IT10-11	0.1/100	△	△	△	○	★	☆	★	☆	☆	☆	Indexable	J119-
	TRLGCH		0.578" - 0.957", ø14.68 - ø24 mm	1	1652 - 1833.4 mm	Int.	IT10-11	0.1/100	△	△	△	○	★	☆	★	☆	☆	☆	Indexable	J121
Brazed Gundrill	SLJ		ø3 - ø12.2 mm	1	400 - 1650 mm	Int.	IT7-8	0.1/100	△	△	△	○	☆	☆	★	★	☆	☆	Brazed	J131

DEEP TRI DRILL



Smallest diameter indexable gun drill - DeepTri-Drill expansion down to ø0.394", ø10 mm

Wide range of solutions for various deep hole applications

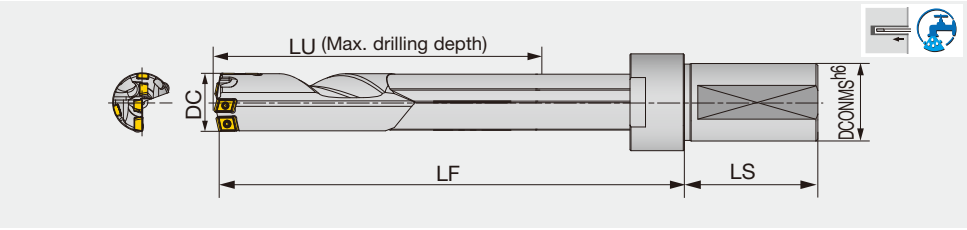


Reference pages: J108 - J130, Technical references → L090 -

DEEP TRI DRILL
MCTR-F L/D=8

Indexable gun drill, L/D = 8, for lathes and machining centers





Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR33.10XFM40-8	33.1	40	275	69	350	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.10XFM40-8	39.1	40	323	69	407	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
33.1, 39.1	0 / - 0.07	+ 0.05 / - 0.1

Max. DC = 40: Available tailor-made tools

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR33.1..., MCTR39.1...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

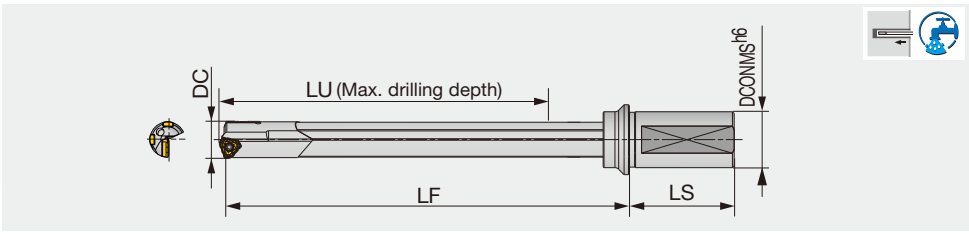
Recommended clamping torque: CSTB2.5 = 1.3 N·m, CSTB-3S = 2.3 N·m

Reference pages: Inserts, Guide pads → J126 - J128, Standard cutting conditions → J130

MCTR L/D=10

Indexable gun drill, L/D = 10, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR15.88XU25.4-10	0.625	1.000	6.378	2.205	7.756	TOHT07...	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-10	0.687	1.000	7.173	2.205	8.661	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-10	0.718	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-10	0.734	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-10	0.750	1.000	7.992	2.205	9.567	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-10	0.785	1.250	7.992	2.362	10.039	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-10	0.812	1.250	8.394	2.362	10.039	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-10	0.875	1.250	9.189	2.362	10.945	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-10	0.937	1.250	9.976	2.362	11.850	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-10	1.000	1.250	10.378	2.362	12.283	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-10	1.062	1.250	11.165	2.362	13.189	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR16.00XM25A-10	16	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-10	16.5	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-10	17	25	182.2	56	220	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.45XU25.4A-10	17.45	25.4	182.2	56	220	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-10	18	25	192.2	56	232	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-10	18.24	25.4	193	56	232	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-10	18.64	25.4	193	56	232	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.00XM25-10	19	25	203	56	243	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-10	19.05	25.4	203	56	243	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-10	19.94	31.75	213	60	255	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.00XM32-10	20	32	213	60	255	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-10	20.62	31.75	213.2	60	255	TOHT10..	GP06-085, GP06-20-085-DC
MCTR21.00XM32-10	21	32	223.2	60	266	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-10	22	32	233.4	60	278	TOHT11...	GP06-100, GP06-20-100-DC
MCTR22.23XU31.75-10	22.23	31.75	233.4	60	278	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.00XM32-10	23	32	243.4	60	289	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-10	23.8	31.75	253.4	60	301	TOHT11..	GP06-100, GP06-20-100-DC
MCTR24.00XM32-10	24	32	253.4	60	301	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-10	25	32	263.4	60	312	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-10	25.4	31.75	263.7	60	312	TOHT12..	GP06, GP06-20-120-DC
MCTR26.00XM40-10	26	40	273.7	70	324	TOHT12...	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-10	26.97	31.75	283.7	60	335	TOHT12..	GP06, GP06-20-120-DC
MCTR27.00XM40-10	27	40	283.7	70	335	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-10	28	40	283.7	70	337	TOHT12...	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.625 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
16 - 28	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS






Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR16... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

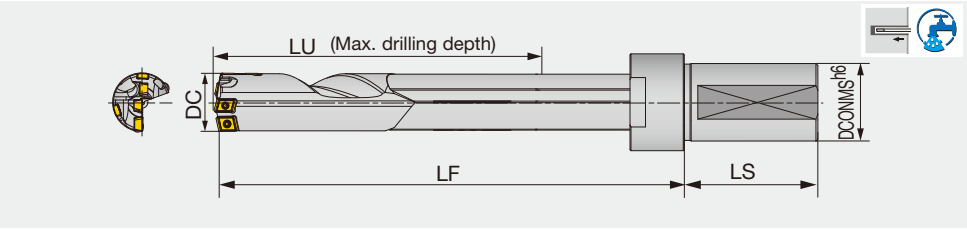
Recommended clamping torque: SR34-506 = 0.66 lb·ft, SR34-508 = 0.9 lb·ft, SR14-560/S = 0.89 lb·ft, SR14-571/S = 3.2 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

DEEP TRI DRILL
MCTR-F L/D=10

Indexable gun drill, L/D = 10, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-10	1.125	1.250	11.520	2.717	14.173	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-10	1.250	1.250	12.717	2.717	15.551	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-10	1.375	1.250	13.902	2.717	16.850	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-10	1.500	1.250	15.488	2.717	18.661	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-10	28.58	31.75	292.6	69	360	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR29.00XFM40-10	29	40	292.6	69	360	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-10	30	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-10	31	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-10	31.75	31.75	323	69	395	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-10	32	40	323	69	395	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-10	33	40	333.1	69	406	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-10	34	40	343	69	418	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR34.93XFU31.75-10	34.93	31.75	353.1	69	428	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-10	35	40	353.1	69	428	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-10	36	40	363.1	69	441	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-10	37	40	373	69	451	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-10	38	40	383.1	69	464	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-10	38.1	31.75	393.4	69	474	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR39.00XFM40-10	39	40	393.4	69	474	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-10	40	40	403.3	69	487	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)	DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004	28.58 - 40	0 / - 0.07	+ 0.05 / - 0.1

Max. DC = 40: Available tailor-made tools

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

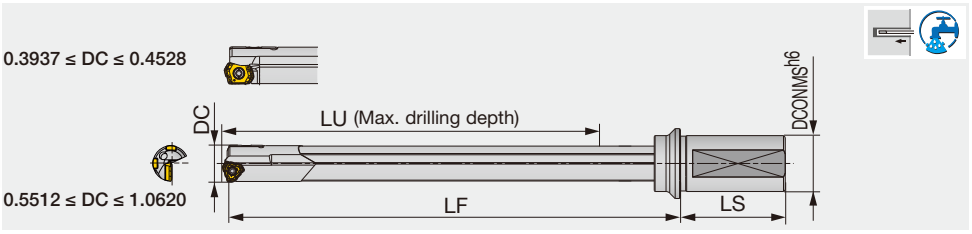
Recommended clamping torque: SR34-508 = 0.66 lb·ft, CSTB-2.2 = 0.74 lb·ft, CSTB-2.5 = 0.96 lb·ft, CSTB-3S = 1.70 lb·ft

Reference pages: Inserts, Guide pads → J126 - J128, Standard cutting conditions → J130

MCTR L/D=15

Indexable gun drill, L/D = 15, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-15	0.437	0.750	7.154	1.968	8.228	LOGT06..	GP04-055, GP04-16-055-DC
MCTR12.70XU25.4-15	0.500	1.000	7.748	2.205	9.016	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-15	0.531	1.000	8.339	2.205	9.646	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-15	0.562	1.000	8.937	2.205	10.276	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-15	0.625	1.000	9.528	2.205	10.984	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-15	0.687	1.000	10.717	2.205	12.205	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-15	0.718	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-15	0.734	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-15	0.750	1.000	11.929	2.205	13.504	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-15	0.785	1.250	12.520	2.362	14.173	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-15	0.812	1.250	12.528	2.362	14.173	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-15	0.875	1.250	13.717	2.362	15.472	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-15	0.937	1.250	14.898	2.362	16.772	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-15	1.000	1.250	15.500	2.362	17.402	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-15	1.062	1.250	16.681	2.362	18.701	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-15	12	20	196.8	50	225	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-15	12.5	20	196.8	50	226	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.70XU25.4-15	12.7	25.4	196.8	56	229	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.00XM25-15	13	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-15	13.49	25.4	211.8	56	245	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.50XM25-15	13.5	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-15	14	25	227	56	245	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.27XU25.4-15	14.27	25.4	227	56	261	TOHT07..	GP05-060, GP05-18-060-DC
MCTR14.50XM25-15	14.5	25	227	56	262	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-15	15	25	242	56	278	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-15	15.88	25.4	242	56	279	TOHT07..	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-15	16	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-15	16.5	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-15	17	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.45XU25.4A-15	17.45	25.4	272.2	56	310	TOHT08..	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-15	17.5	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-15	18	25	287.2	56	327	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-15	18.24	25.4	288	56	327	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.50XM25-15	18.5	25	288	56	327	TOHT09...	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-15	18.64	25.4	288	56	327	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.00XM25-15	19	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-15	19.05	25.4	303	56	343	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.50XM25-15	19.5	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-15	19.94	31.75	318	60	360	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.00XM32-15	20	32	318	60	360	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-15	20.62	31.75	318.2	60	360	TOHT10..	GP06-085, GP06-20-085-DC
MCTR21.00XM32-15	21	32	333.2	60	376	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-15	22	32	348.4	60	393	TOHT11...	GP06-100, GP06-20-100-DC
MCTR22.23XU31.75-15	22.23	31.75	348.4	60	393	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.00XM32-15	23	32	363.4	60	409	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-15	23.8	31.75	378.4	60	426	TOHT11..	GP06-100, GP06-20-100-DC
MCTR24.00XM32-15	24	32	378.4	60	426	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-15	25	32	393.4	60	442	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-15	25.4	31.75	393.7	60	442	TOHT12..	GP06, GP06-20-120-DC
MCTR26.00XM40-15	26	40	408.7	70	459	TOHT12...	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-15	26.97	31.75	423.7	60	475	TOHT12..	GP06, GP06-20-120-DC
MCTR27.00XM40-15	27	40	423.7	70	475	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-15	28	40	423.7	70	477	TOHT12...	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
12 - 13.99	0 / - 0.08	+ 0.05 / - 0.11
14 - 28	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS






Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

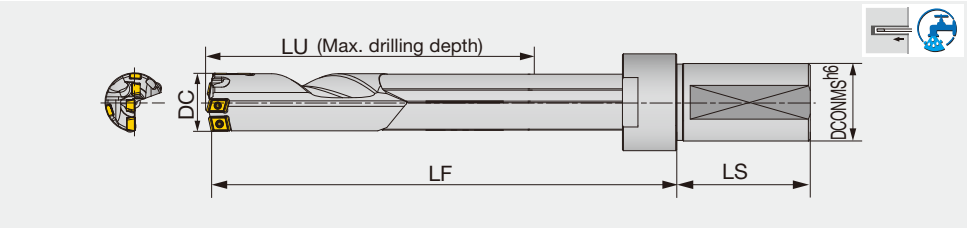
Recommended clamping torque: CSPB-2L043 = 0.52 lb·ft, SR34-506 = 0.66 lb·ft, SR34-508 = 0.66 lb·ft, SR14-560/S = 0.89 lb·ft, SR10503833L040 = 0.96 lb·ft, SR14-571/S = 3.2 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

DEEP TRI DRILL
MCTR-F L/D=15

Indexable gun drill, L/D = 15, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-15	1.125	1.250	17.228	2.717	19.882	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-15	1.250	1.250	19.016	2.717	21.850	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-15	1.375	1.250	20.791	2.717	23.740	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-15	1.500	1.250	23.165	2.717	26.339	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-15	28.58	31.75	437.6	69	505	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR29.00XFM40-15	29	40	437.6	69	505	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-15	30	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-15	31	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-15	31.75	31.75	483	69	555	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-15	32	40	483	69	555	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-15	33	40	498.1	69	571	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-15	34	40	513	69	588	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR34.93XFU31.75-15	34.93	31.75	528.1	69	603	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-15	35	40	528.1	69	603	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-15	36	40	543.1	69	621	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-15	37	40	558	69	636	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-15	38	40	573.1	69	654	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-15	38.1	31.75	588.4	69	669	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR39.00XFM40-15	39	40	588.4	69	669	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-15	40	40	603.3	69	687	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
28.58 - 40	0 / - 0.07	+ 0.05 / - 0.1

Max. DC = 40: Available tailor-made tools

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven. This, however, will not affect the performance of the drill.

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

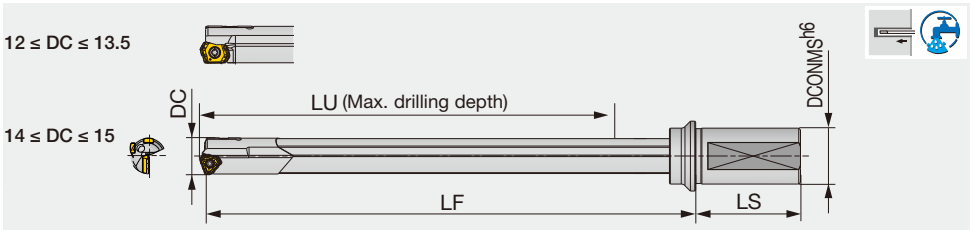
Recommended clamping torque: SR34-508 = 0.66 lb·ft, CSTB-2.2 = 0.74 lb·ft, CSTB-2.5 = 0.96 lb·ft, CSTB-3S = 1.7 lb·ft

Reference pages: Inserts, Guide pads → J126 - J128, Standard cutting conditions → J130

MCTR L/D=20

Indexable gun drill, L/D = 20, for lathes and machining centers





Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-20	12	20	261.8	50	290	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-20	12.5	20	261.8	50	291	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-20	13	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-20	13.5	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-20	14	25	302	56	336	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-20	14.5	25	302	56	337	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-20	15	25	322	56	358	TOHT07...	GP05-060, GP05-18-060-DC

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
12 - 13.99	0 / - 0.08	+ 0.05 / - 0.11
14 - 15	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS






Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12...-MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14...-MCTR15...	SR14-560/S	T-8F	SR34-508	T-7F

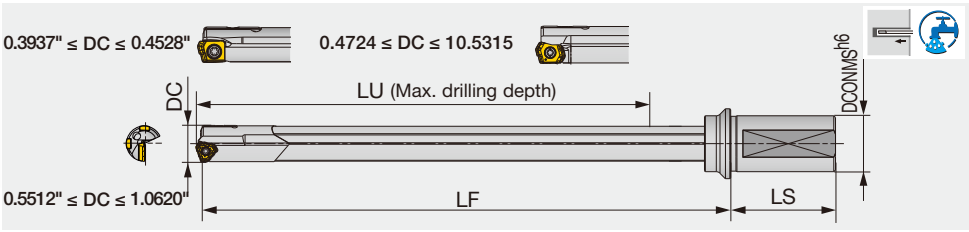
Recommended clamping torque: CSPB-2L043 = 0.7 N·m, SR34-508 = 0.9 N·m, SR14-560/S = 1.2 N·m, SR10503833L040 = 1.3 N·m

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

DEEP TRI DRILL
MCTR L/D=25

Indexable gun drill, L/D = 25, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-25	0.437	0.75	11.878	1.968	12.953	LOGT06..	GP04-055, GP04-16-055-DC
MCTR12.70XU25.4-25	0.500	1.000	12.866	2.205	14.134	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-25	0.531	1.000	13.850	2.205	15.157	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-25	0.562	1.000	14.843	2.205	16.181	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-25	0.625	1.000	15.827	2.205	17.283	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-25	0.687	1.000	17.803	2.205	19.291	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-25	0.750	1.000	19.803	2.205	21.378	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-25	0.785	1.250	20.787	2.362	22.441	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-25	0.812	1.250	20.795	2.362	22.441	TOHT10..	GP06-085, GP06-20-085-DC
MCTR21.46XU31.75-25	0.845	1.250	21.78	2.362	23.465	TOHT10...	GP06-100, GP06-20-100-DC
MCTR22.23XU31.75-25	0.875	1.250	22.772	2.362	24.528	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-25	1.000	1.250	25.732	2.362	27.638	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-25	1.062	1.250	27.701	2.362	29.724	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU38.1-25	1.062	1.500	27.701	2.756	29.724	TOHT12...	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.437 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR11..., 12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - ...MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

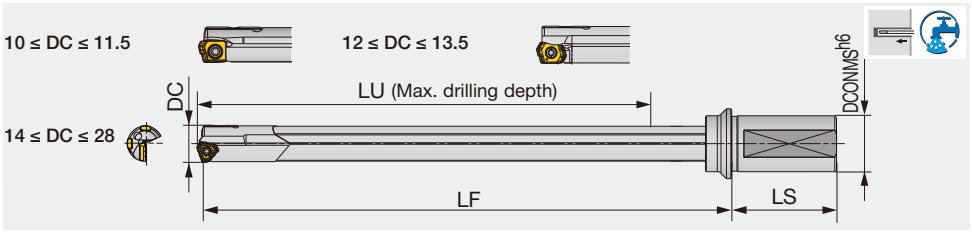
Recommended clamping torque: CSPB-2L043 = 0.52 lb·ft, SR34-506 = 0.66 lb·ft, SR34-508 =0.66 lb·ft, SR14-560/S = 0.89 lb·ft, SR10503833L040 = 0.96 lb·ft, SR14-571/S = 2.36 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

MCTR L/D=25

Indexable gun drill, L/D = 25, for lathes and machining centers





Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR10.00XM20-25	10	20	264.2	50	289.5	ZSGT06...	GP04-16-045-DC
MCTR11.00XM20-25	11	20	301.7	50	329	ZSGT06...	GP04-16-050-DC
MCTR11.50XM20-25	11.5	20	301.7	50	329	ZSGT06...	GP04-16-050-DC
MCTR12.00XM20-25	12	20	326.8	50	355	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-25	12.5	20	326.8	50	356	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.70XU25.4-25	12.7	25.4	326.8	56	359	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-25	13	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-25	13.49	25.4	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-25	13.5	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.27XU25.4-25	14.27	25.4	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-25	14.5	25	377	56	412	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-25	15.88	25.4	402	56	439	TOHT07...	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-25	16.5	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-25	17	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.45XU25.4A-25	17.45	25.4	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-25	17.5	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-25	18.24	25.4	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC
MCTR18.50XM25-25	18.5	25	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-25	18.64	25.4	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-25	19.05	25.4	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.50XM25-25	19.5	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-25	19.94	31.75	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-25	20.62	31.75	528.2	60	570	TOHT10...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-25	21	32	553.2	60	596	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-25	22	32	578.4	60	623	TOHT11...	GP06-100, GP06-20-100-DC
MCTR22.23XU31.75-25	22.23	31.75	578.4	60	623	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-25	23.8	31.75	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-25	25	32	653.4	60	702	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-25	25.4	31.75	653.7	60	702	TOHT12...	GP06, GP06-20-120-DC
MCTR26.00XM40-25	26	40	678.7	70	729	TOHT12...	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-25	26.97	31.75	703.7	60	755	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-25	27	40	703.7	70	755	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06, GP06-20-120-DC

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
10 - 13.99	0 / - 0.08	+ 0.05 / - 0.11
14 - 28	0 / - 0.07	+ 0.05 / - 0.1

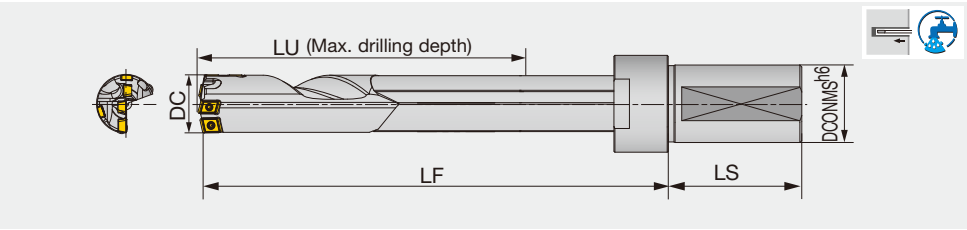
Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

DEEP TRI DRILL

MCTR-F L/D=25

Indexable gun drill, L/D = 25, for lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-25	1.125	1.250	31.614	2.717	31.299	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-25	1.250	1.250	34.571	2.717	34.449	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-25	1.375	1.250	38.520	2.717	37.520	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-25	1.500	1.250	978.40	2.717	41.693	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR30.00XFM40-25	30	40	777.9	69	848	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
28.58 - 38.1	0 / - 0.07	+ 0.05 / - 0.1

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven. This, however, will not affect the performance of the drill.

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR33.1... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

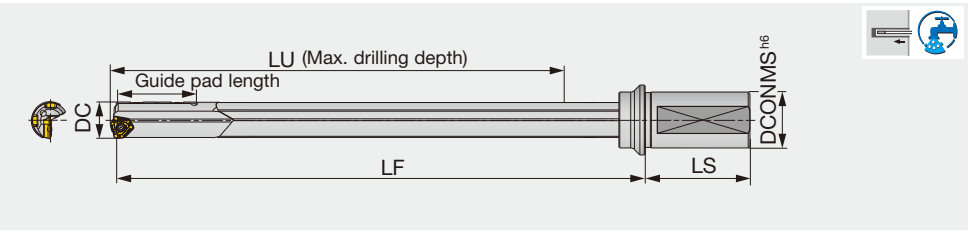
Recommended clamping torque：CSTB-2.5 = 0.96 lb·ft, CSTB-2.2 = 0.74 lb·ft, SR34-508 = 0.66 lb·ft, CSTB-3S = 1.7 lb·ft

Reference pages: Inserts, Guide pads → J126 - J128, Standard cutting conditions → J130

MCTRCH L/D=25

Indexable gun drill, L/D = 25, for drilling cross hole applications on CNC lathes and machining centers





Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.68XU25.4-25	0.578	1.000	14.843	2.205	16.220	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH15.06XU25.4-25	0.593	1.000	15.827	2.205	17.244	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH14.68XU25.4-25	14.68	25.4	377	56	412	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH15.06XU25.4-25	15.06	25.4	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH18.24XU25.4-25	18.24	25.4	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH18.64XU25.4-25	18.64	25.4	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH23.80XU31.75-25	23.8	31.75	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06, GP06-20-120-DC	40

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.578 - 0.937	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
14 - 28	0 / - 0.09	+ 0.05 / - 0.12

SPARE PARTS



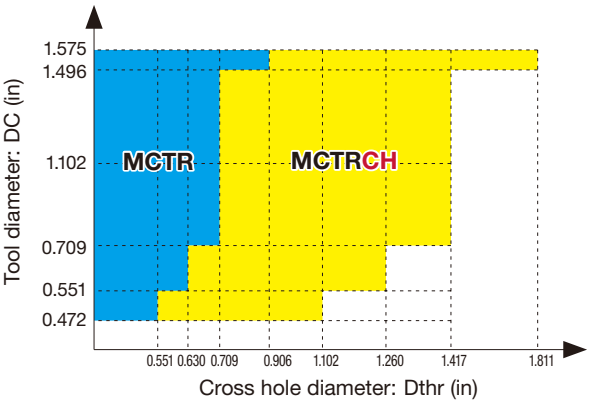


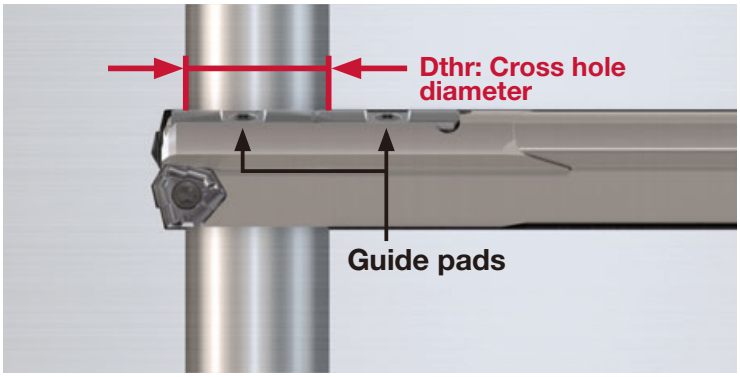

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTRCH14... - MCTRCH20...	SR14-560/S	T-8F	SR34-508	T-7F
MCTRCH23... - MCTRCH24...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTRCH28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque: SR34-508 = 0.66 lb·ft, SR14-560/S = 0.89 lb·ft, SR14-571/S = 2.36 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

■ Tool selection with regard to cross hole diameters and drill diameters



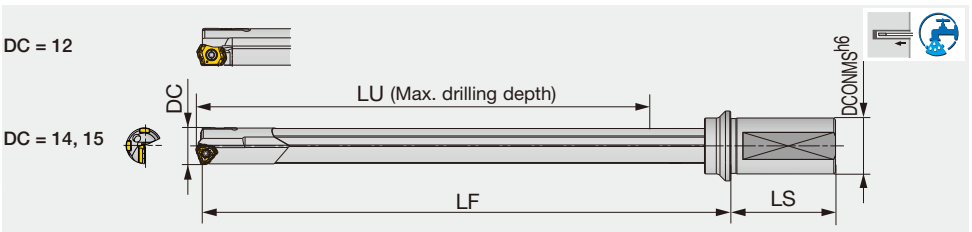


Note: An MCTR drill can be used when the cross hole diameter (Dthr) is smaller than the drill's guide pad length.
When the cross hole diameter is larger than the drill's guide pad length, use an MCTRCH drill.

DEEP TRI DRILL
MCTR L/D=35, 40, 45

Indexable gun drill, L/D = 35, 40, 45, for lathes and machining centers





Inch	DC	L/D	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-35	0.4374	35	0.750	16.602	1.968	17.677	LOGT06...	GP04-055, GP04-16-055-DC
MCTR11.11XU19.05-45	0.4374	40	0.750	21.327	1.968	22.402	LOGT06...	GP04-055, GP04-16-055-DC

Metric	DC	L/D	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-35	12	35	20	456.8	50	485	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.00XM20-40	12	40	20	521.8	50	550	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.00XM20-45	12	45	20	586.8	50	615	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-35	14	35	25	527	56	561	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.00XM25-40	14	40	25	602	56	636	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.00XM25-35	15	35	25	562	56	598	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-40	15	40	25	642	56	678	TOHT07...	GP05-060, GP05-18-060-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.4374	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
12 - 13.99	0 / - 0.08	+ 0.05 / - 0.11
14 - 15	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS



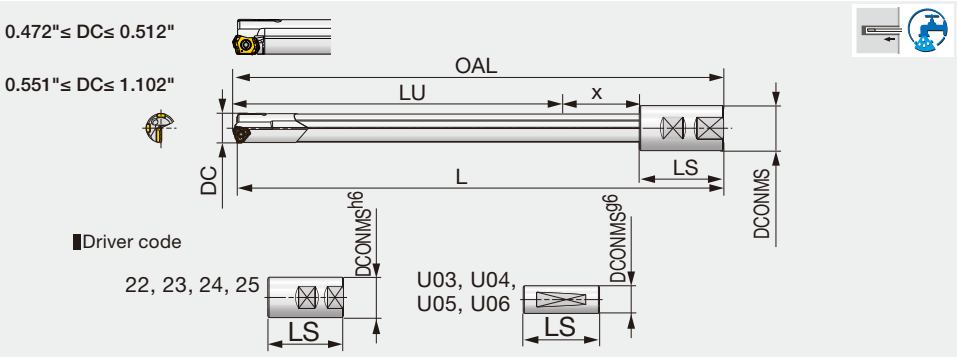
Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR10... - MCTR11.5...	SR-M2.5X0.35L3.8	T-7F	CSTB-2	T-6F
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque: SR-M2.5X0.35L3.8 = 0.66 lb·ft, CSTB-2 = 0.52 lb·ft, SR10503833L040 = 0.96 lb·ft, CSPB-2L043 = 0.52 lb·ft, SR14-560/S = 0.89 lb·ft, SR34-508 = 0.66 lb·ft, SR34-506 = 0.66 lb·ft, SR14-571/S = 2.36 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

Indexable gun drill for gun drill machines





Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.70X1219-U04	0.500	47.992	1.000	44.559	48.063	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG12.70X1524-U04	0.500	60.000	1.000	56.567	60.071	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1219-U04	0.531	47.992	1.000	44.520	48.063	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1527-U04	0.531	60.118	1.000	56.646	60.189	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.00X800-U03	12	800	19.05	713.8	801.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X800-22	12	800	20	733.8	801.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-U03	12	1000	19.05	913.8	1001.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-22	12	1000	20	933.8	1001.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-U03	12	1650	19.05	1563.8	1651.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-22	12	1650	20	1583.8	1651.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.70X1219-U04	12.7	1219	25.4	1131.8	1220.8	70	19	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG12.70X1524-U04	12.7	1524	25.4	1436.8	1525.8	70	19	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.00X800-U04	13	800	25.4	711.8	801.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X800-23	13	800	25	725.8	801.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-U04	13	1000	25.4	911.8	1001.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-23	13	1000	25	925.8	1001.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-U04	13	1650	25.4	1561.8	1651.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-23	13	1650	25	1575.8	1651.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.49X1219-U04	13.49	1219	25.4	1130.8	1220.8	70	20	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1527-U04	13.49	1527	25.4	1438.8	1528.8	70	20	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG14.00X800-23	14	800	25	725	802	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X800-U04	14	800	25.4	711	802	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-23	14	1000	25	925	1002	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-U04	14	1000	25.4	911	1002	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-23	14	1650	25	1575	1652	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-U04	14	1650	25.4	1561	1652	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-23	14.5	800	25	724	802	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-U04	14.5	800	25.4	710	802	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-23	14.5	1000	25	924	1002	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-U04	14.5	1000	25.4	910	1002	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-23	14.5	1650	25	1574	1652	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-U04	14.5	1650	25.4	1560	1652	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-23	15	800	25	723	802	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-U04	15	800	25.4	709	802	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-23	15	1000	25	923	1002	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-U04	15	1000	25.4	909	1002	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG16.00X800-23A	16	800	25	722.2	802.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X800-U04A	16	800	25.4	708.2	802.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-23A	16	1000	25	922.2	1002.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-U04A	16	1000	25.4	908.2	1002.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-23A	16	1500	25	1422.2	1502.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-U04A	16	1500	25.4	1408.2	1502.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X800-23A	17	800	25	721.2	802.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X800-U04A	17	800	25.4	707.2	802.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-23A	17	1000	25	921.2	1002.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-U04A	17	1000	25.4	907.2	1002.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG18.00X800-23A	18	800	25	719.2	802.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X800-U04A	18	800	25.4	705.2	802.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-23A	18	1000	25	919.2	1002.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-U04A	18	1000	25.4	905.2	1002.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-23A	18	1500	25	1419.2	1502.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-U04A	18	1500	25.4	1405.2	1502.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.50X1500-23	18.5	1500	25	1420	1503	56	27	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG18.50X1500-U04	18.5	1500	25.4	1406	1503	70	27	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-23	19	800	25	719	803	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-U04	19	800	25.4	705	803	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-23	19	1000	25	919	1003	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-U04	19	1000	25.4	905	1003	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-24	20	800	32	713	803	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-U05	20	800	31.75	703	803	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-24	20	1000	32	913	1003	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-U05	20	1000	31.75	903	1003	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-24	21	1000	32	912.2	1003.2	60	31	24	TOHT10...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-U05	21	1000	31.75	902.2	1003.2	70	31	U05	TOHT10...	GP06-085, GP06-20-085-DC
TRLG22.00X1000-24	22	1000	32	910.4	1003.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1000-U05	22	1000	31.75	900.4	1003.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-24	22	1500	32	1410.4	1503.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-U05	22	1500	31.75	1400.4	1503.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-24	23	1000	32	909.4	1003.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-U05	23	1000	31.75	899.4	1003.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-24	23	1500	32	1409.4	1503.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-U05	23	1500	31.75	1399.4	1503.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-24	24	1000	32	907.4	1003.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-U05	24	1000	31.75	897.4	1003.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-24	24	1500	32	1407.4	1503.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-U05	24	1500	31.75	1397.4	1503.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-24	25	1000	32	906.4	1003.4	60	37	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-U05	25	1000	31.75	896.4	1003.4	70	37	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG26.00X1000-25	26	1000	40	894.7	1003.7	70	39	25	TOHT12...	GP06, GP06-20-120-DC
TRLG26.00X1000-U06	26	1000	38.1	894.7	1003.7	70	39	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-25	27	1000	40	893.7	1003.7	70	40	25	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-U06	27	1000	38.1	893.7	1003.7	70	40	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-25	28	1000	40	891.7	1003.7	70	42	25	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-U06	28	1000	38.1	891.7	1003.7	70	42	U06	TOHT12...	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
12 - 13.99	0 / - 0.08	+ 0.05 / - 0.11
14 - 28	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS





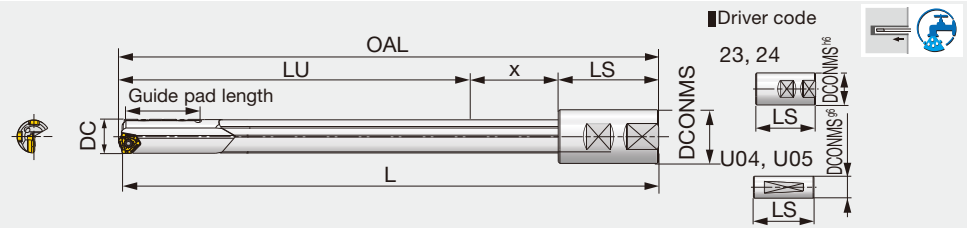

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLG12... - TRLG13...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
TRLG14... - TRLG20...	SR14-560/S	T-8F	SR34-508	T-7F
TRLG21...	SR34-506	T-9F	SR34-508	T-7F
TRLG22... - TRLG25...	SR14-571/S	T-10/5	SR34-508	T-7F
TRLG26... - TRLG28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque : CSPB-2L043 = 0.52 lb·ft, SR34-508 = 0.66 lb·ft, SR34-506 = 0.66 lb·ft, SR14-560/S = 0.89 lb·ft, SR10503833L040 = 0.96 lb·ft, SR14-571/S = 2.36 lb·ft, SR14-506 = 3.54 lb·ft

Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

Indexable gun drill for drilling cross hole applications on gun drilling machines





Inch	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH14.68X1830-U05	0.578	72.047	1.250	68.504	72.126	2.756	0.866	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH15.06X1830-U05	0.593	72.047	1.250	68.465	72.126	2.756	0.906	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH18.24X1830-U05	0.718	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH18.64X1830-U05	0.734	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH23.42X1830-U05	0.922	72.047	1.250	68.087	72.181	2.756	1.339	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575
TRLGCH23.80X1830-U05	0.937	72.047	1.250	68.008	72.181	2.756	1.417	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH14.68X1830-U05	14.68	1830	31.75	1740	1832	70	22	U05	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH15.06X1830-U05	15.06	1830	31.75	1739	1832	70	23	U05	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH18.00X1650-U04A	18	1650	25.4	1555.2	1652.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH18.00X1650-23A	18	1650	25	1569.2	1652.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH18.24X1830-U05	18.24	1830	31.75	1736	1833	70	27	U05	TOHT09...	GP06-085, GP06-20-085-DC	40
TRLGCH18.64X1830-U05	18.64	1830	31.75	1736	1833	70	27	U05	TOHT09...	GP06-085, GP06-20-085-DC	40
TRLGCH23.00X1650-U05	23	1650	31.75	1549.4	1653.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH23.00X1650-24	23	1650	32	1559.4	1653.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH23.42X1830-U05	23.42	1830	31.75	1729.4	1833.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH23.80X1830-U05	23.8	1830	31.75	1727.4	1833.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-U05	24	1650	31.75	1547.4	1653.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-24	24	1650	32	1557.4	1653.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC	40

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
ø0.578 - ø0.945	0 / - 0.004	+ 0.002 / - 0.005

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
14.68 - 24	0 / - 0.09	+ 0.05 / - 0.12

SPARE PARTS

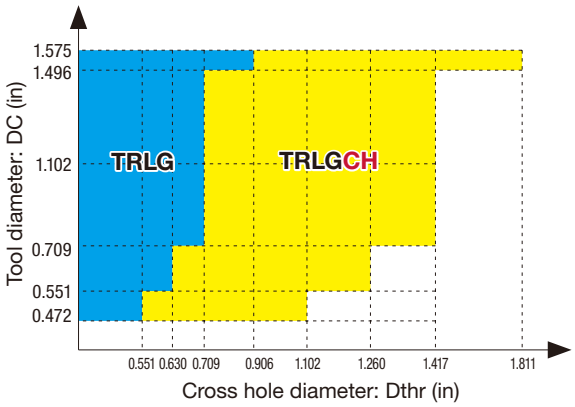


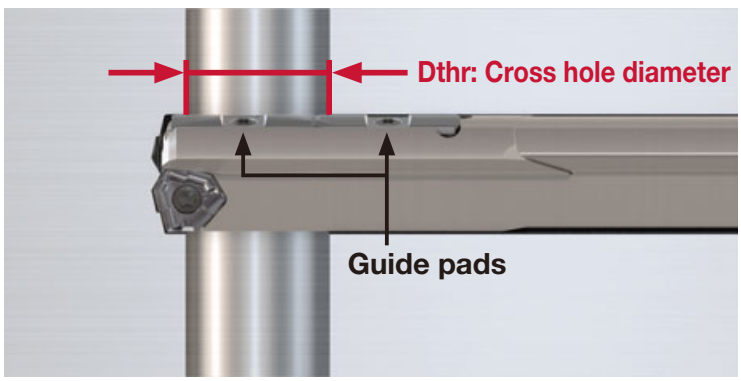



Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLGCH14... - TRLGCH18...	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH23... - TRLGCH24...	SR14-571/S	T-10/5	SR34-508	T-7F

Recommended clamping torque: SR34-508 = 0.66 lb·ft, R14-560/S = 0.89 lb·ft, SR14-571/S = 2.36 lb·ft

■ Tool selection with regard to cross hole diameters and drill diameters





Note: A TRLG drill can be used when the cross hole diameter (Dthr) is smaller than the drill's guide pad length.
When the cross hole diameter is larger than the drill's guide pad length, use an TRLGCH drill.

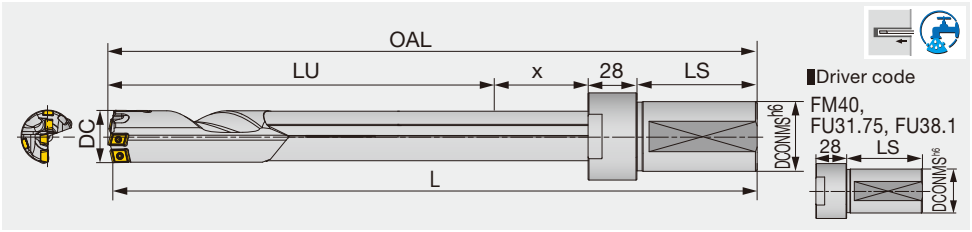
Reference pages: Inserts, Guide pads → J125 - J128, Standard cutting conditions → J130

DEEP TRI DRILL

TRLG-F

Indexable gun drill for gun drill machines





Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG29.36X1828-FU31.75	1.156	71.969	1.250	66.520	72.071	27.165	1.732	FU31.75	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG30.00X1000-FM40	30	1000	40	860.9	1002.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FM40	30	1650	40	1510.9	1652.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FU38.1	30	1650	38.1	1510.9	1652.9	69	45	FU38.1	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC (in)	Tool diameter tolerance (in)	Applicable tolerance range of hole diameter (in)
1.156	0 / - 0.003	+ 0.002 / - 0.004

DC (mm)	Tool diameter tolerance (mm)	Applicable tolerance range of hole diameter (mm)
30	0 / - 0.07	+ 0.05 / - 0.1

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
TRLG29.36...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7 F	SR34-508	T-7F
TRLG30...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F

Recommended clamping torque: SR34-508 = 0.66 lb·ft, CSTB-2.5 = 0.96 lb·ft

Reference pages: Inserts, Guide pads → J126 - J128, Standard cutting conditions → J130

AVAILABLE RANGE OF TAILOR-MADE DRILL BODIES (FOR LATHES AND MACHINING CENTERS)

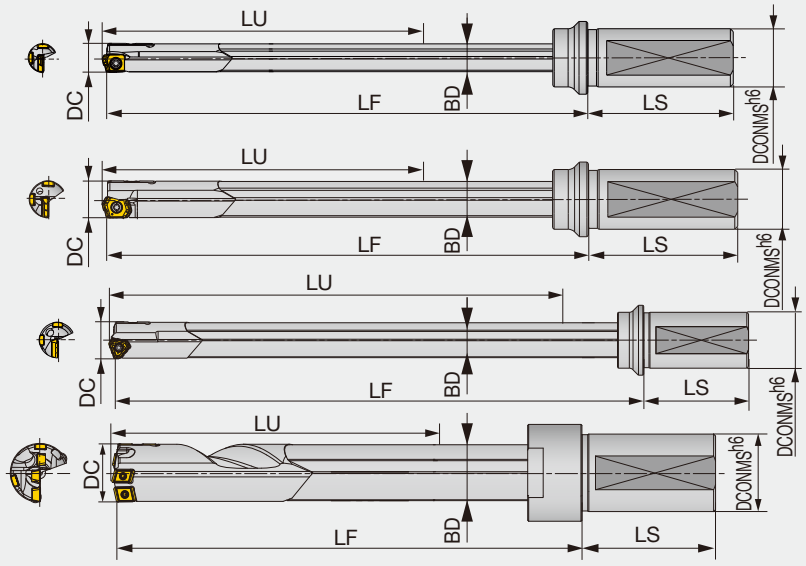
MCTR, MCTRCH (FOR DRILLING CROSS HOLE APPLICATIONS)

10 mm ≤ DC ≤ 11.8 mm
0.437" ≤ DC ≤ 0.465"

11.8 mm < DC < 14 mm
0.465" ≤ DC ≤ 0.561"

14 mm ≤ DC ≤ 28 mm
0.551" ≤ DC ≤ 1.102"

28 mm < DC ≤ 40 mm
1.102" ≤ DC ≤ 1.575"



DC	DCONMS	LU	LS	LF	BD
10 - 10.39	20	138 - 526	50	164 - 551	9.6
10.4 - 10.69	20	137 - 551	50	164 - 577	9.9
10.7 - 10.99	20	137 - 551	50	164 - 577	10.2
11 - 11.49	20	136 - 601	50	164 - 628	10.5
11.5 - 11.8	20	136 - 601	50	164 - 628	11
11.81 - 12.49	20	135 - 651	50	164 - 679	11.5
12.5 - 12.99	20	134 - 651	50	164 - 680	12
13 - 13.49	25	130 - 701	56	164 - 734	12.5
13.5 - 13.99	25	130 - 701	56	164 - 734	13
14 - 14.49	25	136 - 752	56	170 - 786	13.5
14.5 - 14.99	25	135 - 752	56	170 - 787	14
15 - 15.99	25	134 - 802	56	170 - 838	14.5
16 - 16.79	25	134 - 852	56	171 - 888	15.5
16.8 - 17.69	25	133 - 902	56	171 - 939	16.2
17.7 - 18.69	25	131 - 952	56	171 - 991	17.2
18.7 - 19.69	25	130 - 1003	56	170 - 1043	18.2
19.7 - 20.69	32	128 - 1053	60	170 - 1095	19
20.7 - 21.69	32	128 - 1103	60	171 - 1145	20
21.7 - 22.69	32	126 - 1153	60	171 - 1197	21
22.7 - 23.69	32	125 - 1203	60	171 - 1248	22

DC	DCONMS	LU	LS	LF	BD
23.7 - 24.69	32	123 - 1253	60	171 - 1300	23
24.7 - 25.69	32	122 - 1303	60	171 - 1351	24
25.7 - 26.69	40	120 - 1353	70	171 - 1403	25
26.7 - 27.69	40	119 - 1403	70	171 - 1454	26
27.7 - 28	40	117 - 1403	70	171 - 1456	27
28.01 - 29	40	154 - 1452	69	222 - 1519	27
29.01 - 29.99	40	152 - 1502	69	222 - 1571	28
30 - 31	40	151 - 1552	69	222 - 1622	29
31.01 - 32	40	149 - 1602	69	222 - 1674	30
32.01 - 33	40	148 - 1653	69	222 - 1726	31
33.01 - 34	40	146 - 1702	69	222 - 1777	32
34.01 - 35	40	146 - 1753	69	222 - 1828	32
35.01 - 36	40	143 - 1803	69	222 - 1881	34
36.01 - 37	40	143 - 1852	69	222 - 1930	34
37.01 - 38	40	140 - 1903	69	222 - 1984	36
38.01 - 39	40	146 - 1953	69	227 - 2033	36
39.01 - 40	40	143 - 2003	69	227 - 2086	38

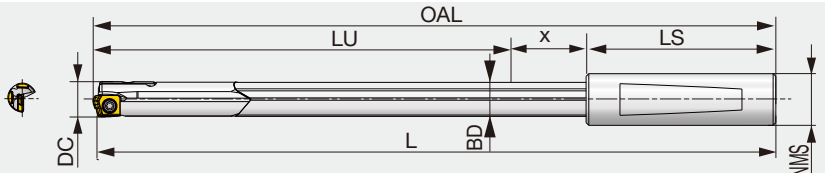
(Unit: mm)

Please provide the driver shape necessary for your request

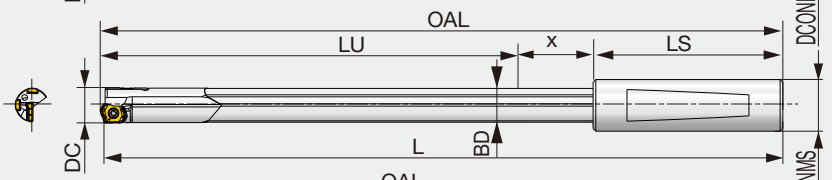
AVAILABLE RANGE OF TAILOR-MADE DRILL BODIES (FOR GUN DRILL MACHINES)

TRLG, TRLGCH (FOR DRILLING CROSS HOLE APPLICATIONS)

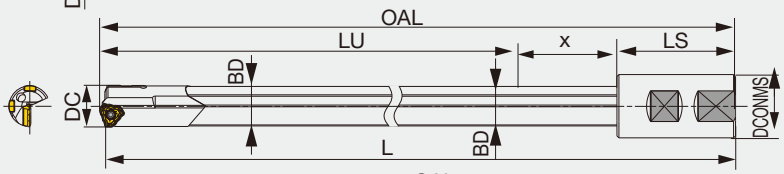
10 mm ≤ DC ≤ 11.8 mm
0.437" ≤ DC ≤ 0.465"



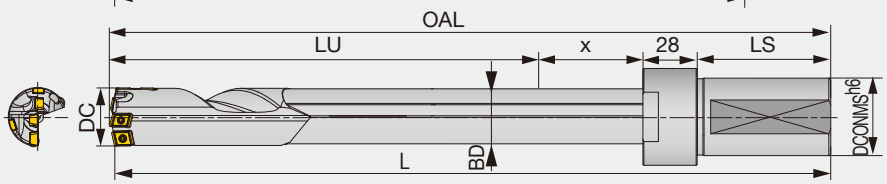
11.8 mm < DC < 14 mm
0.465" ≤ DC ≤ 0.561"



14 mm ≤ DC ≤ 28 mm
0.551" ≤ DC ≤ 1.102"



28 mm < DC ≤ 40 mm
1.102" ≤ DC ≤ 1.575"



DC	L	x	BD
10 - 10.39	400 - 1650	15	9.6
10.4 - 10.69	400 - 1650	16	9.9
10.7 - 10.99	400 - 1650	16	10.2
11 - 11.49	400 - 1650	17	10.5
11.5 - 11.99	400 - 1650	17	11
12 - 12.49	400 - 2400	18	11.5
12.5 - 12.99	400 - 2400	19	12
13 - 13.49	400 - 2400	20	12.5
13.5 - 13.99	400 - 2400	20	13
14 - 14.49	400 - 2400	21	13.5
14.5 - 14.99	400 - 2400	22	14
15 - 15.99	400 - 2400	23	14.5
16 - 16.79	400 - 2400	24	15.5
16.8 - 17.69	400 - 2400	25	16.2
17.7 - 18.69	400 - 2400	27	17.2
18.7 - 19.69	400 - 2400	28	18.2
19.7 - 20.69	400 - 2400	30	19
20.7 - 21.69	400 - 2400	31	20
21.7 - 22.69	400 - 2400	33	21
22.7 - 23.69	400 - 2400	34	22

DC	L	x	BD
23.7 - 24.69	400 - 2400	36	23
24.7 - 25.69	400 - 2400	37	24
25.7 - 26.69	400 - 2400	39	25
26.7 - 27.69	400 - 2400	40	26
27.7 - 28	400 - 2400	42	27
28.01 - 29	400 - 2400	42	27
29.01 - 29.99	400 - 2400	44	28
30 - 31	400 - 2400	45	29
31.01 - 32	400 - 2400	47	30
32.01 - 33	400 - 2400	48	31
33.01 - 34	400 - 2400	50	32
34.01 - 35	400 - 2400	50	32
35.01 - 36	400 - 2400	53	34
36.01 - 37	400 - 2400	53	34
37.01 - 38	400 - 2400	56	36
38.01 - 39	400 - 2400	56	36
39.01 - 40	400 - 2400	59	38

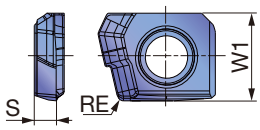
(Unit: mm)

Please provide the driver shape necessary for your request

INSERT

ZSGT-NDJ





P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

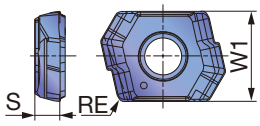
★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated AH9130	W1 (in)	S (in)	RE (in)
ZSGT060204R-NDJ	0.394	0.465	●	0.236	0.059	0.016

● : Line up
Package quantity = 10 pcs.

LOGT-NDJ





P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

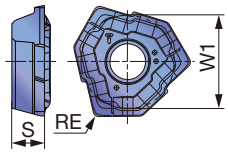
★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated AH9130	AH725	W1 (in)	S (in)	RE (in)
LOGT060204R-NDJ	0.465	0.551	●	●	0.279	0.079	0.016

● : Line up
Package quantity = 10 pcs.

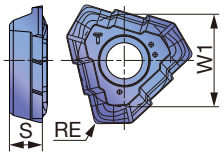
TOHT-NDJ (070..., 080...)





TOHT-NDJ (090... - 120...)





P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

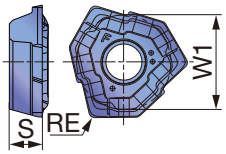
★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated AH9130	AH725	W1 (in)	S (in)	RE (in)
TOHT070304R-NDJ	0.551	0.630	●	●	0.303	0.091	0.016
TOHT080305R-NDJ	0.630	0.709	●	●	0.337	0.11	0.020
TOHT090305R-NDJ	0.709	0.787	●	●	0.328	0.118	0.020
TOHT100305R-NDJ	0.788	0.866	●	●	0.363	0.130	0.020
TOHT110405R-NDJ	0.866	0.984	●	●	0.409	0.150	0.020
TOHT120405R-NDJ	0.985	1.102	●	●	0.456	0.169	0.020

● : Line up
Package quantity = 10 pcs.

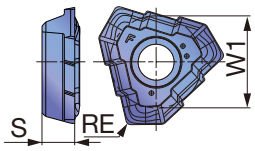
TOHT-NDL (07..., 08...)





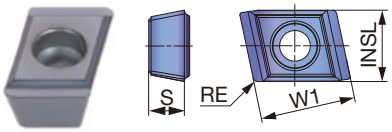
TOHT-NDL (09... - 12...)





| | | |

FBM-I (For intermediate)



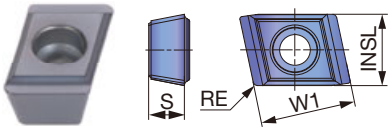
		AH9130	AH725	AH8015
P	Steel	★	☆	☆
M	Stainless	★	☆	☆
K	Cast iron	★	☆	☆
N	Non-ferrous	★	☆	☆
S	Superalloys	☆	☆	★
H	Hard materials	☆	☆	★

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH9130	Coated AH725	Coated AH8015	S (in)	DCN (in)	DCX (in)	RE (in)
FBM060304R-G-I	0.217	0.315	●	●	●	0.118	1.103	1.181	0.016
FBM060304R-DL-I	0.217	0.315		●		0.118	1.103	1.181	0.016
FBM070404R-G-I	0.256	0.394	●	●	●	0.157	1.181	1.575	0.016
FBM070404R-DL-I	0.256	0.394		●		0.157	1.181	1.575	0.016

● : Line up
Package quantity = 10 pcs.

FBH-P (For peripheral)



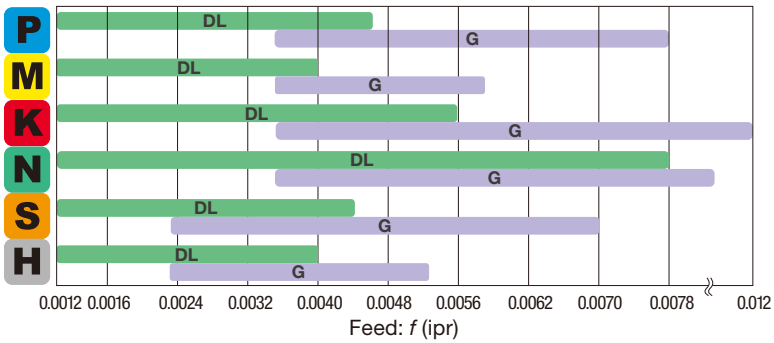
		AH9130	AH725	AH8015	UC3120
P	Steel	★	☆	☆	☆
M	Stainless	★	☆	☆	☆
K	Cast iron	★	☆	☆	☆
N	Non-ferrous	★	☆	☆	
S	Superalloys	☆	☆	★	☆
H	Hard materials	☆	☆	★	

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH9130	Coated AH725	Coated AH8015	Coated UC3120	S (in)	DCN (in)	DCX (in)	RE (in)
FBH060304R-G-P	0.236	0.315		●		▲	0.118	1.103	1.181	0.016
FBH060308R-G-P	0.236	0.315	●	●	●		0.118	1.103	1.181	0.031
FBH080404R-G-P	0.295	0.394		●		▲	0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●	●	●		0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394		●		▲	0.157	1.496	1.575	0.016
FBH090408R-G-P	0.354	0.394	●	●	●		0.157	1.496	1.575	0.031

● : Line up
▲ : To be discontinued
Package quantity = 10 pcs.

■ Recommended feed rates

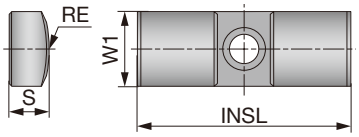


Note: For cross hole drilling, please use the DL type chipbreaker because the feed needs to be reduced.

CARBIDE GUIDE PADS

GP04, 05, 06, 07, 08





P	Steel	☆	★	☆
M	Stainless	☆	☆	★
K	Cast iron	☆	★	☆
N	Non-ferrous	☆	★	☆
S	Superalloys	☆	★	☆
H	Hard materials	☆	★	☆

★ : First choice
☆ : Second choice

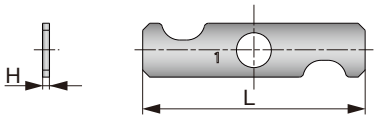
Designation	DCN (in)	DCX (in)	Coated			W1 (in)	INSL (in)	S (in)	RE (in)
			F1122	FH3125	FH3135				
GP04-16-045-DC	0.394	0.433		●		0.157	0.630	0.071	0.177
GP04-16-050-DC	0.433	0.472		●		0.157	0.630	0.071	0.197
GP04-055	0.472	0.551	●			0.157	0.630	0.079	0.217
GP04-16-055-DC	0.472	0.551		●	●	0.157	0.630	0.079	0.217
GP05-060	0.551	0.630	●			0.197	0.709	0.098	0.236
GP05-18-060-DC	0.551	0.630		●	●	0.197	0.709	0.098	0.236
GP05-075	0.630	0.709	●			0.197	0.709	0.098	0.295
GP05-18-075-DC	0.630	0.709		●	●	0.197	0.709	0.098	0.295
GP06-085	0.709	0.827	●			0.236	0.787	0.118	0.335
GP06-20-085-DC	0.709	0.827		●	●	0.236	0.787	0.118	0.335
GP06-100	0.827	0.984	●			0.236	0.787	0.118	0.394
GP06-20-100-DC	0.827	0.984		●	●	0.236	0.787	0.118	0.394
GP06	0.985	1.299	●			0.236	0.787	0.118	0.472
GP06-20-120-DC	0.985	1.299		●	●	0.236	0.787	0.118	0.472
GP07	1.300	1.496	●			0.276	0.787	0.138	0.472
GP07-20-120-DC	1.300	1.496		●	●	0.276	0.787	0.138	0.472
GP08	1.496	1.575	●			0.315	0.984	0.177	0.610
GP08-25-155-DC	1.496	1.575		●	●	0.315	0.984	0.177	0.610

● : Line up
Package quantity = 5 pcs.

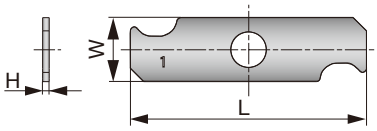
SHIMS

For fine adjustments of hole diameters

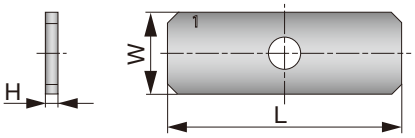
SHIMSET-GP04



SHIMSET-GP05



SHIMSET-GP06



Designation	DC	W	L	H
SHIMSET-GP04	10 - 13.99	4	16	0.01 - 0.05
SHIMSET-GP05	14 - 18	5	18	0.01 - 0.05
SHIMSET-GP06	18.01 - 33	5	18	0.01 - 0.05

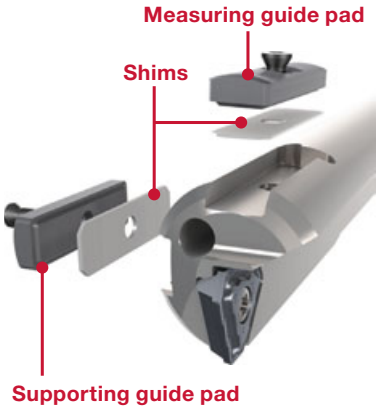
(Unit : mm)

- A shim set contains 5 shims in thicknesses of 0.01 mm, 0.02 mm, 0.03 mm, 0.04 mm, and 0.05 mm, respectively.
- Adjusting shims are sold by set only, not to be sold separately.

Shim combinations for various diameters

Diameter adjustments	Shim(s) for measuring guide pad	Shim(s) for supporting guide pad	Number of shim sets needed
+0.0004	0.0004	-	1
+0.0008	0.0008	0.0004	1
+0.0012	0.0012	0.0004 + 0.0008	1
+0.0016	0.0016	0.0004 + 0.0012	1
+0.0020	0.0020	0.0008 + 0.0012	1
+0.0024	0.0004 + 0.0020	0.0008 + 0.0016	1
+0.0028	0.0008 + 0.0020	0.0012 + 0.0016	1
+0.0031	0.0012 + 0.0020	0.0016 + 0.0016	2
+0.0035	0.0016 + 0.0020	0.0016 + 0.0020	2
+0.0039	0.0020 + 0.0020	0.0016 + 0.0016 + 0.0008	2

(Unit: in)



How to install adjusting shims

1. Measure the drill diameter.





2. Select the shim sizes for adjustment.

Note: Consider that the hole diameter may expand during drilling for + ø0.0007" to +ø0.011" (+ø0.02 mm to +ø0.03 mm).

https://www.tungaloy.com/product/deeptri-drill/



3. Remove the guide pads.



4. Place the shims underneath both guide pads.

5. Measure to make sure the required diameter is achieved.



6. Drill a test hole to ensure the required hole size is achieved.

Note: For higher drilling precision, drill a hole after Step 1 to confirm the size difference between the measured drill diameter and actual drilled hole diameter.

STANDARD CUTTING CONDITIONS

Drill diameter: DC = ø0.394" - ø1.102" (ø10 - ø28 mm)

ISO	Workpiece material	Hardness	Priority	Chip-breaker	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) ø10 - ø11.8	ø11.81 - ø13.99	ø14 - ø18	ø18.01 - ø28
P	Low carbon steel (C < 0.3) 70, 1025, etc.	- 200 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0039	0.0012 - 0.0039
			First choice	NDJ	AH9130	262 - 459	0.002 - 0.0031	0.002 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0063
	Carbon steel (C > 0.3) 1045C, 1055, etc.	- 300 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0039	0.0012 - 0.0047
			First choice	NDJ	AH9130	262 - 459	0.002 - 0.0055	0.002 - 0.0063	0.0028 - 0.0071	0.0031 - 0.0079
	Low alloy steel (C < 0.3) 5120, etc.	- 200 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0047	0.0031 - 0.0039
			First choice	NDJ	AH9130	262 - 459	0.002 - 0.0031	0.002 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0063
	Alloy steel (C > 0.3) 4140, etc.	- 300 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0039	0.0012 - 0.0047
			First choice	NDJ	AH9130	262 - 394	0.002 - 0.0055	0.002 - 0.0063	0.0028 - 0.0071	0.0031 - 0.0079
M*	Stainless steel (Austenitic) 304, 316, etc.	- 200 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0024	0.0012 - 0.0024
			First choice	NDJ	AH9130	197 - 328	0.002 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.002 - 0.0047
	Stainless steel (Martensitic, Ferritic) 430, 416, etc.	- 200 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0024	0.0012 - 0.0024
			First choice	NDJ	AH9130	197 - 328	0.002 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.002 - 0.0047
	Stainless steel (Precipitation hardening) S17400, etc.	-	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0024	0.0012 - 0.0024
			First choice	NDJ	AH9130	197 - 328	0.002 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.002 - 0.0047
K	Gray cast iron No.250B, etc.	150 - 250 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0059	0.002 - 0.0071
			First choice	NDJ	AH9130	262 - 459	0.002 - 0.0079	0.002 - 0.0098	0.002 - 0.0098	0.002 - 0.0118
	Ductile cast iron 700, etc.	150 - 250 HB	Lower feed	NDL	AH725	164 - 328	-	-	0.0012 - 0.0059	0.002 - 0.0071
			First choice	NDJ	AH9130	262 - 459	0.002 - 0.0079	0.002 - 0.0098	0.002 - 0.0098	0.002 - 0.0118
N	Aluminum alloys	-	Lower feed	NDL	AH725	262 - 525	-	-	0.0012 - 0.0059	0.0012 - 0.0059
			First choice	NDJ	AH9130	328 - 656	0.002 - 0.0071	0.002 - 0.0079	0.0031 - 0.0087	0.0039 - 0.0098
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	Lower feed	NDL	AH725	66 - 164	-	-	0.0012 - 0.0024	0.0012 - 0.0031
			First choice	NDJ	AH9130	66 - 164	0.0016 - 0.0024	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	Lower feed	NDL	AH725	98 - 197	-	-	0.0012 - 0.0039	0.0012 - 0.0047
			First choice	NDJ	AH9130	98 - 197	0.0016 - 0.0039	0.002 - 0.0051	0.002 - 0.0051	0.002 - 0.0059
H	Hardened steel	- 50 HRC	Lower feed	NDL	AH725	131 - 328	-	-	0.0012 - 0.0031	0.0012 - 0.0031
			First choice	NDJ	AH9130	164 - 328	0.0016 - 0.0024	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039

The use of NDL chipbreakers is recommended for cross hole drilling with low feed conditions.
*Coolant recommendations for drilling stainless steel:
- Oil coolant is first priority
- Water soluble coolant requires at least 20% oil concentration

Drill diameter: DC = ø1.106" - ø1.575" (ø28.01 - ø40 mm)

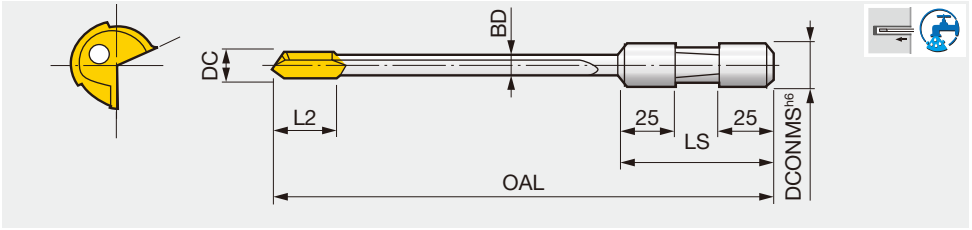
ISO	Workpiece material	Hardness	Priority	For central Chip-breaker	For central Grade	For intermediate Chip-breaker	For intermediate Grade	For peripheral Chip-breaker	For peripheral Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr) ø1.103" - ø1.575"
P	Low carbon steel (C < 0.3) 70, 1025, etc.	- 200 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0039
			First choice	G	AH725	G	AH725	G	AH725	262 - 459	0.0039 - 0.0098
	Carbon steel (C > 0.3) 1045C, 1055, etc.	- 300 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0047
			First choice	G	AH725	G	AH725	G	AH725	262 - 459	0.0039 - 0.0118
	Low alloy steel (C < 0.3) 5120, etc.	- 200 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0039
			First choice	G	AH725	G	AH725	G	AH725	262 - 459	0.0039 - 0.0098
	Alloy steel (C > 0.3) 4140, etc.	- 300 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0047
			First choice	G	AH725	G	AH725	G	AH725	262 - 394	0.0039 - 0.0118
M*	Stainless steel (Austenitic) 304, 316, etc.	- 200 HB	Lower feed	G	AH8015	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0039
			First choice	G	AH8015	G	AH8015	G	AH8015	197 - 328	0.0039 - 0.0059
	Stainless steel (Martensitic, Ferritic) 430, 416, etc.	- 200 HB	Lower feed	G	AH8015	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0039
			First choice	G	AH8015	G	AH8015	G	AH8015	197 - 328	0.0039 - 0.0059
	Stainless steel (Precipitation hardening) S17400, etc.	-	Lower feed	G	AH8015	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0039
			First choice	G	AH8015	G	AH8015	G	AH8015	197 - 328	0.0039 - 0.0059
K	Gray cast iron No.250B, etc.	150 - 250 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0055
			First choice	G	AH725	G	AH725	G	AH725	262 - 459	0.0039 - 0.0138
	Ductile cast iron 700, etc.	150 - 250 HB	Lower feed	G	AH725	DL	AH725	G	AH725	164 - 328	0.0012 - 0.0055
			First choice	G	AH725	G	AH725	G	AH725	262 - 459	0.0039 - 0.0138
N	Aluminum alloys	-	Lower feed	G	AH725	DL	AH725	G	AH725	262 - 525	0.0012 - 0.0079
			First choice	G	AH725	G	AH725	G	AH725	328 - 656	0.0039 - 0.0118
S	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	Lower feed	G	AH8015	DL	AH725	G	AH725	66 - 164	0.0012 - 0.0031
			First choice	G	AH8015	G	AH8015	G	AH8015	66 - 164	0.0024 - 0.0051
	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	Lower feed	G	AH725	DL	AH725	G	AH725	98 - 197	0.0012 - 0.0039
			First choice	G	AH725	G	AH725	G	AH725	98 - 197	0.0039 - 0.0071
H	Hardened steel	- 50 HRC	Lower feed	G	AH8015	DL	AH725	G	AH725	131 - 328	0.0012 - 0.0039
			First choice	G	AH8015	G	AH8015	G	AH8015	164 - 328	0.0024 - 0.0051

The use of DL chipbreakers is recommended for cross hole drilling with low feed conditions.
*Coolant recommendations for drilling stainless steel:
- Oil coolant is first priority
- Water soluble coolant requires at least 20% oil concentration

GunDrill SLJ

Brazed gundrill, for gun drilling machines





Metric	DC	DCONMS	L2	OAL
SLJ0300L0400NA	3	12.7	15	400
SLJ0300L0600NA	3	12.7	15	600
SLJ0500L0600NA	5	12.7	25	600
SLJ0550L0600NA	5.5	19.05	25	600
SLJ0600L0600NA	6	19.05	25	600
SLJ0700L0600NA	7	19.05	25	600
SLJ0800L0600NA	8	19.05	25	600
SLJ1000L0600NA	10	19.05	30	600
SLJ0500L1000NA	5	12.7	25	1000
SLJ0600L1000NA	6	19.05	25	1000
SLJ0700L1000NA	7	19.05	25	1000
SLJ0800L1000NA	8	19.05	25	1000
SLJ1000L1000NA	10	19.05	30	1000
SLJ0600L1250NA	6	19.05	25	1250
SLJ0610L1250NA	6.1	19.05	25	1250
SLJ0620L1250NA	6.2	19.05	25	1250
SLJ0700L1250NA	7	19.05	25	1250
SLJ0800L1250NA	8	19.05	25	1250
SLJ0810L1250NA	8.1	19.05	25	1250
SLJ0820L1250NA	8.2	19.05	25	1250
SLJ1000L1250NA	10	19.05	30	1250
SLJ1010L1250NA	10.1	19.05	30	1250
SLJ1020L1250NA	10.2	19.05	30	1250
SLJ1200L1250NA	12	19.05	30	1250
SLJ1210L1250NA	12.1	19.05	30	1250
SLJ1220L1250NA	12.2	19.05	30	1250
SLJ0600L1650NA	6	19.05	25	1650
SLJ0610L1650NA	6.1	19.05	25	1650
SLJ0620L1650NA	6.2	19.05	25	1650
SLJ0700L1650NA	7	19.05	25	1650
SLJ0800L1650NA	8	19.05	25	1650
SLJ0810L1650NA	8.1	19.05	25	1650
SLJ0820L1650NA	8.2	19.05	25	1650
SLJ1000L1650NA	10	19.05	30	1650
SLJ1010L1650NA	10.1	19.05	30	1650
SLJ1020L1650NA	10.2	19.05	30	1650
SLJ1200L1650NA	12	19.05	30	1650
SLJ1210L1650NA	12.1	19.05	30	1650
SLJ1220L1650NA	12.2	19.05	30	1650

TUBE DIAMETER

DC	BD
3 - 3.19	2.9
3.2 - 3.39	3.1
3.4 - 3.59	3.3
3.6 - 3.89	3.5
3.9 - 4.09	3.7
4.1 - 4.29	3.9
4.3 - 4.49	4.1
4.5 - 4.89	4.3
4.9 - 5.19	4.7

DC	BD
5.2 - 5.49	5
5.5 - 5.79	5.3
5.8 - 5.99	5.6
6 - 6.19	5.8
6.2 - 6.59	5.9
6.6 - 7.09	6.4
7.1 - 7.59	6.9
7.6 - 8.09	7.4
8.1 - 8.69	7.9

DC	BD
8.7 - 9.19	8.5
9.2 - 9.69	9
9.7 - 10.39	9.5
10.4 - 10.89	10
10.9 - 11.39	10.6
11.4 - 11.99	11.1
12 - 12.2	11.7

STANDARD CUTTING CONDITIONS

See more information

e-catalog

Drill Head Category

Series	Designation	Shape	Drill diameter	Coolant supply	IT class	Surface finish Ra (μm)*3	Thread type: External single thread	Thread type: External double thread	Thread type: External quadruple thread	Thread type: Internal single thread
TRI-FINE	FNTR		ø16 - ø28 (ø0.630" - ø1.102")	Internal	IT10	2	-	-	○	○
FINE-BEAM	FNBN		ø25 - ø89 (ø0.984" - ø3.504")	Internal	IT10	2	-	-	○	○
UNIDEX	KUSTS		ø38 - ø293.99 (ø1.496" - ø11.574")	Internal	IT10	3	-	-	○	○
TRI-FINE	FNTR-D		ø18.4 - ø28 (ø0.724" - ø1.102")	Internal	IT10	2	-	-	○	-
FINE-BEAM	FNBR-D		ø25 - ø65 (ø0.984" - ø2.559")	Internal	IT10	2	-	-	○	-
UNIDEX	KUDTS		ø38 - ø183.99 (ø1.496" - ø7.244")	Internal	IT10	3	-	-	○	-
Brazed	MBU		ø8 - ø14.79 (ø0.315" - ø0.582")	Internal	IT9	2	○	-	-	-
	UTE		ø12.6 - ø20 (ø0.496" - ø0.787")	Internal	IT9	2	-	○*1	○*2	-
	BTU		ø12.6 - ø65 (ø0.496" - ø0.614")	Internal	IT9	2	-	○*1	○*2	-
	ETU		ø18.4 - ø (ø0.724" - ø2.559")	Internal	IT9	2	-	-	○	-

*1: UTE & BTU Drill head : ø12.6 mm - ø15.59 mm, External double thread
*2: UTE & BTU Drill head : ø15.6 mm -, External quadruple thread
*3: Just for reference

★ : First choice
☆ : Second choice

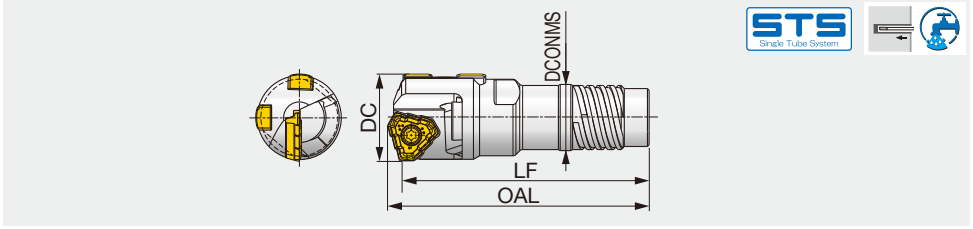
Tube system	Machine: Deep hole drilling machines	Machine: Lathes	Machine: Vertical machining centers	Machine: Horizontal machining centers	Workpiece material: P	M	K	N	S	H	Note	Page
STS (Single Tube System)	○	-	-	-	★	★	★	★	★	★	Indexable	J134 -
	○	-	-	-	★	★	★	★	★	★	Indexable	J139 -
	○	-	-	-	★	★	★	★	★	★	Indexable	J147 -
DTS (Double Tube System)	○	○	○	○	★	★	★	★	★	★	Indexable	J136
	○	○	○	○	★	★	★	★	★	★	Indexable	J141
	○	○	○	○	★	★	★	★	★	★	Indexable	J159 -
STS (Single Tube System)	○	-	-	-	★	★	★	★	☆	☆	Brazed	J168
	○	-	-	-	★	★	★	★	☆	☆	Brazed	J169
	○	-	-	-	★	★	★	★	☆	☆	Brazed	J170 -
DTS (Double Tube System)	○	○	○	○	★	★	★	★	☆	☆	Brazed	J173

TRI-FINE STS

TRI-FINE STS-EX

Indexable head with external 4-start thread for single tube system (STS)





Standard products

Metric	DC		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	Designation	Dia. (mm)					
FNTR-0097S-16.00	0.630	16	ST0097	14	58	55	12.6	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-0000S-20.00	0.787	20	ST0000	17	59	56	15.5	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-00S-21.00	0.827	21	ST00	18	62	60	16	TOHT10...	GP06-085, GP06-20-085-DC
FNTR-01S-24.00	0.945	24	ST01	20	69	65.5	18	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-02S-25.00	0.984	25	ST02	22	69	65.5	19.5	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-02S-25.40	1.000	25.4	ST02	22	69	65.5	19.5	TOHT12...	GP06, GP06-20-120-DC

Non-standard products (to be supplied on request)

When ordering

FNTR-**S	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø16.5 mm: **FNTR-0097S-16.50**

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)					
FNTR-0097S-xx.xx	0.630	16	0.657	16.7	ST0097	14	57	55	12.6	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-0098S-xx.xx	0.658	16.71	0.697	17.7	ST0098	15	57	55	13.6	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-0099S-xx.xx	0.697	17.71	0.709	18	ST0099	16	59	56	14.5	TOHT09...	GP06-075, GP06-20-075-DC
FNTR-0099S-xx.xx	0.709	18.01	0.744	18.9	ST0099	16	59	56	14.5	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-0000S-xx.xx	0.744	18.91	0.787	20	ST0000	17	59	56	15.5	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-00S-xx.xx	0.788	20.01	0.858	21.8	ST00	18	63	60	16	TOHT10...	GP06-085, GP06-20-085-DC
FNTR-01S-xx.xx	0.859	21.81	0.949	24.1	ST01	20	69	65.5	18	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-02S-xx.xx	0.949	24.11	1.039	26.4	ST02	22	69	65.5	19.5	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-03S-xx.xx	1.040	26.41	1.102	28	ST03	24	69	65.5	21	TOHT12...	GP06, GP06-20-120-DC

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT08...	CSTB-2.5S	T-8F
TOHT09...	CSTB-2.5S	T-8F
TOHT10...	CSTB-3S	T-9F
TOHT11...	CSTB-3.5H	T-15F
TOHT12...	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-085, GP06-20-085-DC	CSTB-2.2S	T-7F
GP06-100, GP06-20-100-DC	CSTB-2.2S	T-7F
GP06, GP06-20-120-DC	CSTB-2.2S	T-7F

Recommended clamping torque: CSTB-2.2S = 1 N·m, CSTB-2.5S/CSTB-3S = 2.3 N·m, CSTB-3.5H/CSTB-4S = 3 N·m

STANDARD CUTTING CONDITIONS

See more information

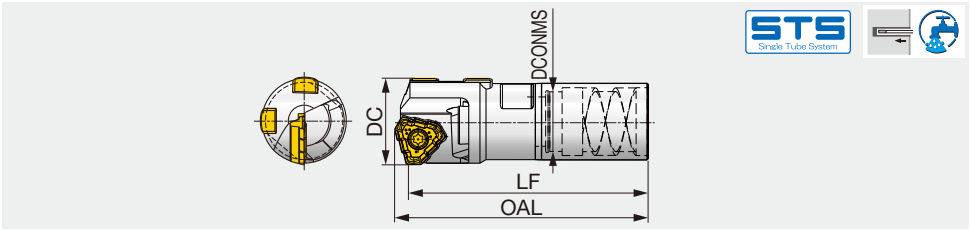
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Reference pages: Inserts, Guide pads → J137 - J138, Drill tube (STS) → J174

TRI-FINE STS-IN

Indexable head with internal single-start thread for single tube system (STS)





Non-standard products (to be supplied on request)

When ordering

FNTR-**N (-*)	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø16.5 mm: **FNTR-13N-2-16.50**

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)					
FNTR-13N-2-xx.xx	0.630	16	0.650	16.5	UB13-1	13	55.5	53.5	10.8	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-14N-1-xx.xx	0.650	16.51	0.679	17.25	UB14-1	14	55.5	53.5	12.1	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-14N-2-xx.xx	0.680	17.26	0.709	18	UB14-2	14	55.5	53.5	12.1	TOHT08...	GP06-075, GP06-20-075-DC
FNTR-15N-xx.xx	0.709	18.01	0.748	19	UB15	15	57	54	12.8	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-16.5N-xx.xx	0.748	19.01	0.787	19.99	UB16.5	16.5	57	54	13.8	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-18N-xx.xx	0.787	20	0.866	21.99	UB18	18	61	58	14.5	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-20N-xx.xx	0.866	22	0.984	24.99	UB20	20	63.5	60	16	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-22N-xx.xx	0.984	25	1.023	25.99	UB22	22	63.5	60	17	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-22N-xx.xx	1.024	26	1.063	26.99	UB22	22	68.5	65	17	TOHT12...	GP06, GP06-20-120-DC
FNTR-24N-xx.xx	1.063	27	1.102	28	UB24	24	68.5	65	19	TOHT12...	GP06, GP06-20-120-DC

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT08...	CSTB-2.5S	T-8F
TOHT09...	CSTB-2.5S	T-8F
TOHT10...	CSTB-3S	T-9F
TOHT11...	CSTB-3.5H	T-15F
TOHT12...	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-085, GP06-20-085-DC	CSTB-2.2S	T-7F
GP06-100, GP06-20-100-DC	CSTB-2.2S	T-7F
GP06, GP06-20-120-DC	CSTB-2.2S	T-7F

Recommended clamping torque: CSTB-2.2S = 1 N·m, CSTB-2.5S/CSTB-3S = 2.3 N·m, CSTB-3.5H/CSTB-4S = 3 N·m

STANDARD CUTTING CONDITIONS

See more information

e-catalog

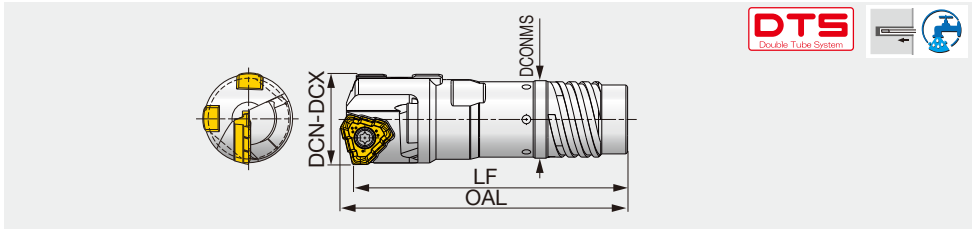
Reference pages: Inserts, Guide pads → J137 - J138, Drill tube (STS) → J176

TRI-FINE DTS

TRI-FINE DTS-EX

Indexable head with external 4-start thread for double tube system (DTS)





Non-standard products (to be supplied on request)

When ordering

FNTR-**D	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø20 mm: **FNTR-00D-20.00**

Metric	DCN		DCX		Outer tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)					
FNTR-00D-xx.xx	0.724	18.4	0.787	20	OT00	18	62	59	16	TOHT09...	GP06-085, GP06-20-085-DC
FNTR-01D-xx.xx	0.788	20.01	0.827	21	OT01	19.5	66.5	63.5	18	TOHT10...	GP06-085, GP06-20-085-DC
FNTR-01D-xx.xx	0.827	21.01	0.858	21.8	OT01	19.5	66.5	63.5	18	TOHT10...	GP06-100, GP06-20-100-DC
FNTR-02D-xx.xx	0.859	21.81	0.866	21.99	OT02	21.5	66.5	63.5	19.5	TOHT10...	GP06-100, GP06-20-100-DC
FNTR-02D-xx.xx	0.866	22	0.949	24.1	OT02	21.5	69	65.5	19.5	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-03D-xx.xx	0.949	24.11	0.984	25	OT03	23.5	69	65.5	21	TOHT11...	GP06-100, GP06-20-100-DC
FNTR-03D-xx.xx	0.985	25.01	1.039	26.4	OT03	23.5	71	67.5	21	TOHT12...	GP06, GP06-20-120-DC
FNTR-04D-xx.xx	1.040	26.41	1.102	28	OT04	26	74	70.5	23.5	TOHT12...	GP06, GP06-20-120-DC

INSERT SPARE PARTS




Designation	Screw	Wrench
TOHT08...	CSTB-2.5S	T-8F
TOHT09...	CSTB-2.5S	T-8F
TOHT10...	CSTB-3S	T-9F
TOHT11...	CSTB-3.5H	T-15F
TOHT12...	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS




Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-085, GP06-20-085-DC	CSTB-2.2S	T-7F
GP06-100, GP06-20-100-DC	CSTB-2.2S	T-7F
GP06, GP06-20-120-DC	CSTB-2.2S	T-7F

Recommended clamping torque: CSTB-2.2S = 1 N·m, CSTB-2.5S = 1.3 N·m, CSTB-3S = 2.3 N·m, CSTB-3.5H/CSTB-4S = 3 N·m

STANDARD CUTTING CONDITIONS

See more information

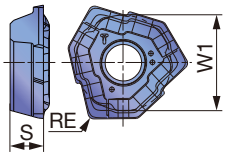
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Reference pages: Inserts, Guide pads → J137 - J138, Drill tube (DTS) → J178

INSERT

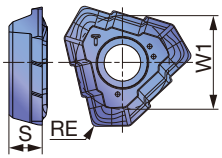
TOHT-NDJ (08...)





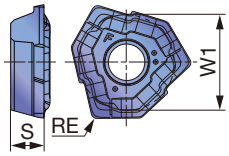
TOHT-NDJ (09... - 12...)





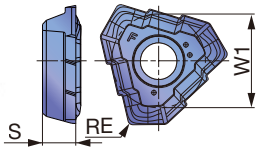
TOHT-NDL (08...)





TOHT-NDL (09... - 12...)





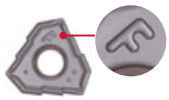
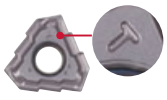
P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

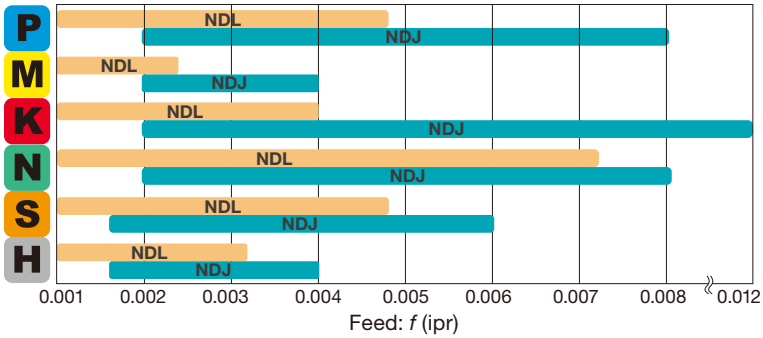
Designation	DCN (in)	DCX (in)	Coated AH9130	Coated AH725	W1 (in)	S (in)	RE (in)
TOHT080305R-NDJ	0.630	0.709	●	●	0.337	0.110	0.020
TOHT090305R-NDJ	0.709	0.787	●	●	0.328	0.118	0.020
TOHT100305R-NDJ	0.788	0.866	●	●	0.363	0.130	0.020
TOHT110405R-NDJ	0.866	0.984	●	●	0.409	0.150	0.020
TOHT120405R-NDJ	0.985	1.102	●	●	0.456	0.169	0.020
TOHT080305R-NDL	0.630	0.709		●	0.337	0.110	0.020
TOHT090305R-NDL	0.709	0.787		●	0.328	0.118	0.020
TOHT100305R-NDL	0.788	0.866		●	0.363	0.130	0.020
TOHT110405R-NDL	0.866	0.984		●	0.409	0.150	0.020
TOHT120405R-NDL	0.985	1.102		●	0.456	0.169	0.020

●: Line up
Package quantity = 10 pcs.

Identifications for NDL and NDJ geometries

Chipbreaker	NDL	NDJ
Cutting edge strength	Sharp	Strong
ID on insert		

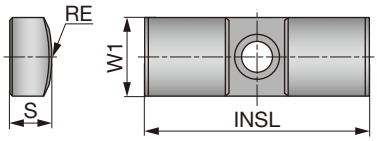
Recommended feed rates



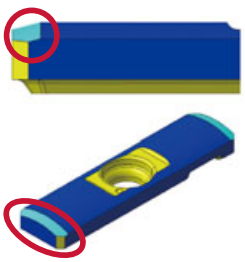
GUIDE PAD

GP06

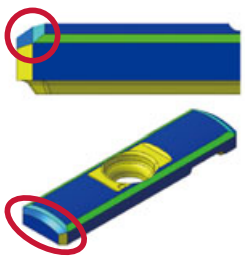




Single chamfer



Double chamfer (-DC)



Designation	DCN (in)	DCX (in)	Coated			W1 (in)	INSL (in)	S (in)	RE (in)	Chamfer
			F1122	FH3125	FH3135					
GP06-075	0.630	0.709	●			0.236	0.787	0.118	0.295	Single
GP06-20-075-DC	0.630	0.709			●	0.236	0.787	0.118	0.295	Double
GP06-085	0.709	0.827	●			0.236	0.787	0.118	0.335	Single
GP06-20-085-DC	0.709	0.827		●	●	0.236	0.787	0.118	0.335	Double
GP06-100	0.827	0.984	●			0.236	0.787	0.118	0.394	Single
GP06-20-100-DC	0.827	0.984		●	●	0.236	0.787	0.118	0.394	Double
GP06	0.985	1.181	●			0.236	0.787	0.118	0.472	Single
GP06-20-120-DC	0.985	1.181		●	●	0.236	0.787	0.118	0.472	Double

●: Line up
Package quantity = 5 pcs.

Grade recommendations

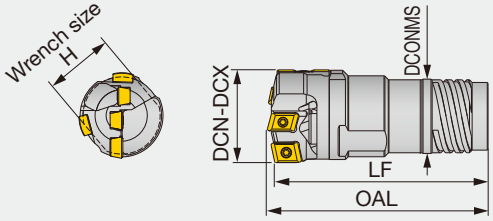
ISO	Oil coolant			Water based coolant		
	First choice	Second choice	Third choice	First choice	Second choice	Third choice
P	FH3125	F1122	FH3135	FH3135	FH3125	-
M	FH3135	FH3125	F1122	FH3135	FH3125	-
K	FH3125	F1122	FH3135	FH3135	FH3125	-
N	FH3125	F1122	FH3135	FH3135	FH3125	-
S	FH3135	FH3125	F1122	FH3135	FH3125	-
H	FH3135	FH3125	F1122	FH3135	FH3125	-

FINE-BEAM STS

FINE-BEAM STS-EX

Indexable head with external 4-start thread for single tube system (STS)
tool diameter: ø25 - ø65 mm (0.984" - 2.559")





Standard products

Metric	DC (in)	DC (mm)	Drill tube		Drill head			
			Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-02S-25.00	0.984	25	ST02	22	73	70	19.5	22
FNBM-02S-25.40	1.000	25.4	ST02	22	73	70	19.5	22
FNBM-03S-28.00	1.102	28	ST03	24	73	70	21	23
FNBM-04S-29.00	1.142	29	ST04	26	78	75	23.5	24
FNBM-04S-30.00	1.181	30	ST04	26	78	75	23.5	24
FNBM-05S-31.75	1.250	31.75	ST05	28	78	75	25.5	27
FNBM-05S-32.00	1.260	32	ST05	28	78	75	25.5	27
FNBM-05S-33.00	1.299	33	ST05	28	78	75	25.5	27
FNBM-06S-35.00	1.378	35	ST06	30	83	80	28	29
FNBM-06S-36.00	1.417	36	ST06	30	83	80	28	29
FNBM-07S-37.00	1.457	37	ST07	33	93	90	30	32
FNBM-07S-38.00	1.496	38	ST07	33	93	90	30	32
FNBM-07S-38.10	1.500	38.1	ST07	33	93	90	30	32
FNBM-08S-40.00	1.575	40	ST08	36	99	95	33	35
FNBM-09S-45.00	1.772	45	ST09	39	104	100	36	38
FNBM-10S-50.00	1.969	50	ST10	43	104	100	39	41
FNBM-11S-55.00	2.165	55	ST11	47	114	110	43	46
FNBM-12S-57.15	2.250	57.15	ST12	51	120	115	47	50
FNBM-12S-60.00	2.362	60	ST12	51	120	115	47	50
FNBM-13S-65.00	2.559	65	ST13	56	120	115	51	55

Non-standard products (to be supplied on request)

When ordering

FNBM-**S	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø30.5 mm: **FNBM-04S-30.50**

Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-02S-xx.xx	0.984	25	1.039	26.4	ST02	22	73	70	19.5	22
FNBM-03S-xx.xx	1.040	26.41	1.130	28.7	ST03	24	73	70	21	23
FNBM-04S-xx.xx	1.130	28.71	1.220	31	ST04	26	78	75	23.5	24
FNBM-05S-xx.xx	1.221	31.01	1.311	33.3	ST05	28	78	75	25.5	27
FNBM-06S-xx.xx	1.311	33.31	1.425	36.2	ST06	30	83	80	28	29
FNBM-07S-xx.xx	1.426	36.21	1.559	39.6	ST07	33	93	90	30	32
FNBM-08S-xx.xx	1.559	39.61	1.693	43	ST08	36	99	95	33	35
FNBM-09S-xx.xx	1.693	43.01	1.850	47	ST09	39	104	100	36	38
FNBM-10S-xx.xx	1.851	47.01	2.035	51.7	ST10	43	104	100	39	41
FNBM-11S-xx.xx	2.036	51.71	2.213	56.2	ST11	47	114	110	43	46
FNBM-12S-xx.xx	2.213	56.21	2.386	60.6	ST12	51	120	115	47	50
FNBM-13S-xx.xx	2.386	60.61	2.559	65	ST13	56	120	115	51	55

STANDARD CUTTING CONDITIONS

See more information

e-catalog

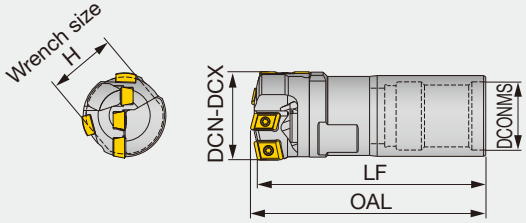
Reference pages: Spare parts → J142, Inserts → J144 - J145, Guide pads → J146, Drill tube (STS) → J174

FINE-BEAM STS

FINE-BEAM STS-IN

Indexable head with internal single-start thread for single tube system (STS)
tool diameter: ø25 - ø89 mm (0.984" - 3.504")





Standard products

Metric	DC		Drill tube		Drill head			
	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-22N-25.00	0.984	25	UB22	22	73	70	20	19
FNBM-26N-30.00	1.181	30	UB26	26	78	75	24	24
FNBM-28N-32.00	1.260	32	UB28	28	78	75	26	26
FNBM-30N-35.00	1.378	35	UB30	30	93	90	27	28
FNBM-36N-40.00	1.575	40	UB36	36	104	100	33	32

Non-standard products (to be supplied on request)

When ordering

FNBM-**N	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø30.5 mm: **FNBM-26N-30.50**

Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-22N-xx.xx	0.984	25	1.063	26.99	UB22	22	73	70	20	19
FNBM-24N-xx.xx	1.063	27	1.130	28.7	UB24	24	73	70	22	21
FNBM-24N-xx.xx	1.130	28.71	1.181	29.99	UB24	24	73	70	22	24
FNBM-26N-xx.xx	1.181	30	1.259	31.99	UB26	26	78	75	24	24
FNBM-28N-xx.xx	1.260	32	1.338	33.99	UB28	28	78	75	26	26
FNBM-30N-xx.xx	1.339	34	1.456	36.99	UB30	30	93	90	27	28
FNBM-33N-xx.xx	1.457	37	1.574	39.99	UB33	33	98	95	30	30
FNBM-36N-xx.xx	1.575	40	1.693	43	UB36	36	104	100	33	32
FNBM-36N-xx.xx	1.693	43.01	1.732	43.99	UB36	36	104	100	33	36
FNBM-39N-xx.xx	1.732	44	1.850	46.99	UB39	39	109	105	37	36
FNBM-43N-xx.xx	1.850	47	2.035	51.7	UB43	43	109	105	41	36
FNBM-43N-xx.xx	2.036	51.71	2.047	51.99	UB43	43	109	105	41	41
FNBM-47N-xx.xx	2.047	52	2.244	56.99	UB47	47	114	110	44	46
FNBM-51N-xx.xx	2.244	57	2.386	60.6	UB51	51	120	115	49	46
FNBM-51N-xx.xx	2.386	60.61	2.401	60.99	UB51	51	120	115	49	50
FNBM-56N-xx.xx	2.402	61	2.559	65	UB56	56	120	115	53	54
FNBM-56N-xx.xx	2.559	65.01	2.677	67.99	UB56	56	112	104	53	64
FNBM-62N-xx.xx	2.677	68	2.952	74.99	UB62	62	113	104	59	71
FNBM-68N-xx.xx	2.953	75	3.189	80.99	UB68	68	143	134	65	77
FNBM-75N-xx.xx	3.189	81	3.504	89	UB75	75	143	134	71	86

STANDARD CUTTING CONDITIONS

See more information

e-catalog

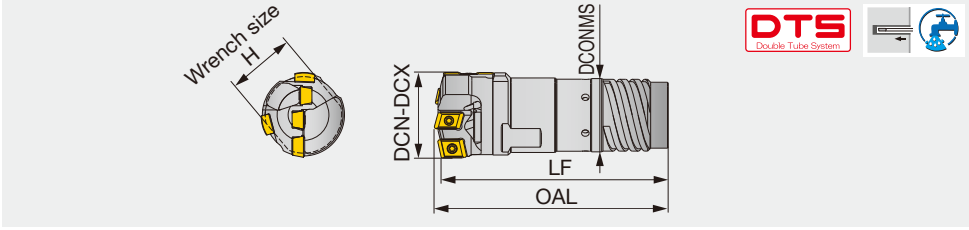
Reference pages: Spare parts → J142, Inserts → J144 - J145, Guide pads → J146, Drill tube (STS) → J176

FINE-BEAM DTS

FINE-BEAM DTS-EX

Indexable head with external 4-start thread for double tube system (DTS)
tool diameter: ø25 - ø65 mm (0.984" - 2.559")





Standard products

Metric	DC		Drill tube		Drill head			
	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-11D-50.00	1.969	50	OT11	46.5	114	110	43	41

Non-standard products (to be supplied on request)

When ordering

FNBM-**D	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø30.5 mm: **FNBM-05D-30.50**

Metric	DCN		DCX		Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-03D-xx.xx	0.984	25	1.039	26.4	OT03	23.5	73	70	21	22
FNBM-04D-xx.xx	1.040	26.41	1.130	28.7	OT04	26	78	75	23.5	23
FNBM-05D-xx.xx	1.130	28.71	1.220	31	OT05	28	78	75	25.5	24
FNBM-06D-xx.xx	1.221	31.01	1.311	33.3	OT06	30.5	83	80	28	27
FNBM-07D-xx.xx	1.311	33.31	1.425	36.2	OT07	33	93	90	30	29
FNBM-08D-xx.xx	1.426	36.21	1.559	39.6	OT08	35.5	99	95	33	32
FNBM-09D-xx.xx	1.559	39.61	1.693	43	OT09	39	104	100	36	35
FNBM-10D-xx.xx	1.693	43.01	1.850	47	OT10	42.5	104	100	39	38
FNBM-11D-xx.xx	1.851	47.01	2.035	51.7	OT11	46.5	114	110	43	41
FNBM-12D-xx.xx	2.036	51.71	2.213	56.2	OT12	51	120	115	47	46
FNBM-13D-xx.xx	2.213	56.21	2.401	60.99	OT13	55.5	120	115	51	50
FNBM-13D-xx.xx	2.402	61	2.559	65	OT13	55.5	120	115	51	55

STANDARD CUTTING CONDITIONS

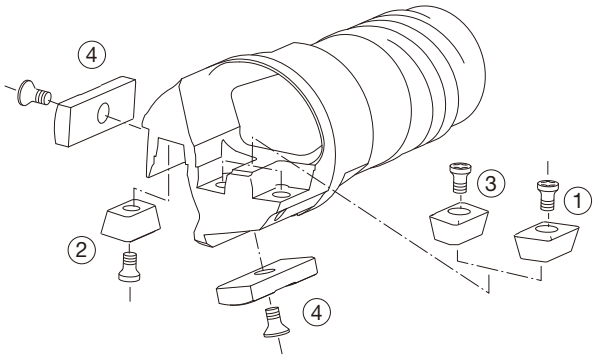
See more information

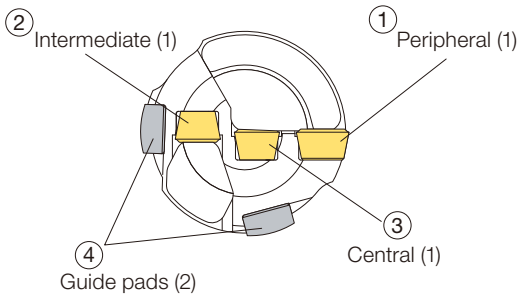
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Reference pages: Spare parts → J142, Inserts → J144 - J145, Guide pads → J146, Drill tube (STS) → J178

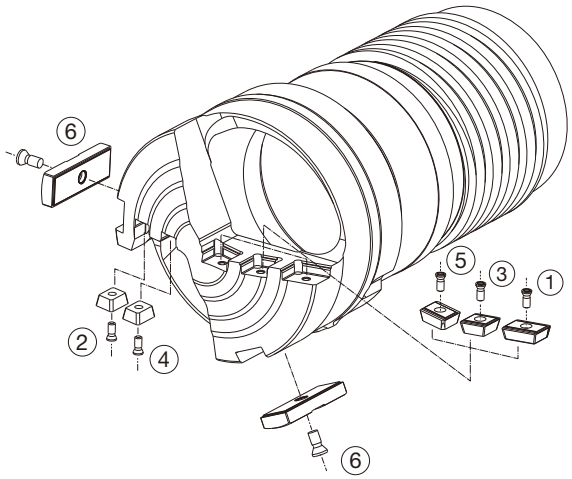
SPARE PARTS

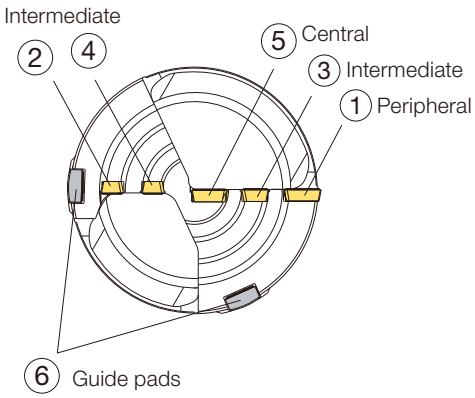
Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	① Peripheral			② Intermediate			③ Central			④		
	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Guide pad	Screw	Wrench
25 - 28	FBH0603**R-**-P	CSTB-2.2	T-7F	FBM060304R-**-I	CSTB-2.2	T-7F	FBM060308L-**-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH0603**R-**-P	CSTB-2.2	T-7F	FBM060304R-**-I	CSTB-2.2	T-7F	FBM070408L-**-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30 - 35	FBH0804**R-**-P	SR14-560-HG	T-8F	FBM070404R-**-I	SR14-560-HG	T-8F	FBM070408L-**-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38	FBH0804**R-**-P	SR14-560-HG	T-8F	FBM070404R-**-I	SR14-560-HG	T-8F	FBM080408L-**-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39	FBH0904**R-**-P	SR14-560-HG	T-8F	FBM070404R-**-I	SR14-560-HG	T-8F	FBM080408L-**-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41	FBH0904**R-**-P	SR14-560-HG	T-8F	FBM070404R-**-I	SR14-560-HG	T-8F	FBM080408L-**-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44	FBH0904**R-**-P	SR14-560-HG	T-8F	FBM080404R-**-I	SR14-560-HG	T-8F	FBM080408L-**-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45	FBH0904**R-**-P	SR14-560-HG	T-8F	FBM080404R-**-I	SR14-560-HG	T-8F	FBM100408L-**-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47	FBH0904**R-**-P	SR14-560-HG	T-8F	FBM080404R-**-I	SR14-560-HG	T-8F	FBM100408L-**-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51	FBH1104**R-**-P	SR14-560-HG	T-8F	FBM080404R-**-I	SR14-560-HG	T-8F	FBM100408L-**-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54	FBH1104**R-**-P	SR14-560-HG	T-8F	FBM100404R-**-I	SR14-560-HG	T-8F	FBM100408L-**-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57	FBH1104**R-**-P	SR14-560-HG	T-8F	FBM100404R-**-I	SR14-560-HG	T-8F	FBM130408L-**-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60	FBH1104**R-**-P	SR14-560-HG	T-8F	FBM100404R-**-I	SR14-560-HG	T-8F	FBM130408L-**-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64	FBH1304**R-**-P	SR14-560-HG	T-8F	FBM100404R-**-I	SR14-560-HG	T-8F	FBM130408L-**-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65	FBH1304**R-**-P	SR14-560-HG	T-8F	FBM130404R-**-I	SR14-560-HG	T-8F	FBM130408L-**-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F





Tool diameter DCN - DCX (mm)	Insert															Guide pad		
	① Peripheral			② Intermediate			③ Intermediate			④ Intermediate			⑤ Central			⑥		
	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Insert	Screw*	Wrench	Guide pad	Screw	Wrench
65.01 - 71	FBH1104**R-**-P	SR 14-560-HG	T-8F	FBM070404R-**-I	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM100408L-**-C	SR 14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
71.01 - 83	FBH1304**R-**-P	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM100408L-**-C	SR 14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
83.01 - 89	FBH1304**R-**-P	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM100404R-**-I	SR 14-560-HG	T-8F	FBM080404R-**-I	SR 14-560-HG	T-8F	FBM130408L-**-C	SR 14-560-HG	T-8F	GP12	CSTB-3.5	T-15F





*See page J143 on size variation of the insert clamping screws.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads. Please purchase inserts and guide pads separately.
Recommended clamping torque: CSTB-2.2/CSTB-2.2S = 1 N·m, SR14-560-HG = 1.2 N·m, CSTB-2.5 = 1.3 N·m, CSTB-3S = 2.3 N·m, CSTB-3.5 = 3.5 N·m

CAUTION

To improve its performance, the FineBeam drill head has undergone design changes. The new drill head has a **guide pad protector**, as shown below, that protects the guide pad from being damaged when retrieving the drill from the hole into the guide bushing after completing machining. Accordingly, the insert clamping screw design for drill head diameters of 30 mm or greater has also been changed. See the list below for details.

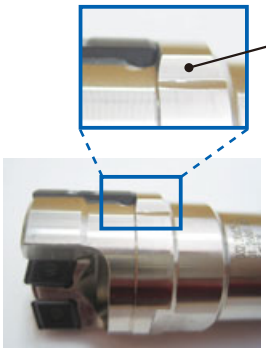
When ordering insert clamping screws, below before choosing the screw size, first confirm the drill body design according to the procedure shown.

→ If the drill head has the protector: **Use a screw in the new design**

→ If the drill head has NO protector: **Use a screw in the previous design**

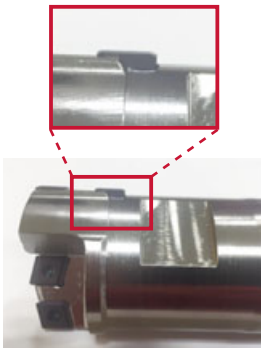
New design

With guide pad protector



Conventional design

Without guide pad protector



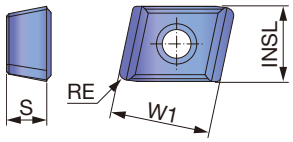
Tool diameter DCN - DCX (mm)	Peripheral insert		Intermediate insert		Central insert	
	Screw		Screw		Screw	
	New	Conventional	**New**	Conventional	**New**	Conventional
25 - 28	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2
28.01 - 29.99	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2
30 - 35	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
35.01 - 38	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
38.01 - 39	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
39.01 - 41	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
41.01 - 44	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
44.01 - 45	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
45.01 - 47	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
47.01 - 51	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
51.01 - 54	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
54.01 - 57	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
57.01 - 60	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
60.01 - 64	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5
64.01 - 65	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5	**SR14-560-HG**	CSTB2.5

The two types of screws are not interchangeable. A wrong screw will not fit the drill head body. Please contact your dealer for further information.

INSERT

FBM-C (Central insert)





P	Steel	★	☆	☆
M	Stainless	★	☆	☆
K	Cast iron	★	☆	☆
N	Non-ferrous	★	☆	☆
S	Superalloys	☆	☆	★
H	Hard materials	☆	☆	★

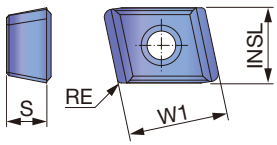
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated			S (in)	DCN (in)	DCX (in)	RE (in)
			AH9130	AH725	AH8015				
FBM060308L-G-C	0.217	0.315	●		●	0.118	0.984	1.102	0.031
FBM060308L-HF-C	0.217	0.315	●	●	●	0.118	0.984	1.102	0.031
FBM070408L-G-C	0.256	0.394	●	●	●	0.157	1.106	1.378	0.031
FBM070408L-HF-C	0.256	0.394	●	●	●	0.157	1.106	1.378	0.031
FBM080408L-G-C	0.315	0.394	●	●	●	0.157	1.378	1.732	0.031
FBM080408L-HF-C	0.315	0.394	●	●	●	0.157	1.378	1.732	0.031
FBM100408L-G-C	0.374	0.394	●	●	●	0.157	1.733	2.126	0.031
FBM100408L-HF-C	0.374	0.394	●	●	●	0.157	1.733	2.126	0.031
FBM130408L-G-C	0.492	0.394	●	●	●	0.157	2.126	2.559	0.031
FBM130408L-HF-C	0.492	0.394	●	●	●	0.157	2.126	2.559	0.031

●: Line up

FBM-I (Intermediate insert)





P	Steel	★	☆	☆
M	Stainless	★	☆	☆
K	Cast iron	★	☆	☆
N	Non-ferrous	★	☆	☆
S	Superalloys	☆	☆	★
H	Hard materials	☆	☆	★

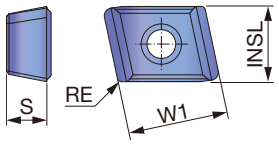
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated			S (in)	DCN (in)	DCX (in)	RE (in)
			AH9130	AH725	AH8015				
FBM060304R-DL-I	0.217	0.315	●	●		0.118	0.984	1.181	0.016
FBM060304R-G-I	0.217	0.315	●	●	●	0.118	0.984	1.181	0.016
FBM060304R-HF-I	0.217	0.315	●	●	●	0.118	0.984	1.181	0.016
FBM070404R-DL-I	0.256	0.394	●	●		0.157	1.181	1.614	0.016
FBM070404R-G-I	0.256	0.394	●	●	●	0.157	1.181	1.614	0.016
FBM070404R-HF-I	0.256	0.394	●	●	●	0.157	1.181	1.614	0.016
FBM080404R-G-I	0.315	0.394	●	●	●	0.157	1.615	2.008	0.016
FBM080404R-HF-I	0.315	0.394	●	●	●	0.157	1.615	2.008	0.016
FBM100404R-G-I	0.374	0.394	●	●	●	0.157	2.008	2.520	0.016
FBM100404R-HF-I	0.374	0.394	●	●	●	0.157	2.008	2.520	0.016
FBM130404R-G-I	0.492	0.394	●	●	●	0.157	2.520	2.559	0.016
FBM130404R-HF-I	0.492	0.394	●	●	●	0.157	2.520	2.559	0.016

●: Line up

FBH-P (Peripheral insert)





P	Steel	★	☆	☆	☆
M	Stainless	★	☆	☆	☆
K	Cast iron	★	☆	☆	☆
N	Non-ferrous	★	☆		☆
S	Superalloys	☆	☆	☆	★
H	Hard materials	☆	☆		★

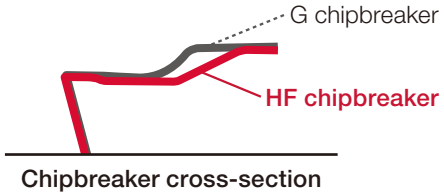
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH9130	Coated AH725	Coated UC3120	Coated AH8015	S (in)	DCN (in)	DCX (in)	RE (in)
FBH060304R-G-P	0.236	0.315		●	▲		0.118	0.984	1.181	0.016
FBH060308R-G-P	0.236	0.315	●	●		●	0.118	0.984	1.181	0.031
FBH060308R-HF-P	0.236	0.315	●	●		●	0.118	0.984	1.181	0.031
FBH080404R-G-P	0.295	0.394		●	▲		0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●	●		●	0.157	1.181	1.496	0.031
FBH080408R-HF-P	0.295	0.394	●	●		●	0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394		●	▲		0.157	1.496	1.850	0.016
FBH090408R-G-P	0.354	0.394	●	●		●	0.157	1.496	1.850	0.031
FBH090408R-HF-P	0.354	0.394	●	●		●	0.157	1.496	1.850	0.031
FBH110408R-G-P	0.433	0.394	●	●		●	0.157	1.851	2.362	0.031
FBH110408R-HF-P	0.433	0.394	●	●		●	0.157	1.851	2.362	0.031
FBH130408R-G-P	0.512	0.394	●	●		●	0.157	2.363	2.559	0.031
FBH130408R-HF-P	0.512	0.394	●	●		●	0.157	2.363	2.559	0.031

●: Line up
▲: To be discontinued

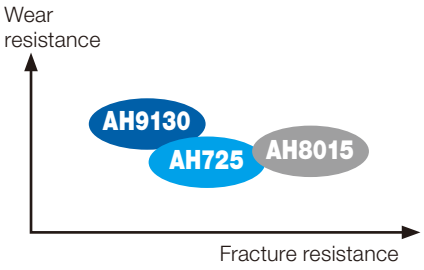
Chipbreaker comparison

HF - Provides drilling stability at high feed rates



Chipbreaker cross-section

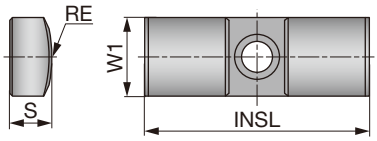
Insert grade



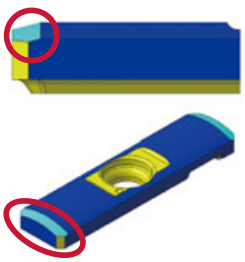
GUIDE PAD

GP06, 07, 08, 10S, 12

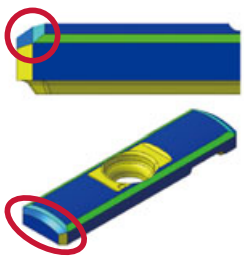




Single chamfer



Double chamfer (-DC)



Designation	DCN (in)	DCX (in)	Coated			W1 (in)	INSL (in)	S (in)	RE (in)	Chamfer
			F1122	FH3125	FH3135					
GP06	0.984	1.181	●			0.236	0.787	0.118	0.472	Single
GP06-20-120-DC	0.984	1.181		●	●	0.236	0.787	0.118	0.472	Double
GP07	1.181	1.535	●			0.276	0.787	0.138	0.472	Single
GP07-20-120-DC	1.181	1.535		●	●	0.276	0.787	0.138	0.472	Double
GP08	1.536	1.772	●			0.315	0.984	0.177	0.610	Single
GP08-25-155-DC	1.536	1.772		●	●	0.315	0.984	0.177	0.610	Double
GP10S	1.772	2.244	●			0.394	1.181	0.177	0.787	Single
GP10-30-200-DC	1.772	2.244		●	●	0.394	1.181	0.177	0.787	Double
GP12	2.244	3.504	●			0.472	1.378	0.217	0.984	Single
GP12-35-250-DC	2.244	3.504		●	●	0.472	1.378	0.217	0.984	Double

●: Line up
Package quantity = 5 pcs.

Grade recommendations

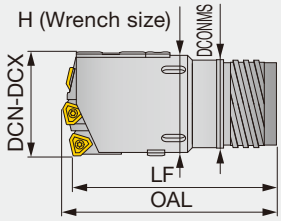
ISO	Oil coolant			Water based coolant		
	First choice	Second choice	Third choice	First choice	Second choice	Third choice
P	FH3125	F1122	FH3135	FH3135	FH3125	-
M	FH3135	FH3125	F1122	FH3135	FH3125	-
K	FH3125	F1122	FH3135	FH3135	FH3125	-
N	FH3125	F1122	FH3135	FH3135	FH3125	-
S	FH3135	FH3125	F1122	FH3135	FH3125	-
H	FH3135	FH3125	F1122	FH3135	FH3125	-

UNIDEX STS

UNIDEX STS-EX

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm (ø1.496" - ø4.212"), CICT = 3





Standard products

Metric	DC (in)	DC (mm)	CICT	Drill tube		Drill head			
				Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS17E-80.00	3.150	80	3	ST17	75	191	180	70	83
KUSTS18E-90.00	3.543	90	3	ST18	82	193	180	77	96
KUSTS19E-100.00	3.937	100	3	ST19	94	193	180	89	102

Non-standard products (to be supplied on request)

When ordering

KUSTSE - xx.xx**

Drill head | Diameter (mm)

e.g. Designation for tool diameter ø60 mm: **KUSTS12E-60.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS07E-xx.xx	1.496	38	1.559	39.6	3	ST07	33	90	85	30	37
KUSTS08E-xx.xx	1.559	39.61	1.693	43	3	ST08	36	91	85	33	40
KUSTS09E-xx.xx	1.693	43.01	1.850	47	3	ST09	39	101	95	36	43
KUSTS10E-xx.xx	1.851	47.01	2.035	51.7	3	ST10	43	102	95	39	48
KUSTS11E-xx.xx	2.036	51.71	2.213	56.2	3	ST11	47	107	100	43	52
KUSTS12E-xx.xx	2.213	56.21	2.386	60.6	3	ST12	51	118	110	47	57
KUSTS13E-xx.xx	2.386	60.61	2.559	65	3	ST13	56	119	110	51	61
KUSTS14E-xx.xx	2.559	65	2.637	66.99	3	ST14	56	159	150	52	63
KUSTS15E-xx.xx	2.638	67	2.874	72.99	3	ST15	62	159	150	58	69
KUSTS16E-xx.xx	2.874	73	3.149	79.99	3	ST16	68	160	150	63	76
KUSTS17E-xx.xx	3.150	80	3.425	86.99	3	ST17	75	191	180	70	83
KUSTS18E-xx.xx	3.425	87	3.937	99.99	3	ST18	82	193	180	77	96
KUSTS19E-xx.xx	3.937	100	4.212	106.99	3	ST19	94	193	180	89	102

For drill heads in diameters of ø92 mm or larger, a filler is attached in place of guide pad.
Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

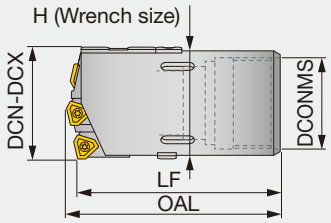
Reference pages: Spare parts → J149, Inserts → J148, J164, Guide pads → J165, Drill tube (STS) → J174

UNIDEX STS

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm (ø1.496 " - ø4.212"), CICT = 3





Non-standard products (to be supplied on request)

When ordering

KUSTS**	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø60 mm: **KUSTS51-60.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS33-xx.xx	1.496	38	1.574	39.99	3	UB33	33	85	80	30	37
KUSTS36-xx.xx	1.575	40	1.732	43.99	3	UB36	36	86	80	33	41
KUSTS39-xx.xx	1.732	44	1.850	46.99	3	UB39	39	96	90	37	43
KUSTS43-xx.xx	1.850	47	2.047	51.99	3	UB43	43	97	90	41	48
KUSTS47-xx.xx	2.047	52	2.244	56.99	3	UB47	47	107	100	44	53
KUSTS51-xx.xx	2.244	57	2.401	60.99	3	UB51	51	118	110	49	57
KUSTS56-xx.xx	2.402	61	2.677	67.99	3	UB56	56	119	110	53	64
KUSTS62-xx.xx	2.677	68	2.952	74.99	3	UB62	62	129	120	59	71
KUSTS68-xx.xx	2.953	75	3.189	80.99	3	UB68	68	161	150	65	77
KUSTS75-xx.xx	3.189	81	3.582	90.99	3	UB75	75	162	150	71	87
KUSTS82-xx.xx	3.583	91	3.897	98.99	3	UB82	82	162	150	79	95
KUSTS94-xx.xx	3.898	99	4.212	106.99	3	UB94	94	163	150	90	102

For drill heads in diameters of ø92 mm or larger, a filler is attached in place of guide pad.
Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral insert	Qty	Intermediate insert	Qty	Central insert	Qty
38 - 39.99	NPMX08**R...	1	NPMX08**R...	1	NPMX08**R...	1
40 - 44.99	TPMX14**R...	1	NPMX08**R...	1	NPMX08**R...	1
45 - 47.99	TPMX14**R...	1	NPMX08**R...	1	TPMX14**R...	1
48 - 51.99	TPMX14**R...	1	TPMX14**R...	1	TPMX14**R...	1
52 - 54.99	TPMX17**R...	1	TPMX14**R...	1	TPMX14**R...	1
55 - 57.99	TPMX17**R...	1	TPMX14**R...	1	TPMX17**R...	1
58 - 59.99	TPMX17**R...	1	TPMX17**R...	1	TPMX17**R...	1
60 - 63.99	TPMX17**R...	1	TPMX17**R...	1	TPMX17**R...	1
64 - 67.99	TPMX24**R...	1	TPMX17**R...	1	TPMX17**R...	1
68 - 77.99	TPMX17**R...	1	TPMX24**R...	1	TPMX24**R...	1
78 - 84.99	TPMX24**R...	1	TPMX24**R...	1	TPMX24**R...	1
85 - 91.99	TPMX28**R...	1	TPMX24**R...	1	TPMX24**R...	1
92 - 98.99	TPMX24**R...	1	TPMX28**R...	1	TPMX28**R...	1
99 - 106.99	TPMX28**R...	1	TPMX28**R...	1	TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

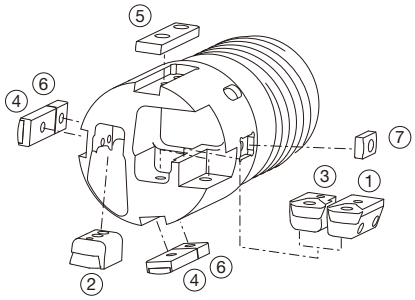
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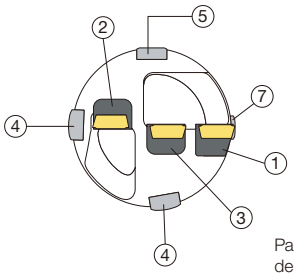
Reference pages: Spare parts → J149, Inserts → J164, Guide pads → J165, Drill tube (STS) → J176

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ①	Cartridge ②	Cartridge ③	④	Qty	⑤	Qty	⑥	Qty	⑦	Qty
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 3)

Tool diameter DCN-DCX (mm)	Insert screw					
	Peripheral		Intermediate		Central	
	Cartridge ①		Cartridge ②		Cartridge ③	
	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-2.2	T-7D
40 - 44.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.2	T-7D
45 - 47.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.5	T-8D
48 - 51.99	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-2.5	T-8D
52 - 54.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-2.5	T-8D
55 - 57.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-3.5D	T-9D
58 - 59.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
60 - 63.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
64 - 67.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
68 - 77.99	CSTB-3.5D	T-9D	CSTB-4M	T-15D	CSTB-4M	T-15D
78 - 84.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D
85 - 91.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D
92 - 98.99	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D
99 - 106.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

SCREWS, WRENCHES (CICT = 3)

Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ②		Cartridge ③					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	LS1803RH	H2	AS0003-5	H1.5	CSTB-3	T-9D	CSTB-3	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
40 - 44.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
45 - 47.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3.5	T-9D	CSTB-4S	T-15D	CSTB-3S	T-9D
48 - 51.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3.5	T-15D	CSTB-3.5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
52 - 54.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTB-3.5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
55 - 57.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTA-5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
58 - 59.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
60 - 63.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
64 - 67.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
68 - 77.99	LS1805RH	H3	AS0005-10	H2.5	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
78 - 84.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
85 - 91.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
92 - 98.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
99 - 106.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206S	H3	LS1206S	H3	CSTA-5S	T-15D

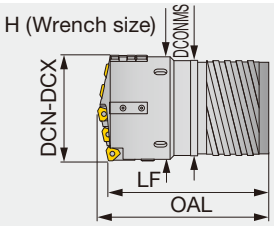
Recommended clamping torque: please see page J166.

UNIDEX STS

UNIDEX STS-EX

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter ø107.00 - ø168.99 mm (ø4.231" - ø6.653"), CICT = 5





Non-standard products (to be supplied on request)

When ordering

KUSTS**E	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø150 mm: **KUSTS23E-150.00**

Metric	DCN		DCX		CICT	Drill tube		OAL	Drill head		
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)		LF	DCONMS	H
KUSTS19E-xx.xx	4.213	107	4.409	111.99	5	ST19	94	197	180	89	107
KUSTS20E-xx.xx	4.409	112	4.881	123.99	5	ST20	106	221	205	101	119
KUSTS21E-xx.xx	4.882	124	5.354	135.99	5	ST21	118	222	205	113	131
KUSTS22E-xx.xx	5.354	136	5.826	147.99	5	ST22	130	223	205	125	143
KUSTS23E-xx.xx	5.827	148	6.299	159.99	5	ST23	142	245	225	137	155
KUSTS24E-xx.xx	6.299	160	6.653	168.99	5	ST24	154	246	225	149	164

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

STANDARD CUTTING CONDITIONS

See more information

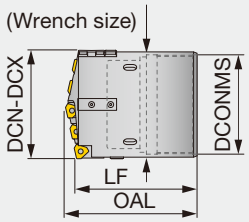
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Reference pages: Spare parts → J152, Inserts → J151, J164, Guide pads → J165, Drill tube (STS) → J174

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter ø107.00 - ø168.99 mm (ø4.213" - ø6.653"), CICT = 5





Non-standard products (to be supplied on request)

When ordering

KUSTS**	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø150 mm: **KUSTS142-150.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS94-xx.xx	4.213	107	4.370	110.99	5	UB94	94	164	150	90	106
KUSTS106-xx.xx	4.370	111	4.842	122.99	5	UB106	106	165	150	102	118
KUSTS118-xx.xx	4.843	123	5.315	134.99	5	UB118	118	167	150	114	130
KUSTS130-xx.xx	5.315	135	5.866	148.99	5	UB130	130	168	150	126	144
KUSTS142-xx.xx	5.866	149	6.378	161.99	5	UB142	142	170	150	139	157
KUSTS154-xx.xx	6.378	162	6.653	168.99	5	UB154	154	211	190	151	164

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral	Qty	Intermediate	Qty	Intermediate	Qty	Central	Qty
107.00 - 117.99	TPMX24**R...	1	TPMX17**R...	3	-		TPMX24**R...	1
118.00 - 135.99	TPMX24**R...	1	TPMX24**R...	3	-		TPMX24**R...	1
136.00 - 144.99	TPMX24**R...	1	TPMX24**R...	3	-		TPMX28**R...	1
145.00 - 150.99	TPMX24**R...	1	TPMX24**R...	2	TPMX28**R...	1	TPMX28**R...	1
151.00 - 156.99	TPMX28**R...	1	TPMX24**R...	2	TPMX28**R...	1	TPMX28**R...	1
157.00 - 162.99	TPMX28**R...	1	TPMX24**R...	1	TPMX28**R...	2	TPMX28**R...	1
163.00 - 168.99	TPMX28**R...	1	TPMX28**R...	3	-		TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.

Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

Reference pages: Spare parts → J152, Inserts → J164, Guide pads → J165, Drill tube (STS) → J176

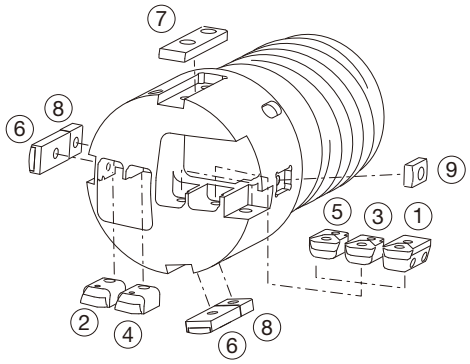
SPARE PARTS

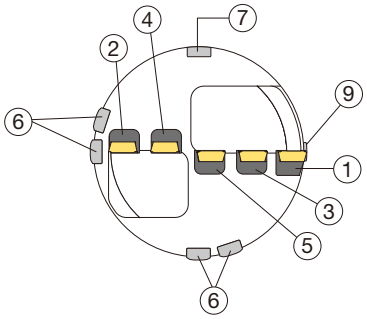
Tool diameter DCN-DCX (mm)	Cartridge				
	Peripheral	Intermediate			Central
	Cartridge ①	Cartridge ②	Cartridge ③	Cartridge ④	Cartridge ⑤
107.00 - 117.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	IOZ402 - 32	IOZ402 - 43
118.00 - 135.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43
136.00 - 144.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63
145.00 - 150.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
151.00 - 156.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
157.00 - 162.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
163.00 - 168.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63

SPARE PARTS

Tool diameter DCN-DCX (mm)	Guide pad							
	Guide pad		Filler		Protector		Sub guide pad	
	⑥	Qty	⑦	Qty	⑧	Qty	⑨	Qty
107.00 - 117.99	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1
118.00 - 135.99	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1
136.00 - 144.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
145.00 - 150.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
151.00 - 156.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
157.00 - 162.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
163.00 - 168.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 5)

Tool diameter DCN-DCX (mm)	Insert screw									
	Peripheral		Intermediate						Central	
	Cartridge ①		Cartridge ②		Cartridge ③		Cartridge ④		Cartridge ⑤	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
107.00 - 117.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-4M	T-15D
118.00 - 135.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D
136.00 - 144.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D
145.00 - 150.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
151.00 - 156.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
157.00 - 162.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
163.00 - 168.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

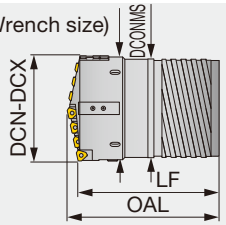
SCREWS, WRENCHES (CICT = 5)

Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ② - ④		Cartridge ⑤					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
107.00 - 117.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	LS1206	H3	LS1206S	H3	CSTA-5S	T-15D
118.00 - 135.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3	LS1206SSS	H3	CSTA-5S	T-15D
136.00 - 144.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	LS1206SSS	H3	CSTA-5S	T-15D
145.00 - 150.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	LS1206SSS	H3	CSTA-5S	T-15D
151.00 - 156.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
157.00 - 162.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
163.00 - 168.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D

Recommended clamping torque: please see page J166.

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter ø169.00 - ø232.99 mm (ø6.654" - ø9.173"), CICT = 7





Non-standard products (to be supplied on request)

When ordering

KUSTS**E	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø185 mm: **KUSTS26E-185.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS24E-xx.xx	6.654	169	6.771	171.99	7	ST24	154	246	225	149	167
KUSTS25E-xx.xx	6.772	172	7.244	183.99	7	ST25	166	247	225	161	179
KUSTS26E-xx.xx	7.244	184	7.716	195.99	7	ST26	178	267	245	173	191
KUSTS27E-xx.xx	7.717	196	8.189	207.99	7	ST27	190	270	245	185	203
KUSTS28E-xx.xx	8.189	208	8.661	219.99	7	ST28	202	271	245	197	215
KUSTS29E-xx.xx	8.661	220	9.133	231.99	7	ST29	214	293	265	208	227
KUSTS30E-xx.xx	9.134	232	9.173	232.99	7	ST30	226	293	265	220	228

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

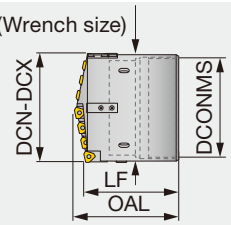
Reference pages: Spare parts → J155, Inserts → J154, J164, Guide pads → J165, Drill tube (STS) → J174

UNIDEX STS

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter ø169.00 - ø232.99 mm (ø6.654" - ø9.173"), CICT = 7





Non-standard products (to be supplied on request)

When ordering

KUSTS**	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø185 mm: **KUSTS166-185.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS154-xx.xx	6.654	169	6.850	173.99	7	UB154	154	211	190	151	169
KUSTS166-xx.xx	6.850	174	7.322	185.99	7	UB166	166	213	190	163	181
KUSTS178-xx.xx	7.323	186	7.795	197.99	7	UB178	178	212	190	175	193
KUSTS190-xx.xx	7.795	198	8.267	209.99	7	UB190	190	215	190	187	205
KUSTS202-xx.xx	8.268	210	8.740	221.99	7	UB202	202	217	190	199	217
KUSTS214-xx.xx	8.740	222	9.173	232.99	7	UB214	214	218	190	211	228

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral	Qty	Intermediate	Qty	Intermediate	Qty	Central	Qty
169.00 - 188.99	TPMX24**R...	1	TPMX24**R...	5	-		TPMX24**R...	1
189.00 - 196.99	TPMX24**R...	1	TPMX24**R...	5	-		TPMX28**R...	1
197.00 - 202.99	TPMX24**R...	1	TPMX24**R...	4	TPMX28**R...	1	TPMX28**R...	1
203.00 - 208.99	TPMX24**R...	1	TPMX24**R...	3	TPMX28**R...	2	TPMX28**R...	1
209.00 - 214.99	TPMX28**R...	1	TPMX24**R...	3	TPMX28**R...	2	TPMX28**R...	1
215.00 - 220.99	TPMX28**R...	1	TPMX24**R...	2	TPMX28**R...	3	TPMX28**R...	1
221.00 - 226.99	TPMX28**R...	1	TPMX24**R...	1	TPMX28**R...	4	TPMX28**R...	1
227.00 - 232.99	TPMX28**R...	1	TPMX28**R...	5	-		TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.

Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

Reference pages: Spare parts → J155, Inserts → J164, Guide pads → J165, Drill tube (STS) → J176

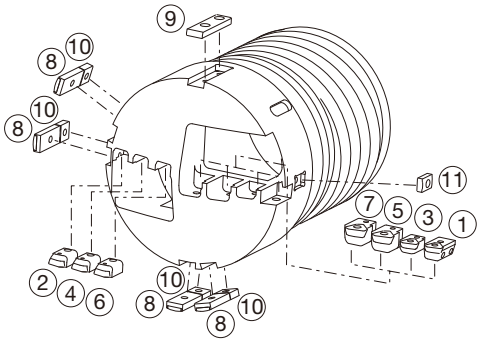
SPARE PARTS

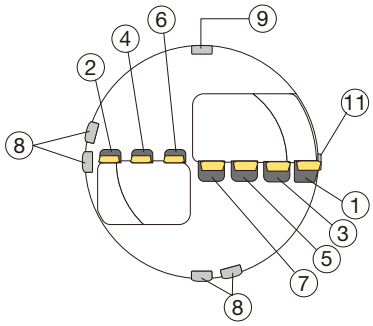
Tool diameter DCN-DCX (mm)	Cartridge						
	Peripheral	Intermediate					Central
	Cartridge ①	Cartridge ②	Cartridge ③	Cartridge ④	Cartridge ⑤	Cartridge ⑥	Cartridge ⑦
169.00 - 188.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43
189.00 - 196.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63
197.00 - 202.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
203.00 - 208.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
209.00 - 214.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
215.00 - 220.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
221.00 - 226.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
227.00 - 232.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63

SPARE PARTS

Tool diameter DCN-DCX (mm)	Guide pad							
	Guide pad		Filler		Protector		Sub guide pad	
	⑧	Qty	⑨	Qty	⑩	Qty	⑪	Qty
169.00 - 188.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
189.00 - 196.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
197.00 - 202.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
203.00 - 208.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
209.00 - 214.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
215.00 - 220.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
221.00 - 226.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
227.00 - 232.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 7)

Tool diameter DCN-DCX (mm)	Insert screw													
	Peripheral		Intermediate										Central	
	Cartridge ①		Cartridge ②		Cartridge ③		Cartridge ④		Cartridge ⑤		Cartridge ⑥		Cartridge ⑦	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
169.00 - 188.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D
189.00 - 196.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D
197.00 - 202.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
203.00 - 208.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
209.00 - 214.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
215.00 - 220.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
221.00 - 226.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
227.00 - 232.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

SCREWS, WRENCHES (CICT = 7)

Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ② - ⑥		Cartridge ⑦					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
169.00 - 188.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206	H3L	LS1206SSS	H3	CSTA-5S	T-15D
189.00 - 196.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206S	H3L	LS1206SSS	H3	CSTA-5S	T-15D
197.00 - 202.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206S	H3L	LS1206SSS	H3	CSTA-5S	T-15D
203.00 - 208.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206S	H3L	LS1206SSS	H3	CSTA-5S	T-15D
209.00 - 214.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
215.00 - 220.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
221.00 - 226.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
227.00 - 232.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D

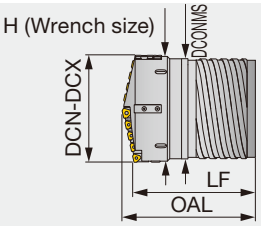
Recommended clamping torque: please see page J166.

UNIDEX STS

UNIDEX STS-EX

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter ø233.00 - ø291.99 mm, CICT = 9





Non-standard products (to be supplied on request)

When ordering

KUSTS**E	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø240 mm: **KUSTS30E-240.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS30E-xx.xx	9.173	233	9.606	243.99	9	ST30	226	294	265	220	239
KUSTS31E-xx.xx	9.606	244	10.078	255.99	9	ST31	238	294	265	232	251
KUSTS32E-xx.xx	10.079	256	10.551	267.99	9	ST32	250	322	290	244	263
KUSTS33E-xx.xx	10.551	268	11.023	279.99	9	ST33	262	323	290	256	275
KUSTS34E-xx.xx	11.024	280	11.496	291.99	9	ST34	274	325	290	268	287

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.
Larger sizes available upon request. Please contact your dealer for further information.

STANDARD CUTTING CONDITIONS

See more information

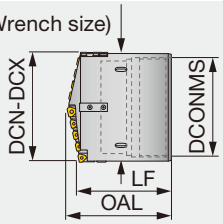
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Reference pages: Spare parts → J158, Inserts → J157, J164, Guide pads → J165, Drill tube (STS) → J174

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter ø233.00 - ø293.99 mm (ø9.173" - ø11.574"), CICT = 9





Non-standard products (to be supplied on request)

When ordering

KUSTS**	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø240 mm: **KUSTS226-240.00**

Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS214-xx.xx	9.173	233	9.212	233.99	9	UB214	214	217	190	211	229
KUSTS226-xx.xx	9.213	234	9.685	245.99	9	UB226	226	219	190	223	241
KUSTS238-xx.xx	9.685	246	10.157	257.99	9	UB238	238	221	190	235	253
KUSTS250-xx.xx	10.157	258	10.630	269.99	9	UB250	250	242	210	245	265
KUSTS262-xx.xx	10.630	270	11.102	281.99	9	UB262	262	244	210	259	277
KUSTS274-xx.xx	11.102	282	11.574	293.99	9	UB274	274	245	210	271	289

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.
Larger sizes available upon request. Please contact your dealer for further information.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral	Qty	Intermediate	Qty	Intermediate	Qty	Central	Qty
233.00 - 247.99	TPMX24**R...	1	TPMX24**R...	7	-		TPMX28**R...	1
248.00 - 253.99	TPMX28**R...	1	TPMX24**R...	7	-		TPMX28**R...	1
254.00 - 258.99	TPMX28**R...	1	TPMX24**R...	6	TPMX28**R...	1	TPMX28**R...	1
259.00 - 264.99	TPMX28**R...	1	TPMX24**R...	5	TPMX28**R...	2	TPMX28**R...	1
265.00 - 271.99	TPMX28**R...	1	TPMX24**R...	4	TPMX28**R...	3	TPMX28**R...	1
272.00 - 275.99	TPMX28**R...	1	TPMX24**R...	3	TPMX28**R...	4	TPMX28**R...	1
276.00 - 284.99	TPMX28**R...	1	TPMX24**R...	2	TPMX28**R...	5	TPMX28**R...	1
285.00 - 289.99	TPMX28**R...	1	TPMX24**R...	1	TPMX28**R...	6	TPMX28**R...	1
290.00 - 293.99	TPMX28**R...	1	TPMX28**R...	7	-		TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

Reference pages: Spare parts → J158, Inserts → J164, Guide pads → J165, Drill tube (STS) → J176

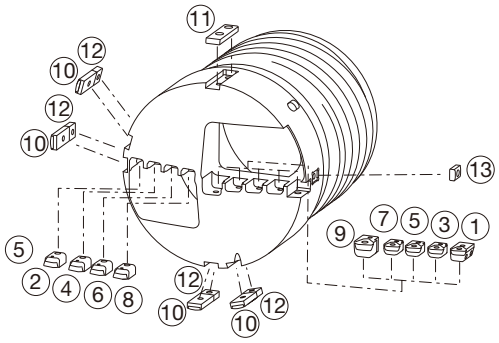
SPARE PARTS

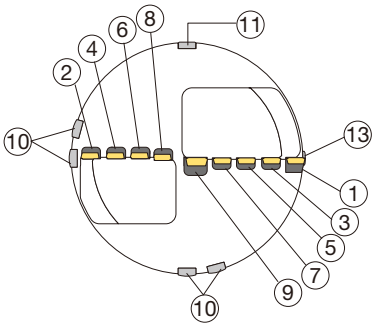
Tool diameter DCN-DCX (mm)	Cartridge							
	Peripheral	Intermediate						
	Cartridge ①	Cartridge ②	Cartridge ③	Cartridge ④	Cartridge ⑤	Cartridge ⑥	Cartridge ⑦	Cartridge ⑧
233.00 - 247.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43
248.00 - 253.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43
254.00 - 258.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43
259.00 - 264.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43
265.00 - 271.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43
272.00 - 275.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63
276.00 - 284.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
285.00 - 289.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
290.00 - 293.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge	Guide pad							
	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ⑨	⑩	Qty	⑪	Qty	⑫	Qty	⑬	Qty
233.00 - 247.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
248.00 - 253.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
254.00 - 258.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
259.00 - 264.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
265.00 - 271.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
272.00 - 275.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
276.00 - 284.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
285.00 - 289.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
290.00 - 293.99	IOZ402 - 63	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 9)

Tool diameter DCN-DCX (mm)	Insert screw																	
	Peripheral		Intermediate														Central	
	Cartridge ①		Cartridge ②		Cartridge ③		Cartridge ④		Cartridge ⑤		Cartridge ⑥		Cartridge ⑦		Cartridge ⑧		Cartridge ⑨	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
233.00 - 247.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D
248.00 - 253.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D
254.00 - 258.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
259.00 - 264.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
265.00 - 271.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
272.00 - 275.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
276.00 - 284.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
285.00 - 289.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
290.00 - 293.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

SCREWS, WRENCHES (CICT = 9)

Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ② - ⑧		Cartridge ⑨					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
233.00 - 247.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206S	H3L	LS1206SSS	H3	CSTA-5S	T-15D
248.00 - 253.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
254.00 - 258.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
259.00 - 264.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
265.00 - 271.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
272.00 - 275.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
276.00 - 284.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
285.00 - 289.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
290.00 - 293.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D

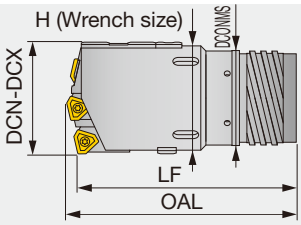
Recommended clamping torque: please see page J166.

UNIDEX DTS

UNIDEX DTS-EX

Indexable drill head with external 4-start thread for double tube system (DTS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm (ø1.496" - ø4.212"), CICT = 3





DTS Double Tube System

Non-standard products (to be supplied on request)

When ordering

KUDTSE** - xx.xx**

Drill head | **Diameter (mm)**

e.g. Designation for tool diameter ø60 mm: **KUDTS13E-60.00**

Metric	DCN		DCX		CICT	Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS08E-xx.xx	1.496	38	1.559	39.6	3	OT08	35.5	90	85	33	37
KUDTS09E-xx.xx	1.559	39.61	1.693	43	3	OT09	39	91	85	36	40
KUDTS10E-xx.xx	1.693	43.01	1.850	47	3	OT10	42.5	101	95	39	43
KUDTS11E-xx.xx	1.851	47.01	2.035	51.7	3	OT11	46.5	102	100	43	48
KUDTS12E-xx.xx	2.036	51.71	2.213	56.2	3	OT12	51	107	100	47	52
KUDTS13E-xx.xx	2.213	56.21	2.559	65	3	OT13	55.5	119	110	51	61
KUDTS14E-xx.xx	2.559	65	2.637	66.99	3	OT14	56	159	150	52	63
KUDTS15E-xx.xx	2.638	67	2.874	72.99	3	OT15	62	159	150	58	69
KUDTS16E-xx.xx	2.874	73	3.149	79.99	3	OT16	68	160	150	63	76
KUDTS17E-xx.xx	3.150	80	3.425	86.99	3	OT17	75	191	180	70	83
KUDTS18E-xx.xx	3.425	87	3.937	99.99	3	OT18	82	193	180	77	96
KUDTS19E-xx.xx	3.937	100	4.212	106.99	3	OT19	94	193	180	89	102

For drill heads in diameters of ø92 mm or larger, a filler is attached in place of guide pad.
Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral insert	Qty	Intermediate insert	Qty	Central insert	Qty
38 - 39.99	NPMX08**R...	1	NPMX08**R...	1	NPMX08**R...	1
40 - 44.99	TPMX14**R...	1	NPMX08**R...	1	NPMX08**R...	1
45 - 47.99	TPMX14**R...	1	NPMX08**R...	1	TPMX14**R...	1
48 - 51.99	TPMX14**R...	1	TPMX14**R...	1	TPMX14**R...	1
52 - 54.99	TPMX17**R...	1	TPMX14**R...	1	TPMX14**R...	1
55 - 57.99	TPMX17**R...	1	TPMX14**R...	1	TPMX17**R...	1
58 - 59.99	TPMX17**R...	1	TPMX17**R...	1	TPMX17**R...	1
60 - 63.99	TPMX17**R...	1	TPMX17**R...	1	TPMX17**R...	1
64 - 67.99	TPMX24**R...	1	TPMX17**R...	1	TPMX17**R...	1
68 - 77.99	TPMX17**R...	1	TPMX24**R...	1	TPMX24**R...	1
78 - 84.99	TPMX24**R...	1	TPMX24**R...	1	TPMX24**R...	1
85 - 91.99	TPMX28**R...	1	TPMX24**R...	1	TPMX24**R...	1
92 - 98.99	TPMX24**R...	1	TPMX28**R...	1	TPMX28**R...	1
99 - 106.99	TPMX28**R...	1	TPMX28**R...	1	TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

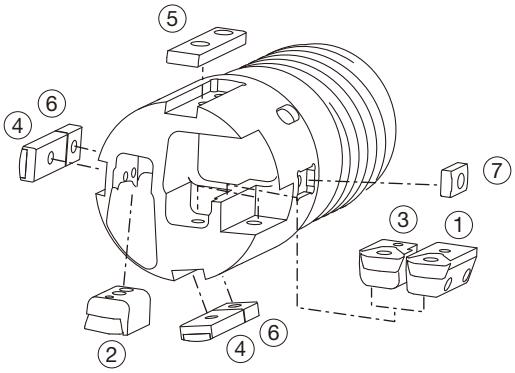
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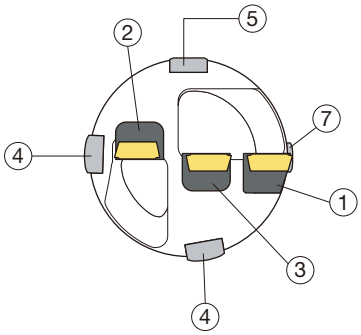
Reference pages: Spare parts → J160, Inserts → J164, Guide pads → J165, Drill tube (STS) → J178

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ①	Cartridge ②	Cartridge ③	④	Qty	⑤	Qty	⑥	Qty	⑦	Qty
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 3)

Tool diameter DCN-DCX (mm)	Insert screw					
	Peripheral		Intermediate		Central	
	Cartridge ①		Cartridge ②		Cartridge ③	
	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-2.2	T-7D
40 - 44.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.2	T-7D
45 - 47.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.5	T-8D
48 - 51.99	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-2.5	T-8D
52 - 54.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-2.5	T-8D
55 - 57.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-3.5D	T-9D
58 - 59.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
60 - 63.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
64 - 67.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D
68 - 77.99	CSTB-3.5D	T-9D	CSTB-4M	T-15D	CSTB-4M	T-15D
78 - 84.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D
85 - 91.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D
92 - 98.99	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D
99 - 106.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

SCREWS, WRENCHES (CICT = 3)

Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ②		Cartridge ③					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	LS1803RH	H2	AS0003-5	H1.5	CSTB-3	T-9D	CSTB-3	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
40 - 44.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
45 - 47.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3.5	T-9D	CSTB-4S	T-15D	CSTB-3S	T-9D
48 - 51.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3.5	T-15D	CSTB-3.5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
52 - 54.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTB-3.5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
55 - 57.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTA-5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
58 - 59.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
60 - 63.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
64 - 67.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	CSTA-5	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
68 - 77.99	LS1805RH	H3	AS0005-10	H2.5	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
78 - 84.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
85 - 91.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
92 - 98.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	CSTA-5S	T-15D	CSTB-3S	T-9D
99 - 106.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206S	H3	LS1206S	H3	CSTA-5S	T-15D

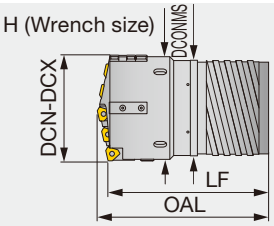
Recommended clamping torque: please see page J166.

UNIDEX DTS

UNIDEX DTS-EX

Indexable drill head with external 4-start thread for double tube system (DTS), diameters adjustable, tool diameter ø107.00 - ø168.99 mm (ø4.213" - ø6.653"), CICT = 5





DTS Double Tube System

Non-standard products (to be supplied on request)

When ordering

KUDTS**E	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø150 mm: **KUDTS23E-150.00**

Metric	DCN		DCX		CICT	Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS19E-xx.xx	4.213	107	4.409	111.99	5	OT19	94	197	180	89	107
KUDTS20E-xx.xx	4.409	112	4.881	123.99	5	OT20	106	221	205	101	119
KUDTS21E-xx.xx	4.882	124	5.354	135.99	5	OT21	118	222	205	113	131
KUDTS22E-xx.xx	5.354	136	5.826	147.99	5	OT22	130	223	205	125	143
KUDTS23E-xx.xx	5.827	148	6.299	159.99	5	OT23	142	245	225	137	155
KUDTS24E-xx.xx	6.299	160	6.653	168.99	5	OT24	154	246	225	149	164

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral	Qty	Intermediate	Qty	Intermediate	Qty	Central	Qty
107.00 - 117.99	TPMX24**R...	1	TPMX17**R...	3	-		TPMX24**R...	1
118.00 - 135.99	TPMX24**R...	1	TPMX24**R...	3	-		TPMX24**R...	1
136.00 - 144.99	TPMX24**R...	1	TPMX24**R...	3	-		TPMX28**R...	1
145.00 - 150.99	TPMX24**R...	1	TPMX24**R...	2	TPMX28**R...	1	TPMX28**R...	1
151.00 - 156.99	TPMX28**R...	1	TPMX24**R...	2	TPMX28**R...	1	TPMX28**R...	1
157.00 - 162.99	TPMX28**R...	1	TPMX24**R...	1	TPMX28**R...	2	TPMX28**R...	1
163.00 - 168.99	TPMX28**R...	1	TPMX28**R...	3	-		TPMX28**R...	1

⊕**Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details.

Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

STANDARD CUTTING CONDITIONS

See more information

e-catalog

Reference pages: Spare parts → J162, Inserts → J164, Guide pads → J165, Drill tube (STS) → J178

SPARE PARTS




Tool diameter DCN-DCX (mm)	Cartridge				
	Peripheral	Intermediate			Central
	Cartridge ①	Cartridge ②	Cartridge ③	Cartridge ④	Cartridge ⑤
107.00 - 117.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	IOZ402 - 32	IOZ402 - 43
118.00 - 135.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43
136.00 - 144.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 63
145.00 - 150.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
151.00 - 156.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 43	IOZ402 - 63
157.00 - 162.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63
163.00 - 168.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63	IOZ402 - 63

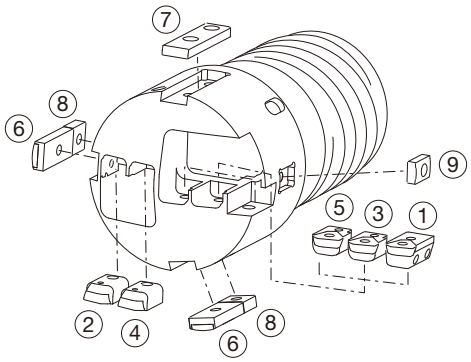
SPARE PARTS

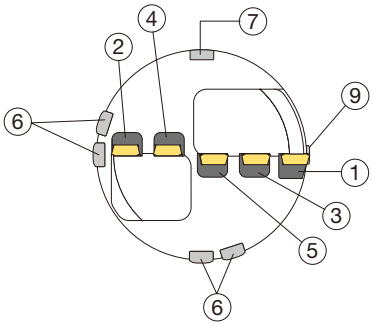





Tool diameter DCN-DCX (mm)	Guide pad							
	Guide pad		Filler		Protector		Sub guide pad	
	⑥	Qty	⑦	Qty	⑧	Qty	⑨	Qty
107.00 - 117.99	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1
118.00 - 135.99	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1
136.00 - 144.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
145.00 - 150.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
151.00 - 156.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
157.00 - 162.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1
163.00 - 168.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 5)




Tool diameter DCN-DCX (mm)	Insert screw									
	Peripheral		Intermediate						Central	
	Cartridge ①		Cartridge ②		Cartridge ③		Cartridge ④		Cartridge ⑤	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
107.00 - 117.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-4M	T-15D
118.00 - 135.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D
136.00 - 144.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D
145.00 - 150.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
151.00 - 156.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D
157.00 - 162.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D
163.00 - 168.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D

SCREWS, WRENCHES (CICT = 5)






Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ② - ④		Cartridge ⑤					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
107.00 - 117.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	LS1206	H3	LS1206S	H3	CSTA-5S	T-15D
118.00 - 135.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3	LS1206SSS	H3	CSTA-5S	T-15D
136.00 - 144.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	LS1206SSS	H3	CSTA-5S	T-15D
145.00 - 150.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3	LS1206SSS	H3	CSTA-5S	T-15D
151.00 - 156.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
157.00 - 162.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D
163.00 - 168.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3L	LS1206S	H3L	LS1206S	H3	CSTA-5S	T-15D

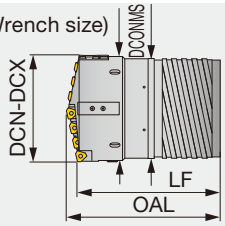
Recommended clamping torque: please see page J166.

UNIDEX DTS

UNIDEX DTS-EX

Indexable drill head with external 4-start thread for double tube system (DTS), diameters adjustable, tool diameter ø169.00 - ø183.99 mm (ø6.654" - ø7.244"), CICT = 7





DTS Double Tube System

Non-standard products (to be supplied on request)

When ordering

KUDTS**E	-	xx.xx
Drill head		Diameter (mm)

e.g. Designation for tool diameter ø170 mm: **KUDTS24E-170.00**

Metric	DCN		DCX		CICT	Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS24E-xx.xx	6.654	169	6.771	171.99	7	OT24	154	246	225	149	167
KUDTS25E-xx.xx	6.772	172	7.244	183.99	7	OT25	166	247	225	161	179

Before drilling operation, please adjust drill diameter. For diameter adjustment please see page L109.

INSERTS

Tool diameter DCN-DCX (mm)	Peripheral insert	Qty	Intermediate insert	Qty	Central insert	Qty
169.00 - 183.99	TPMX24**R...	1	TPMX24**R...	5	TPMX24**R...	1

⊕ **Plus**: The drill diameter can be increased by up to 5 mm by using the Plus parts. A maximum expandable diameter is determined by the peripheral cartridge size used on the drill. See page J167 for details. Drill heads come with cartridge, guide pad, filler, protector, sub guide pad and wrench, but do not include inserts.

SPARE PARTS




Tool diameter DCN-DCX (mm)	Cartridge						
	Peripheral	Intermediate					Central
	Cartridge ①	Cartridge ②	Cartridge ③	Cartridge ④	Cartridge ⑤	Cartridge ⑥	Cartridge ⑦
169.00 - 183.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43	IOZ402 - 43

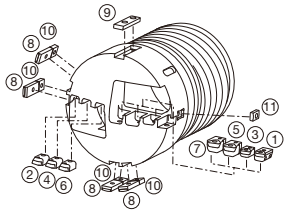
SPARE PARTS

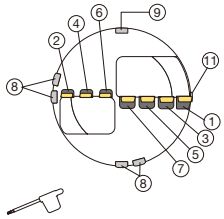





Tool diameter DCN-DCX (mm)	Guide pad							
	Guide pad		Filler		Protector		Sub guide pad	
	⑧	Qty	⑨	Qty	⑩	Qty	⑪	Qty
169.00 - 183.99	GP18	4	FL18 - M	1	GPT18 - M	4	CUG14 - M	1

See page L108 on handling of filler.





Part positions may vary depending on the drill size.

SCREWS, WRENCHES (CICT = 7)

Tool diameter DCN-DCX (mm)	Insert screw													
	Peripheral		Intermediate										Central	
	Cartridge ①		Cartridge ②		Cartridge ③		Cartridge ④		Cartridge ⑤		Cartridge ⑥		Cartridge ⑦	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
169.00 - 183.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D

SCREWS, WRENCHES (CICT = 7)






Tool diameter DCN-DCX (mm)	Cartridge screw								Guide pad screw			
	Peripheral				Intermediate		Central		Guide pad / Filler / Protector		Sub guide pad	
	Cartridge ①				Cartridge ② - ⑥		Cartridge ⑦					
	Screw	Wrench	Adj. screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
169.00 - 183.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3L	LS1206	H3L	LS1206SSS	H3	CSTA-5S	T-15D

Recommended clamping torque: please see page J166.

STANDARD CUTTING CONDITIONS

See more information

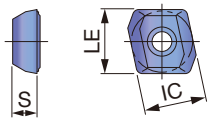
e-catalog

Reference pages: Inserts → J164, Guide pads → J165, Drill tube (DTS) → J178

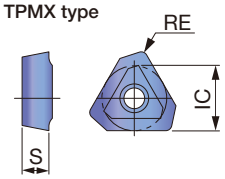
INSERT

NPMX**R, TPMX**R

NPMX type



TPMX type





P	Steel	★	★	☆	☆	
M	Stainless	☆	★	☆	☆	
K	Cast iron	☆	★	☆	☆	
N	Non-ferrous	☆	★	☆	☆	
S	Superalloys	☆	☆	★	☆	
H	Hard materials	☆	☆	★	☆	

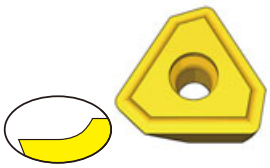
★ : First choice
☆ : Second choice

Designation	HAND	Coated				IC (in)	S (in)	RE (in)	LE (in)
		T9225	AH9130	AH8015	UC2220				
NPMX080308R-G	R	●	●		●	0.315	0.125	-	0.329
NPMX080304R-B	R				●	0.315	0.125	-	0.329
TPMX140308R-G	R	●	●	●	●	0.333	0.138	0.0315	-
TPMX140304R-B	R				●	0.333	0.138	0.0157	-
TPMX140308R-B	R		●	●		0.333	0.138	0.0315	-
TPMX140308R-DT	R		●		●	0.333	0.138	0.0315	-
TPMX170408R-G	R	●	●	●	●	0.406	0.157	0.0315	-
TPMX170404R-B	R				●	0.406	0.157	0.0157	-
TPMX170408R-B	R		●	●		0.406	0.157	0.0315	-
TPMX170408R-BG	R		●	●	●	0.406	0.157	0.0315	-
TPMX170408R-DT	R		●		●	0.406	0.157	0.0315	-
TPMX240512R-G	R	●	●	●	●	0.559	0.217	0.0472	-
TPMX240504R-B	R				●	0.559	0.217	0.0157	-
TPMX240512R-B	R		●	●		0.559	0.217	0.0472	-
TPMX240512R-BG	R		●	●	●	0.559	0.217	0.0472	-
TPMX240512R-DT	R		●		●	0.559	0.217	0.0472	-
TPMX280716R-G	R	●	●	●	●	0.669	0.295	0.063	-
TPMX280708R-B	R				●	0.669	0.295	0.063	-
TPMX280716R-B	R		●	●		0.669	0.295	0.063	-
TPMX280716R-BG	R		●	●	●	0.669	0.295	0.063	-
TPMX280716R-DT	R		●		●	0.669	0.295	0.063	-

●: Line up
Package quantity = 10 pcs.

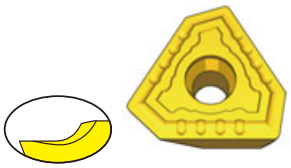
Chipbreaker

G



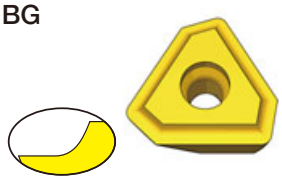
Versatile

B



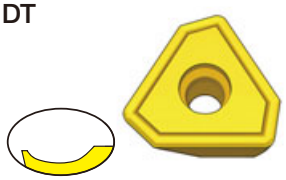
Provides good chip control in heat-resistant alloys

BG



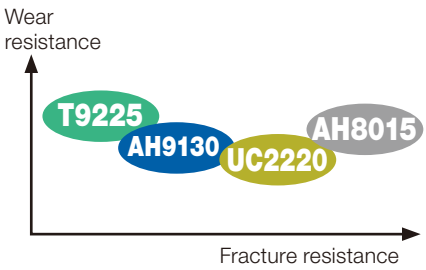
Provides good chip control in long-chipping steels

DT



Reduced cutting force

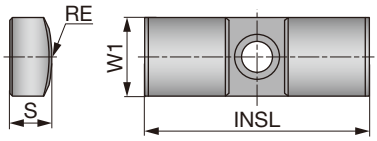
Insert grade



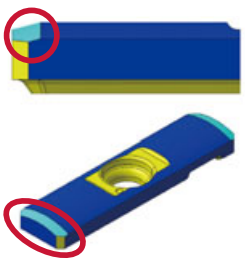
GUIDE PAD

GP08, 10, 14, 18

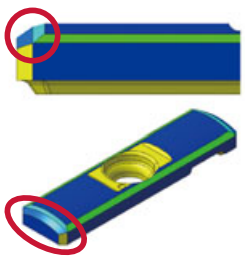




Single chamfer



Double chamfer (-DC)



Designation	DCN (in)	DCX (in)	Coated			W1 (in)	INSL (in)	S (in)	RE (in)	Chamfer
			F1122	FH3125	FH3135					
GP08	1.496	1.771	●			0.315	0.984	0.177	0.610	Single
GP08-25-155-DC	1.496	1.771		●	●	0.315	0.984	0.177	0.610	Double
GP10	1.772	2.362	●			0.394	1.378	0.236	0.787	Single
GP10-35-200-DC	1.772	2.362		●	●	0.394	1.378	0.236	0.787	Double
GP14-40-250-DC	2.362	3.897		●	●	0.551	1.575	0.295	0.984	Double
GP18-40-300-DC	3.898	11.574		●	●	0.709	1.575	0.354	1.181	Double

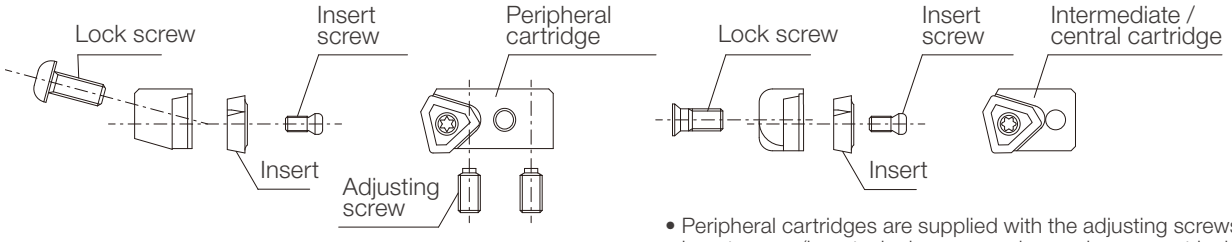
●: Line up
Package quantity = 5 pcs.

Grade recommendations

ISO	Oil coolant			Water based coolant	
	First choice	Second choice	Third choice	First choice	Second choice
P	FH3125	F1122	FH3135	FH3135	FH3125
M	FH3135	FH3125	F1122	FH3135	FH3125
K	FH3125	F1122	FH3135	FH3135	FH3125
N	FH3125	F1122	FH3135	FH3135	FH3125
S	FH3135	FH3125	F1122	FH3135	FH3125
H	FH3135	FH3125	F1122	FH3135	FH3125

Replacement parts

Cartridges and inserts



- Peripheral cartridges are supplied with the adjusting screws and insert screw (inserts, lock screw and wrenches are not included)
- Central and intermediate cartridges are supplied with insert screw (inserts, lock screw and wrenches are not included)

Peripheral inserts and accessories

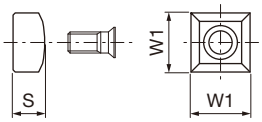
Cartridge	Insert	Insert screw	Wrench	Adjusting screw	Wrench	Lock screw	Wrench
OZ05R	NPMX080308R-G	CSTB-2.2	T-7D	AS0003-5	H1.5	LS1803RH	H2
OZ402-04	TPMX140308R-G	CSTB-2.5	T-8D	AS0004-8	H2	LS1803.5RH	H2.5
OZ402-32	TPMX170408R-G	CSTB-3.5D	T-9D	AS0005-10	H2.5	LS1805RH	H3
OZ402-43	TPMX240512R-G	CSTB-4M	T-15D	AS0005-15	H2.5	LS1806RH	H4
OZ402-63	TPMX280716R-G	CSTB-5	T-20D	AS0006-15	H3	LS1806RH	H4

Central and intermediate inserts and accessories

Cartridge	Insert	Insert screw	Wrench	Lock screw	Wrench
IOZ05R	NPMX080308R-G	CSTB-2.2	T-7D	CSTB-3	T-9D
IOZ402-04	TPMX140308R-G	CSTB-2.5	T-8D	CSTB-3.5	T-15D
IOZ402-32	TPMX170408R-G	CSTB-3.5D	T-9D	CSTA-5	T-15D
IOZ402-43	TPMX240512R-G	CSTB-4M	T-15D	LS1206	H3 / H3L**
IOZ402-63	TPMX280716R-G	CSTB-5	T-20D	LS1206 / LS1206S*	H3 / H3L**

*LS1206S for central cartridge
**H3L for ø151.00 mm - ø320.00 mm

Guide pads and protectors



Guide pad	Dimensions (in)			Lock screw	Wrench	Protector	Dimensions (in)		Lock screw	Wrench
	W	H	L				W1	S		
GP08	0.315	0.177	0.984	CSTB-3S	T-9D	GPT08	0.315	0.177	CSTB-3S	T-9D
GP08-25-155-DC	0.315	0.177	0.984	CSTB-3S	T-9D	GPT08	0.315	0.177	CSTB-3S	T-9D
GP10	0.394	0.236	1.378	CSTB-4S	T-15D	GPT10	0.394	0.236	CSTB-4S	T-15D
GP10-35-200-DC	0.394	0.236	1.378	CSTB-4S	T-15D	GPT10	0.394	0.236	CSTB-4S	T-15D
GP14	0.551	0.295	1.575	CSTA-5S	T-15D	GPT14	0.551	0.295	CSTA-5S	T-15D
GP14-40-250-DC	0.551	0.295	1.575	CSTA-5S	T-15D	GPT14	0.551	0.295	CSTA-5S	T-15D
GP18	0.709	0.354	1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709	0.354	LS1206S	H3
GP18-40-300-DC	0.709	0.354	1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709	0.354	LS1206S	H3

***LS1206SSS for dimensional guide pad
(for diameter ø118.00 - ø150.99, ø169.00 - ø208.99 and ø233.00 - ø247.99 mm)

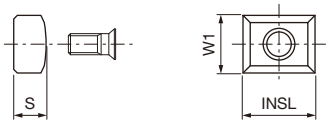
Recommended clamping torque

Screw	(lbs·ft)	(N·m)
CSTA-5	2.58	3.5
CSTA-5S	2.58	3.5
CSTB-2.2	0.74	1
CSTB-2.5	0.96	1.3
CSTB-3	1.70	2.3
CSTB-3S	1.70	2.3

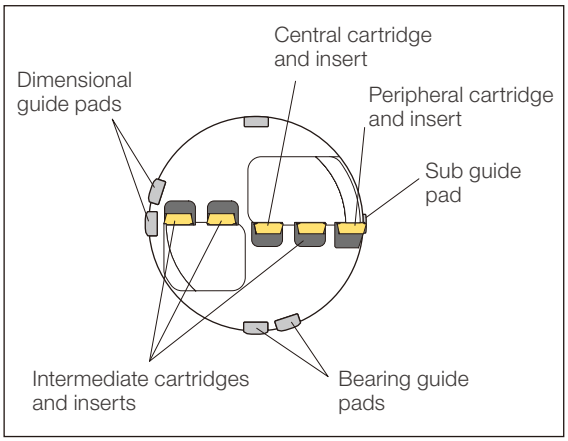
Screw	(lbs·ft)	(N·m)
CSTB-3.5	2.58	3.5
CSTB-3.5D	1.70	2.3
CSTB-4M	2.58	3.5
CSTB-4S	2.58	3.5
CSTB-5	3.69	5
LS1206	2.21	3

Screw	(lbs·ft)	(N·m)
LS1206S	2.21	3
LS1206SSS	2.21	3
LS1803RH	1.62	2.2
LS1803.5RH	1.62	2.2
LS1805RH	2.21	3
LS1806RH	3.69	5

Sub guide pad

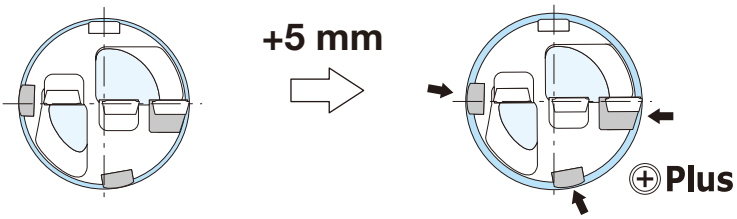


Guide pad	Dimensions (in)			Lock screw	Wrench
	W1	S	INSL		
CUG08	0.315	0.177	0.394	CSTB-3S	T-9D
CUG10	0.394	0.197	0.394	CSTB-3S	T-9D
CUG14-M	0.551	0.276	0.787	CSTA-5S	T-15D



⊕Plus Plus parts

The use of the Plus parts allows the drill diameter to increase by up to 5 mm, in 1 mm increments.
The diameter is increased by replacing the peripheral cartridges.
Ex. The drill head diameter with OZ402-32 peripheral cartridge can be increased by up to 4 mm, while the drill head diameter with OZ402-43 can be increased by up to 5 mm.



Peripheral cartridge: OZ402-43
Guide pads: GP14

Peripheral cartridge: OZ402-43+5
Guide pads: GP14+5 B1042

Note:
When the peripheral cartridge is changed, the guide pads must also be changed to the matching Plus parts.

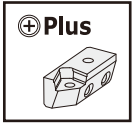
Plus cartridge - OZ type



	+1 mm		+2 mm		+3 mm		+4 mm		+5 mm	
OZ05R	OZ05R+1	O	OZ05R+2	O	-		-		-	
OZ402-04	OZ402-04+1	O	OZ402-04+2	O	OZ402-04+3	O	-		-	
OZ402-32	OZ402-32+1	O	OZ402-32+2	O	OZ402-32+3	O	OZ402-32+4	O	-	
OZ402-43	OZ402-43+1	O	OZ402-43+2	O	OZ402-43+3	O	OZ402-43+4	O	OZ402-43+5	O
OZ402-63	OZ402-63+1	O	OZ402-63+2	O	OZ402-63+3	O	OZ402-63+4	O	OZ402-63+5	O

Ordering example: OZ402-04+2, 1 pcs

Plus cartridge - OX type



	+1 mm		+2 mm		+3 mm		+4 mm		+5 mm	
OX04R	OX04R+1	O	OX04R+2	O	OX04R+3	O	-		-	
OX32R	OX32R+1	O	OX32R+2	O	OX32R+3	O	OX32R+4	O	-	
OX43R	OX43R+1	O	OX43R+2	O	OX43R+3	O	OX43R+4	O	OX43R+5	O
OX63R	OX63R+1	O	OX63R+2	O	OX63R+3	O	OX63R+4	O	OX63R+5	O

Ordering example: OX32R+2, 1 pcs
Use OX cartridges when using the UNIDEX series for boring operations. OX has a smaller entry angel than OZ, allowing better hole quality.
OX and OZ can be mounted in the same pocket for the peripheral cartridge.

Plus guide pad



	+1 mm	Grade B1042	+2 mm	Grade B1042	+3 mm	Grade B1042	+4 mm	Grade B1042	+5 mm	Grade B1042
GP08	GP08+1	O	GP08+2	O	GP08+3	O	-		-	
GP10	GP10+1	O	GP10+2	O	GP10+3	O	GP10+4	O	-	
GP14	GP14+1	O	GP14+2	O	GP14+3	O	GP14+4	O	GP14+5	O
GP18	GP18+1	O	GP18+2	O	GP18+3	O	GP18+4	O	GP18+5	O

Ordering example: GP08+2 B1042, 5 pcs

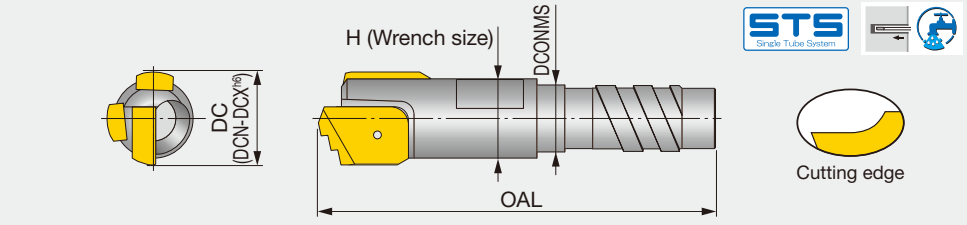
O : To be supplied on request

MBU STS

MBU type drill head

Brazed drill head with external single-start thread for single tube system (STS), tool diameter ø8 - ø14.79 mm (ø0.315" - ø0.582"), CICT = 1





P	Steel	★	
M	Stainless		★
K	Cast iron		★
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		★

★ : First choice
☆ : Second choice

Standard products

Metric	DC (in)	DC (mm)	Coated 1122	Coated 3112	Drill tube Designation	Drill tube Dia. (mm)	OAL	DCONMS	H
MBU-0999-2 9.40	0.370	9.4		●	UMBB083	8.3	34	7.2	7
MBU-1199-1 11.00	0.433	11	●		UMBB100	10	34	8.6	9

●: Line up

Non-standard products (to be supplied on request)

When ordering

MBU-0899-1	xx.xx	1122
Drill head	Diameter (mm)	Grade

e.g. Designation for tool diameter ø9 mm: **MBU-0899-1 9.00 1122**

Metric	DCN (in)	DCN (mm)	DCX (in)	DCX (mm)	Drill tube Designation	Drill tube Dia. (mm)	OAL	DCONMS	H
MBU-0899-1 xx.xx	0.315	8	0.328	8.32	UMBB071	7.1	34	6	6
MBU-0899-2 xx.xx	0.328	8.33	0.341	8.65	UMBB071	7.1	34	6	6
MBU-0899-3 xx.xx	0.341	8.66	0.354	8.99	UMBB071	7.1	34	6	6
MBU-0999-1 xx.xx	0.354	9	0.367	9.32	UMBB083	8.3	34	7.2	7
MBU-0999-2 xx.xx	0.367	9.33	0.380	9.65	UMBB083	8.3	34	7.2	7
MBU-0999-3 xx.xx	0.380	9.66	0.393	9.99	UMBB083	8.3	34	7.2	7
MBU-1099-1 xx.xx	0.394	10	0.406	10.32	UMBB090	9	34	7.6	8
MBU-1099-2 xx.xx	0.407	10.33	0.419	10.65	UMBB090	9	34	7.6	8
MBU-1099-3 xx.xx	0.420	10.66	0.433	10.99	UMBB090	9	34	7.6	8
MBU-1199-1 xx.xx	0.433	11	0.446	11.32	UMBB100	10	34	8.6	9
MBU-1199-2 xx.xx	0.446	11.33	0.459	11.65	UMBB100	10	34	8.6	9
MBU-1199-3 xx.xx	0.459	11.66	0.472	11.99	UMBB100	10	34	8.6	9
MBU-1349-1 xx.xx	0.472	12	0.487	12.36	UMBB110	11	34	9.1	10
MBU-1349-2 xx.xx	0.487	12.37	0.501	12.73	UMBB110	11	34	9.1	10
MBU-1349-3 xx.xx	0.502	12.74	0.516	13.1	UMBB110	11	34	9.1	10
MBU-1349-4 xx.xx	0.516	13.11	0.531	13.49	UMBB110	11	34	9.1	10
MBU-1449-1 xx.xx	0.531	13.5	0.544	13.82	UMBB120	12	34	10.8	11
MBU-1449-2 xx.xx	0.544	13.83	0.557	14.15	UMBB120	12	34	10.8	11
MBU-1449-3 xx.xx	0.557	14.16	0.570	14.48	UMBB120	12	34	10.8	11
MBU-1449-4 xx.xx	0.570	14.49	0.582	14.79	UMBB120	12	34	10.8	11

STANDARD CUTTING CONDITIONS

See more information

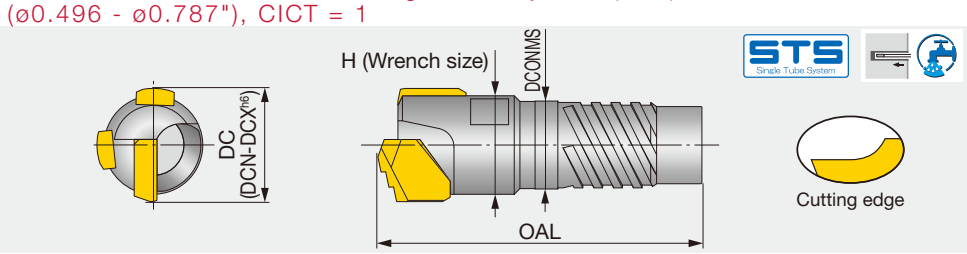
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Reference pages: Drill tube (STS) → J174

UTE STS
MBU type drill head

Brazed drill head with external 2-start or 4-start thread for single tube system (STS), tool diameter ø12.6 - ø20 mm (ø0.496 - ø0.787"), CICT = 1





P	Steel	★
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Standard products

Metric	DC (in)	DC (mm)	Coated 1122	Drill tube Designation	Drill tube Dia. (mm)	OAL	DCONMS	H
UTE-0094-1 12.90	0.496	12.9	●	ST0094	11	40	9.6	10

●: Line up

Non-standard products (to be supplied on request)

When ordering

UTE-0094-1	xx.xx	1122
Drill head	Diameter (mm)	Grade

e.g. Designation for tool diameter ø12.92 mm: **UTE-0094-1 12.92 1122**

Metric	DCN (in)	DCN (mm)	DCX (in)	DCX (mm)	Drill tube Designation	Drill tube Dia. (mm)	OAL	DCONMS	H
UTE-0094-1 xx.xx	0.496	12.6	0.509	12.92	ST0094	11	40	9.6	10
UTE-0094-2 xx.xx	0.509	12.93	0.511	12.99	ST0094	11	40	9.6	10
UTE-0094-3 xx.xx	0.512	13	0.522	13.25	ST0094	11	40	9.6	10
UTE-0094-4 xx.xx	0.522	13.26	0.535	13.6	ST0094	11	40	9.6	10
UTE-0095-1 xx.xx	0.536	13.61	0.548	13.93	ST0095	12	40	10.6	11
UTE-0095-2 xx.xx	0.549	13.94	0.551	13.99	ST0095	12	40	10.6	11
UTE-0095-3 xx.xx	0.551	14	0.561	14.26	ST0095	12	40	10.6	11
UTE-0095-4 xx.xx	0.562	14.27	0.575	14.6	ST0095	12	40	10.6	11
UTE-0096-1 xx.xx	0.575	14.61	0.588	14.93	ST0096	13	40	11.6	12
UTE-0096-2 xx.xx	0.588	14.94	0.601	15.26	ST0096	13	40	11.6	12
UTE-0096-3 xx.xx	0.601	15.27	0.614	15.59	ST0096	13	40	11.6	12
UTE-0097-1 xx.xx	0.614	15.6	0.628	15.96	ST0097	14	40	12.6	13
UTE-0097-2 xx.xx	0.629	15.97	0.643	16.32	ST0097	14	40	12.6	13
UTE-0097-3 xx.xx	0.643	16.33	0.657	16.7	ST0097	14	40	12.6	13
UTE-0098-1 xx.xx	0.658	16.71	0.670	17.03	ST0098	15	40	13.6	14
UTE-0098-2 xx.xx	0.671	17.04	0.683	17.36	ST0098	15	40	13.6	14
UTE-0098-3 xx.xx	0.684	17.37	0.697	17.7	ST0098	15	40	13.6	14
UTE-0099-1 xx.xx	0.697	17.71	0.712	18.09	ST0099	16	40	14.5	15
UTE-0099-2 xx.xx	0.713	18.1	0.728	18.48	ST0099	16	40	14.5	15
UTE-0099-3 xx.xx	0.728	18.49	0.744	18.9	ST0099	16	40	14.5	15
UTE-0000-1 xx.xx	0.744	18.91	0.758	19.26	ST0000	17	40	15.5	16
UTE-0000-2 xx.xx	0.759	19.27	0.772	19.62	ST0099	17	40	15.5	16
UTE-0000-3 xx.xx	0.773	19.63	0.787	20	ST0099	17	40	15.5	16

UTE Drill head : ø12.6 mm - ø15.59 mm, External 2-start thread
UTE Drill head : ø15.6 mm - ø20 mm, External 4-start thread

STANDARD CUTTING CONDITIONS

See more information

e-catalog

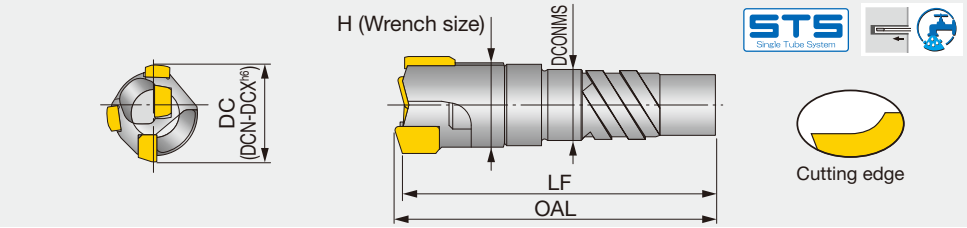
Reference pages: Drill tube (STS) → J174

BTU STS

BTU type drill head (Small diameter, 2 edges)

Brazed drill head with external 2-start thread for single tube system (STS), tool diameter ø12.6 - ø15.59 mm, CICT = 2





Non-standard products (to be supplied on request)

When ordering

BTU-00941	xx.xx	1122
Drill head	Diameter (mm)	Grade

e.g. Designation for tool diameter ø13.1 mm: **BTU-00941 13.10 1122**

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00941 xx.xx	0.496	12.6	0.516	13.1	ST0094	11	43	41.9	9.6	10
BTU-00942 xx.xx	0.516	13.11	0.535	13.6	ST0094	11	43	41.9	9.6	10
BTU-00951 xx.xx	0.536	13.61	0.555	14.1	ST0095	12	43	41.8	10.6	11
BTU-00952 xx.xx	0.556	14.11	0.575	14.6	ST0095	12	43	41.8	10.6	11
BTU-00961 xx.xx	0.575	14.61	0.594	15.1	ST0096	13	43	41.7	11.6	12
BTU-00962 xx.xx	0.595	15.11	0.614	15.59	ST0096	13	43	41.7	11.6	12

STANDARD CUTTING CONDITIONS

See more information

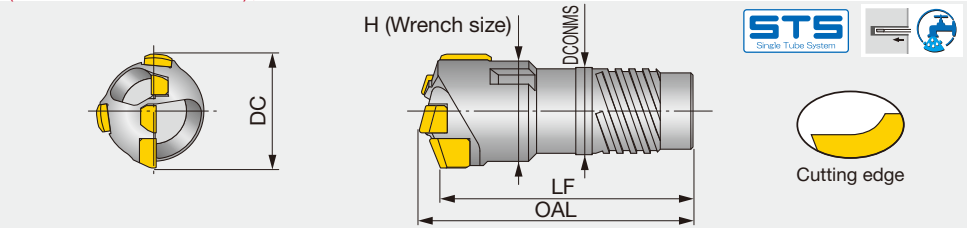
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Reference pages: Drill tube (STS) → J174

BTU type drill head (2 edges)

Brazed drill head with external 4-start thread for single tube system (STS),
tool diameter ø15.6 - ø65 mm (ø0.634" - ø1.039"), CICT = 3





P	Steel	★			
M	Stainless	★	★		
K	Cast iron			★	
N	Non-ferrous				
S	Superalloys				
H	Hard materials			★	

★ : First choice
☆ : Second choice

Standard products

Metric	DC (in)	DC (mm)	Coated 1132	Coated 2122	Coated 3132	Drill tube Designation	Drill tube Dia. (mm)	OAL	LF	DCONMS	H
BTU-00971 16.11	0.634	16.11	●			ST0097	14	43	40.3	12.6	-
BTU-00971 16.13	0.635	16.13	●			ST0097	14	43	40.3	12.6	-
BTU-002 19.26	0.758	19.26		●		ST0000	17	47	44	15.5	18
BTU-002 19.27	0.759	19.27	●			ST0000	17	47	44	15.5	18
BTU-002 19.28	0.759	19.28	●			ST0000	17	47	44	15.5	18
BTU-002 19.3	0.760	19.3	●			ST0000	17	47	44	15.5	18
BTU-011 20.21	0.796	20.21	●			ST00	18	52.5	49.4	16	18
BTU-011 20.28	0.798	20.28	●			ST00	18	52.5	49.4	16	18
BTU-021 22.1	0.870	22.1			●	ST01	20	56	52.8	18	20
BTU-022 23.6	0.929	23.6			●	ST01	20	56	52.6	18	21
BTU-032 25.26	0.994	25.26	●			ST02	22	57.5	54	19.5	24
BTU-032 25.28	0.995	25.28	●			ST02	22	57.5	54	19.5	24
BTU-032 25.66	1.010	25.66	●			ST02	22	57.5	54	19.5	24
BTU-032 25.67	1.011	25.67	●			ST02	22	57.5	54	19.5	24
BTU-032 25.68	1.011	25.68	●			ST02	22	57.5	54	19.5	24
BTU-032 26.4	1.039	26.4		●		ST02	22	57.5	54	19.5	24

●: Line up

STANDARD CUTTING CONDITIONS

See more information

e-catalog

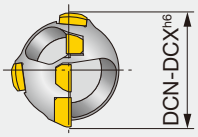
Reference pages: Drill tube (STS) → J174

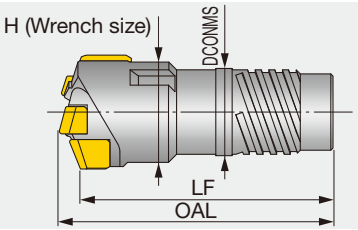
BTU STS

BTU type drill head (3 edges)

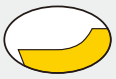
Brazed drill head with external 4-start thread for single tube system (STS), tool diameter ø15.6 - ø65 mm (ø0.614" - ø2.559"), CICT = 3







STS Single Tube System



Non-standard products (to be supplied on request)

When ordering

BTU-00971	xx.xx	1122
Drill head	Diameter (mm)	Grade

e.g. Designation for tool diameter ø16.2 mm: **BTU-00971 16.20 1122**

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00971 xx.xx	0.614	15.6	0.638	16.2	ST0097	14	43	40.3	12.6	-
BTU-00972 xx.xx	0.638	16.21	0.657	16.7	ST0097	14	43	40.3	12.6	14
BTU-00981 xx.xx	0.658	16.71	0.677	17.2	ST0098	15	43	40.3	13.6	15
BTU-00982 xx.xx	0.678	17.21	0.697	17.7	ST0098	15	43	40.3	13.6	15
BTU-00991 xx.xx	0.697	17.71	0.724	18.4	ST0099	16	47	44.2	14.5	15
BTU-00992 xx.xx	0.725	18.41	0.744	18.9	ST0099	16	47	44.1	14.5	-
BTU-001 xx.xx	0.744	18.91	0.756	19.2	ST0000	17	47	44.1	15.5	17
BTU-002 xx.xx	0.756	19.21	0.787	20	ST0000	17	47	44	15.5	18
BTU-011 xx.xx	0.788	20.01	0.823	20.9	ST00	18	52.5	49.4	16	18
BTU-012 xx.xx	0.823	20.91	0.858	21.8	ST00	18	52.5	49.4	16	19
BTU-021 xx.xx	0.859	21.81	0.902	22.9	ST01	20	56	52.8	18	20
BTU-022 xx.xx	0.902	22.91	0.949	24.1	ST01	20	56	52.6	18	21
BTU-031 xx.xx	0.949	24.11	0.992	25.2	ST02	22	57.5	54	19.5	23
BTU-032 xx.xx	0.993	25.21	1.039	26.4	ST02	22	57.5	54	19.5	24
BTU-041 xx.xx	1.040	26.41	1.083	27.5	ST03	24	57.5	53.8	21	25
BTU-042 xx.xx	1.083	27.51	1.130	28.7	ST03	24	57.5	53.8	21	26
BTU-051 xx.xx	1.130	28.71	1.173	29.8	ST04	26	63.5	59.5	23.5	27
BTU-052 xx.xx	1.174	29.81	1.220	31	ST04	26	63.5	59.3	23.5	28
BTU-061 xx.xx	1.221	31.01	1.264	32.1	ST05	28	63.5	59.4	25.5	29
BTU-062 xx.xx	1.264	32.11	1.311	33.3	ST05	28	63.5	59.1	25.5	30
BTU-071 xx.xx	1.311	33.31	1.370	34.8	ST06	30	63.5	59	28	32
BTU-072 xx.xx	1.370	34.81	1.425	36.2	ST06	30	63.5	58.9	28	33
BTU-081 xx.xx	1.426	36.21	1.469	37.3	ST07	33	73.5	68.7	30	34
BTU-082 xx.xx	1.469	37.31	1.512	38.4	ST07	33	73.5	68.5	30	35
BTU-083 xx.xx	1.512	38.41	1.559	39.6	ST07	33	73.5	68.3	30	36
BTU-091 xx.xx	1.559	39.61	1.598	40.6	ST08	36	73.5	68.2	33	37
BTU-092 xx.xx	1.599	40.61	1.646	41.8	ST08	36	73.5	68	33	38
BTU-093 xx.xx	1.646	41.81	1.693	43	ST08	36	73.5	67.8	33	39
BTU-101 xx.xx	1.693	43.01	1.744	44.3	ST09	39	75	69.5	36	41
BTU-102 xx.xx	1.744	44.31	1.795	45.6	ST09	39	75	69.3	36	42
BTU-103 xx.xx	1.796	45.61	1.850	47	ST09	39	75	69.1	36	43
BTU-111 xx.xx	1.851	47.01	1.909	48.5	ST10	43	75	68.8	39	44
BTU-112 xx.xx	1.910	48.51	1.972	50.1	ST10	43	75	68.7	39	46
BTU-113 xx.xx	1.973	50.11	2.035	51.7	ST10	43	75	68.5	39	47
BTU-121 xx.xx	2.036	51.71	2.094	53.2	ST11	47	82	75.2	43	49
BTU-122 xx.xx	2.095	53.21	2.154	54.7	ST11	47	82	75.2	43	50
BTU-123 xx.xx	2.154	54.71	2.213	56.2	ST11	47	82	75.2	43	51
BTU-131 xx.xx	2.213	56.21	2.299	58.4	ST12	51	84	77.4	47	54
BTU-132 xx.xx	2.300	58.41	2.386	60.6	ST12	51	84	76.9	47	55
BTU-133 xx.xx	2.386	60.61	2.472	62.8	ST12	51	84	76.8	47	57
BTU-134 xx.xx	2.473	62.81	2.559	65	ST12	51	84	76.5	47	59
BTU-133L xx.xx	2.386	60.61	2.472	62.8	ST13	56	84	76.8	51	57
BTU-134L xx.xx	2.473	62.81	2.559	65	ST13	56	84	76.5	51	59

STANDARD CUTTING CONDITIONS

See more information

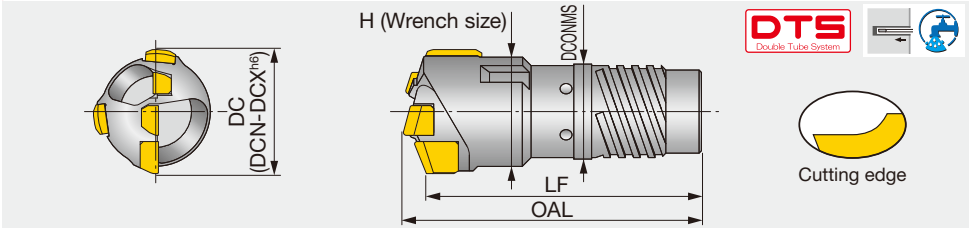
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Reference pages: Drill tube (STS) → J174

ETU DTS
ETU type drill head

Brazed drill head with external 4-start thread for double tube system (DTS), tool diameter ø18.4 - ø65 mm, CICT = 3





Non-standard products (to be supplied on request)

When ordering

ETU-001	xx.xx	1122
Drill head	Diameter (mm)	Grade

e.g. Designation for tool diameter ø19.2 mm: **ETU-001 19.20 1122**

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
ETU-001 xx.xx	0.724	18.4	0.756	19.2	OT00	18	50	47.1	16	17
ETU-002 xx.xx	0.756	19.21	0.787	20	OT00	18	50	47	16	18
ETU-011 xx.xx	0.788	20.01	0.823	20.9	OT01	20	56	52.8	18	18
ETU-012 xx.xx	0.823	20.91	0.858	21.8	OT01	20	56	52.7	18	19
ETU-021 xx.xx	0.859	21.81	0.902	22.9	OT02	22	56	52.8	19.5	20
ETU-022 xx.xx	0.902	22.91	0.949	24.1	OT02	22	56	52.6	19.5	21
ETU-031 xx.xx	0.949	24.11	0.992	25.2	OT03	24	57.5	54	21	23
ETU-032 xx.xx	0.993	25.21	1.039	26.4	OT03	24	57.5	54	21	24
ETU-041 xx.xx	1.040	26.41	1.083	27.5	OT04	26	60.5	56.8	23.5	25
ETU-042 xx.xx	1.083	27.51	1.130	28.7	OT04	26	60.5	56.8	23.5	26
ETU-051 xx.xx	1.130	28.71	1.173	29.8	OT05	28	63.5	59.5	25.5	27
ETU-052 xx.xx	1.174	29.81	1.220	31	OT05	28	63.5	59.3	25.5	28
ETU-061 xx.xx	1.221	31.01	1.264	32.1	OT06	31	63.5	59.4	28	29
ETU-062 xx.xx	1.264	32.11	1.311	33.3	OT06	31	63.5	59.2	28	30
ETU-071 xx.xx	1.311	33.31	1.370	34.8	OT07	33	70.5	66	30	32
ETU-072 xx.xx	1.370	34.81	1.425	36.2	OT07	33	70.5	65.8	30	33
ETU-081 xx.xx	1.426	36.21	1.469	37.3	OT08	36	73.5	68.7	33	34
ETU-082 xx.xx	1.469	37.31	1.512	38.4	OT08	36	73.5	68.5	33	35
ETU-083 xx.xx	1.512	38.41	1.559	39.6	OT08	36	73.5	68.3	33	36
ETU-091 xx.xx	1.559	39.61	1.598	40.6	OT09	39	73.5	68.2	36	37
ETU-092 xx.xx	1.599	40.61	1.646	41.8	OT09	39	73.5	68	36	38
ETU-093 xx.xx	1.646	41.81	1.693	43	OT09	39	73.5	67.9	36	39
ETU-101 xx.xx	1.693	43.01	1.744	44.3	OT10	43	75	69.5	39	41
ETU-102 xx.xx	1.744	44.31	1.795	45.6	OT10	43	75	69.3	39	42
ETU-103 xx.xx	1.796	45.61	1.850	47	OT10	43	75	69.1	39	43
ETU-111 xx.xx	1.851	47.01	1.909	48.5	OT11	47	79	72.9	43	44
ETU-112 xx.xx	1.910	48.51	1.972	50.1	OT11	47	79	72.8	43	46
ETU-113 xx.xx	1.973	50.11	2.035	51.7	OT11	47	79	72.5	43	47
ETU-121 xx.xx	2.036	51.71	2.094	53.2	OT12	51	82	75.3	47	49
ETU-122 xx.xx	2.095	53.21	2.154	54.7	OT12	51	82	75.5	47	50
ETU-123 xx.xx	2.154	54.71	2.213	56.2	OT12	51	82	75.3	47	51
ETU-131 xx.xx	2.213	56.21	2.299	58.4	OT13	56	84	77.4	51	54
ETU-132 xx.xx	2.300	58.41	2.386	60.6	OT13	56	84	76.9	51	55
ETU-133 xx.xx	2.386	60.61	2.472	62.8	OT13	56	84	77	51	57
ETU-134 xx.xx	2.473	62.81	2.559	65	OT13	56	84	76.6	51	59

STANDARD CUTTING CONDITIONS

See more information

e-catalog

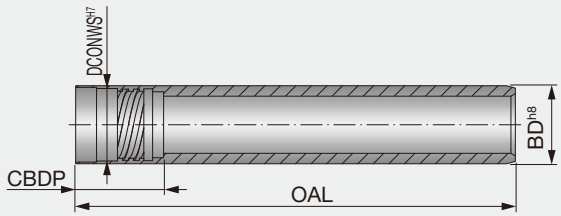
Reference pages: Drill tube (DTS) → J178

ST STS

ST - for single tube system

Drill tube for single tube system (STS), internal thread type, 2-start thread (tool dia. ≤ ø15.59 mm) or 4-start thread (tool dia. ≥ ø15.6 mm)





Metric	DCN-DCX (in)	DCN-DCX (mm)	OAL 1600	OAL 2600	OAL Special length	BD	DCONWS	CBDP
ST0094	0.496 - 0.535	12.6 - 13.6	●		○	11	9.6	22
ST0095	0.536 - 0.575	13.61 - 14.6	●		○	12	10.6	22
ST0096	0.575 - 0.614	14.61 - 15.59	●		○	13	11.6	22
ST0097	0.614 - 0.657	15.6 - 16.7	●		○	14	12.6	21
ST0098	0.658 - 0.697	16.71 - 17.7	●	●	○	15	13.6	21
ST0099	0.697 - 0.744	17.71 - 18.9	●	●	○	16	14.5	22
ST0000	0.744 - 0.787	18.91 - 20	●	●	○	17	15.5	22
ST00	0.788 - 0.858	20.01 - 21.8	●	●	○	18	16	27.5
ST01	0.859 - 0.949	21.81 - 24.1		●	○	20	18	30
ST02	0.949 - 1.039	24.11 - 26.4		●	○	22	19.5	30
ST03	1.040 - 1.130	26.41 - 28.7		●	○	24	21	30
ST04	1.130 - 1.220	28.71 - 31		●	○	26	23.5	33
ST05	1.221 - 1.311	31.01 - 33.3		●	○	28	25.5	33
ST06	1.311 - 1.425	33.31 - 36.2		●	○	30	28	33
ST07	1.426 - 1.559	36.21 - 39.6		●	○	33	30	40
ST08	1.559 - 1.693	39.61 - 43		●	○	36	33	40
ST09	1.693 - 1.850	43.01 - 47		●	○	39	36	40
ST10	1.851 - 2.035	47.01 - 51.7		●	○	43	39	40
ST11	2.036 - 2.213	51.71 - 56.2		●	○	47	43	44
ST12	2.213 - 2.386	56.21 - 60.6		●	○	51	47	44
ST13	2.386 - 2.559	60.61 - 65			○	56	51	44

Metric	DCN-DCX (in)	DCN-DCX (mm)	OAL Special length	BD	DCONWS	CBDP
ST14	2.559 - 2.637	65 - 66.99	○	56	52	75
ST15	2.638 - 2.874	67 - 72.99	○	62	58	75
ST16	2.874 - 3.149	73 - 79.99	○	68	63	75
ST17	3.15 - 3.425	80 - 86.99	○	75	70	97
ST18	3.425 - 3.937	87 - 99.99	○	82	77	97
ST19	3.937 - 4.409	100 - 111.99	○	94	89	97
ST20	4.409 - 4.881	112 - 123.99	○	106	101	118
ST21	4.882 - 5.354	124 - 135.99	○	118	113	118
ST22	5.354 - 5.826	136 - 147.99	○	130	125	118
ST23	5.827 - 6.299	148 - 159.99	○	142	137	139
ST24	6.299 - 6.771	160 - 171.99	○	154	149	139
ST25	6.772 - 7.244	172 - 183.99	○	166	161	139
ST26	7.244 - 7.716	184 - 195.99	○	178	173	144
ST27	7.717 - 8.189	196 - 207.99	○	190	185	144
ST28	8.189 - 8.661	208 - 219.99	○	202	197	144
ST29	8.661 - 9.133	220 - 231.99	○	214	208	164
ST30	9.134 - 9.606	232 - 243.99	○	226	220	164
ST31	9.606 - 10.078	244 - 255.99	○	238	232	164
ST32	10.079 - 10.551	256 - 267.99	○	250	244	184
ST33	10.551 - 11.023	268 - 279.99	○	262	256	184
ST34	11.024 - 11.496	280 - 291.99	○	274	268	184

Please specify the length (OAL) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: ST12X2600
The lengths that are not in the above will be available upon request.

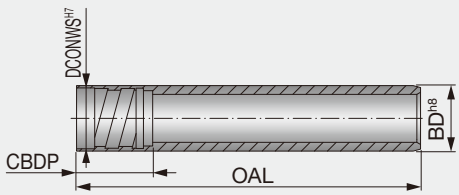
● : Line up
○ : Item to be customized

UMBB STS

UMBB - for single tube system with MBU

Drill tube with internal single-start thread for MBU drill head





Metric	DCN-DCX (in)	DCN-DCX (mm)	OAL Special length	BD	DCONWS	CBDP
UMBB071	0.315 - 0.354	8 - 8.99	○	7.1	6	13.5
UMBB083	0.354 - 0.393	9 - 9.99	○	8.3	7.2	13.5
UMBB090	0.394 - 0.433	10 - 10.99	○	9	7.6	13.5
UMBB100	0.433 - 0.472	11 - 11.99	○	10	8.6	13.5
UMBB110	0.472 - 0.531	12 - 13.49	○	11	9.1	13.5
UMBB120	0.531 - 0.582	13.5 - 14.79	○	12	10.8	13.5

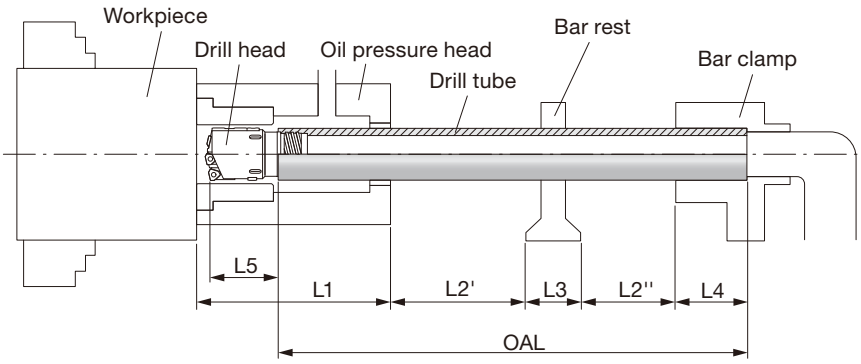
Please specify the length (OAL) when ordering.
e.g. For ø11 mm drill diameter / 1000 mm drill tube length: UMBB100X1000

○ : Item to be customized

Reference pages: ST: Drill head → J134 (TRI-FINE STS-EX), J139 (FINE-BEAM STS-EX), J147 - (UNIDEX STS-EX), J169 (UTE), J170 - (BTU)
UMBB: Drill head → J168 (MBU)

Tube length for special drills

Drill tubes with non-standard lengths will be available upon request.
Please use the guide below to calculate the drill tube length.



OAL = Drill tube overall length
L1 = Oil pressure head length
L2 = Drilling depth (L2' + L2")
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL ≒ L1 + L2 + L3 + L4 - L5

TRI-FINE



DCN-DCX (in)	DCN-DCX (mm)	L5
0.630 - 0.657	16 - 16.7	34
0.658 - 0.697	16.71 - 17.7	34
0.697 - 0.744	17.71 - 18.9	34
0.744 - 0.787	18.91 - 20	34
0.788 - 0.858	20.01 - 21.8	32.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 1.039	24.11 - 26.4	35.5
1.040 - 1.102	26.41 - 28	35.5

FINE-BEAM



DCN-DCX (in)	DCN-DCX (mm)	L5
0.984 - 1.13	25 - 28.7	40
1.13 - 1.311	28.71 - 33.3	42
1.311 - 1.425	33.31 - 36.2	47
1.426 - 1.559	36.21 - 39.6	50
1.559 - 1.693	39.61 - 43	55
1.693 - 2.035	43.01 - 51.7	60
2.036 - 2.213	51.71 - 56.2	66
2.213 - 2.559	56.21 - 65	71

UNIDEX



DCN-DCX (in)	DCN-DCX (mm)	L5
1.496 - 1.693	38 - 43	45
1.693 - 2.035	43.01 - 51.7	55
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.15 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86
7.244 - 10.078	184 - 255.99	101
10.079 - 11.496	256 - 291.99	106

MBU



DCN-DCX (in)	DCN-DCX (mm)	L5
0.315 - 0.328	8 - 8.32	18
0.328 - 0.341	8.33 - 8.65	18
0.341 - 0.354	8.66 - 8.99	18
0.354 - 0.367	9 - 9.32	18
0.367 - 0.380	9.33 - 9.65	18
0.380 - 0.393	9.66 - 9.99	18
0.394 - 0.406	10 - 10.32	18
0.407 - 0.419	10.33 - 10.65	18
0.420 - 0.433	10.66 - 10.99	18
0.433 - 0.446	11 - 11.32	18
0.446 - 0.459	11.33 - 11.65	18
0.459 - 0.472	11.66 - 11.99	18
0.472 - 0.487	12 - 12.36	18
0.487 - 0.501	12.37 - 12.73	18
0.502 - 0.516	12.74 - 13.1	18
0.516 - 0.531	13.11 - 13.49	18
0.531 - 0.544	13.5 - 13.82	18
0.544 - 0.557	13.83 - 14.15	18
0.557 - 0.570	14.16 - 14.48	18
0.570 - 0.582	14.49 - 14.79	18

UTE



DCN-DCX (in)	DCN-DCX (mm)	L5
0.496 - 0.509	12.6 - 12.92	19
0.509 - 0.511	12.93 - 12.99	19
0.512 - 0.522	13 - 13.25	19
0.522 - 0.535	13.26 - 13.6	19
0.536 - 0.548	13.61 - 13.93	19
0.549 - 0.551	13.94 - 13.99	19
0.551 - 0.561	14 - 14.26	19
0.562 - 0.575	14.27 - 14.6	19
0.575 - 0.588	14.61 - 14.93	19
0.588 - 0.601	14.94 - 15.26	19
0.601 - 0.614	15.27 - 15.59	19
0.614 - 0.628	15.6 - 15.96	20
0.629 - 0.643	15.97 - 16.32	20
0.643 - 0.657	16.33 - 16.7	20
0.658 - 0.67	16.71 - 17.03	20
0.671 - 0.683	17.04 - 17.36	20
0.684 - 0.697	17.37 - 17.7	20
0.697 - 0.712	17.71 - 18.09	19
0.713 - 0.728	18.1 - 18.48	19
0.728 - 0.744	18.49 - 18.9	19
0.744 - 0.758	18.91 - 19.26	19
0.759 - 0.772	19.27 - 19.62	19
0.773 - 0.787	19.63 - 20	19

BTU



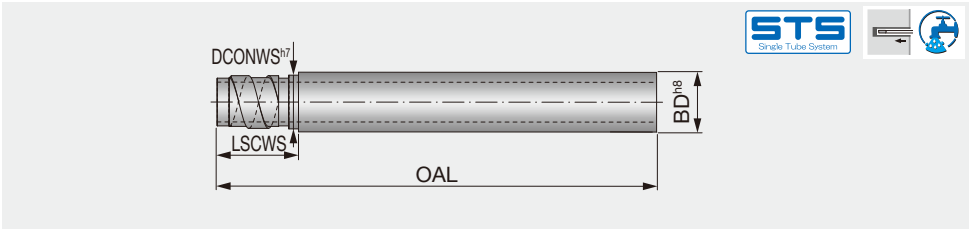
DCN-DCX (in)	DCN-DCX (mm)	L5
0.496 - 0.697	12.6 - 17.7	20
0.697 - 0.756	17.71 - 19.2	23
0.756 - 0.858	19.21 - 21.8	22
0.859 - 0.949	21.81 - 24.1	23
0.949 - 1.13	24.11 - 28.7	24
1.13 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.85	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.3 - 2.559	58.41 - 65	33

UB STS

UB - for single tube system

Drill tube for single tube system (STS), external thread type, single-start thread





Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	LSCWS
UB12-1	0.571 - 0.591	14.5 - 15	○	12	11.5	23
UB12-2	0.591 - 0.61	15.01 - 15.5	○	12	11.8	23
UB13-1	0.611 - 0.63	15.51 - 16	○	13	12.4	23
UB13-2	0.630 - 0.650	16.01 - 16.5	○	13	12.7	23
UB14-1	0.650 - 0.679	16.51 - 17.25	○	14	13.4	23
UB14-2	0.680 - 0.709	17.26 - 18	○	14	13.7	23
UB15	0.709 - 0.748	18.01 - 19	○	15	14.4	23
UB16.5	0.748 - 0.787	19.01 - 19.99	○	16.5	15.4	23
UB18	0.787 - 0.866	20 - 21.99	○	18	16.5	26
UB20	0.866 - 0.984	22 - 24.99	○	20	19	26
UB22	0.984 - 1.063	25 - 26.99	○	22	20	26
UB24	1.063 - 1.181	27 - 29.99	○	24	22	26
UB26	1.181 - 1.259	30 - 31.99	○	26	24	26
UB28	1.260 - 1.338	32 - 33.99	○	28	26	26
UB30	1.339 - 1.456	34 - 36.99	○	30	27	41
UB33	1.457 - 1.574	37 - 39.99	○	33	30	41
UB36	1.575 - 1.732	40 - 43.99	○	36	33	41
UB39	1.732 - 1.850	44 - 46.99	○	39	37	41
UB43	1.850 - 2.047	47 - 51.99	○	43	41	41
UB47	2.047 - 2.244	52 - 56.99	○	47	44	41
UB51	2.244 - 2.401	57 - 60.99	○	51	49	41

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	LSCWS
UB56	2.402 - 2.677	61 - 67.99	○	56	53	41
UB62	2.677 - 2.952	68 - 74.99	○	62	59	41
UB68	2.953 - 3.189	75 - 80.99	○	68	65	71
UB75	3.189 - 3.582	81 - 90.99	○	75	71	71
UB82	3.583 - 3.897	91 - 98.99	○	82	79	71
UB94	3.898 - 4.370	99 - 110.99	○	94	90	71
UB106	4.370 - 4.842	111 - 122.99	○	106	102	71
UB118	4.843 - 5.315	123 - 134.99	○	118	114	71
UB130	5.315 - 5.866	135 - 148.99	○	130	126	71
UB142	5.866 - 6.378	149 - 161.99	○	142	139	71
UB154	6.378 - 6.850	162 - 173.99	○	154	151	86
UB166	6.850 - 7.322	174 - 185.99	○	166	163	86
UB178	7.323 - 7.795	186 - 197.99	○	178	175	86
UB190	7.795 - 8.267	198 - 209.99	○	190	187	86
UB202	8.268 - 8.740	210 - 221.99	○	202	199	86
UB214	8.740 - 9.212	222 - 233.99	○	214	211	86
UB226	9.213 - 9.685	234 - 245.99	○	226	223	86
UB238	9.685 - 10.157	246 - 257.99	○	238	235	86
UB250	10.157 - 10.63	258 - 269.99	○	250	247	121
UB262	10.63 - 11.102	270 - 281.99	○	262	259	121
UB274	11.102 - 11.574	282 - 293.99	○	274	271	121

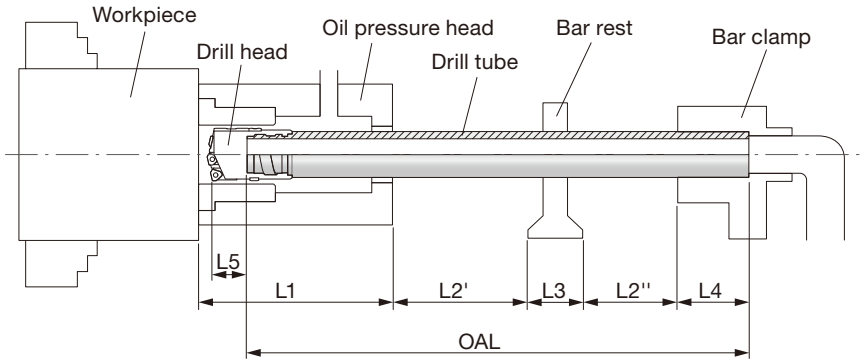
Please specify the length (OAL) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: UB51X2600

○ : Item to be customized

Reference pages: Drill head → J135 (TRI-FINE STS-IN), J140 (FINE-BEAM STS-IN), J148 - (UNIDEX STS-IN)

Tube length for special drills

Please use the guide below to calculate the drill tube length.



OAL = Drill tube overall length
L1 = Oil pressure head length
L2 = Drilling depth (L2' + L2")
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL ≒ L1 + L2 + L3 + L4 - L5

TRI-FINE



DCN - DCX (in)	DCN - DCX (mm)	L5
0.63 - 0.65	16 - 16.5	31.5
0.65 - 0.679	16.51 - 17.25	31.5
0.68 - 0.709	17.26 - 18	31.5
0.709 - 0.748	18.01 - 19	31.5
0.748 - 0.787	19.01 - 19.99	31.5
0.787 - 0.866	20 - 21.99	33
0.866 - 0.984	22 - 24.99	35
0.984	25	35
0.985 - 1.063	25.01 - 26.99	40
1.063 - 1.102	27 - 28	40

FINE-BEAM



DCN - DCX (in)	DCN - DCX (mm)	L5
0.984 - 1.181	25 - 29.99	45
1.181 - 1.338	30 - 33.99	50
1.339 - 1.456	34 - 36.99	50
1.457 - 1.574	37 - 39.99	55
1.575 - 1.732	40 - 43.99	60
1.732 - 2.047	44 - 51.99	65
2.047 - 2.244	52 - 56.99	70
2.244 - 2.559	57 - 65	75

UNIDEX



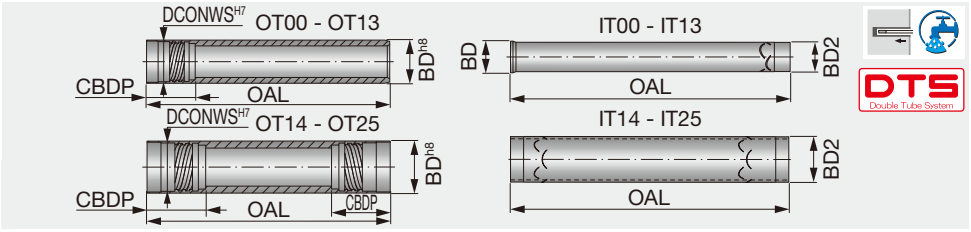
DCN - DCX (in)	DCN - DCX (mm)	L5
1.496 - 1.732	38 - 43.99	40
1.732 - 2.047	44 - 51.99	50
2.047 - 2.244	52 - 56.99	60
2.244 - 2.677	57 - 67.99	70
2.677 - 6.378	68 - 161.99	80
6.378 - 10.157	162 - 257.99	105
10.157 - 11.574	258 - 293.99	90

OT & IT DTS

OT & IT - for double tube system

Outer tube and inner tube for double tube system (DTS)





Outer tube (OT)

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	CBDP
OT00	0.724 - 0.787	18.4 - 20	○	18	16	27.5
OT01	0.788 - 0.858	20.01 - 21.8	○	19.5	18	30
OT02	0.859 - 0.949	21.81 - 24.1	○	21.5	19.5	30
OT03	0.949 - 1.039	24.11 - 26.4	○	23.5	21	30
OT04	1.040 - 1.130	26.41 - 28.7	○	26	23.5	33
OT05	1.130 - 1.220	28.71 - 31	○	28	25.5	33
OT06	1.221 - 1.311	31.01 - 33.3	○	30.5	28	33
OT07	1.311 - 1.425	33.31 - 36.2	○	33	30	40
OT08	1.426 - 1.559	36.21 - 39.6	○	35.5	33	40
OT09	1.559 - 1.693	39.61 - 43	○	39	36	40
OT10	1.693 - 1.850	43.01 - 47	○	42.5	39	40
OT11	1.851 - 2.035	47.01 - 51.7	○	46.5	43	44
OT12	2.036 - 2.213	51.71 - 56.2	○	51	47	44
OT13	2.213 - 2.559	56.21 - 65	○	55.5	51	44
OT14	2.559 - 2.637	65 - 66.99	○	56	52	75
OT15	2.756 - 2.874	70 - 72.99	○	62	58	75
OT16	2.874 - 3.149	73 - 79.99	○	68	63	75
OT17	3.150 - 3.425	80 - 86.99	○	75	70	97
OT18	3.425 - 3.937	87 - 99.99	○	82	77	97
OT19	3.937 - 4.409	100 - 111.99	○	94	89	97
OT20	4.409 - 4.881	112 - 123.99	○	106	101	118
OT21	4.882 - 5.354	124 - 135.99	○	118	113	118
OT22	5.354 - 5.826	136 - 147.99	○	130	125	118
OT23	5.827 - 6.299	148 - 159.99	○	142	137	139
OT24	6.299 - 6.771	160 - 171.99	○	154	149	139
OT25	6.772 - 7.244	172 - 183.99	○	166	161	139

Inner tube (IT)

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	BD2
IT00	0.724 - 0.787	18.4 - 20	○	12	10
IT01	0.788 - 0.858	20.01 - 21.8	○	14	12
IT02	0.859 - 0.949	21.81 - 24.1	○	15	13
IT03	0.949 - 1.039	24.11 - 26.4	○	16	14
IT04	1.040 - 1.130	26.41 - 28.7	○	18	16
IT05	1.130 - 1.220	28.71 - 31	○	20	18
IT06	1.221 - 1.311	31.01 - 33.3	○	22	20
IT07	1.311 - 1.425	33.31 - 36.2	○	24	22
IT08	1.426 - 1.559	36.21 - 39.6	○	26	24
IT09	1.559 - 1.693	39.61 - 43	○	29	27
IT10	1.693 - 1.850	43.01 - 47	○	32	30
IT11	1.851 - 2.035	47.01 - 51.7	○	35	32
IT12	2.036 - 2.213	51.71 - 56.2	○	39	36
IT13	2.213 - 2.559	56.21 - 65	○	43	40
IT14	2.559 - 2.637	65 - 66.99	○	-	40
IT15	2.756 - 2.874	70 - 72.99	○	-	44
IT16	2.874 - 3.149	73 - 79.99	○	-	48
IT17	3.15 - 3.425	80 - 86.99	○	-	54
IT18	3.425 - 3.937	87 - 99.99	○	-	60
IT19	3.937 - 4.409	100 - 111.99	○	-	70
IT20	4.409 - 4.881	112 - 123.99	○	-	80
IT21	4.882 - 5.354	124 - 135.99	○	-	80
IT22	5.354 - 5.826	136 - 147.99	○	-	95
IT23	5.827 - 6.299	148 - 159.99	○	-	100
IT24	6.299 - 6.771	160 - 171.99	○	-	120
IT25	6.772 - 7.244	172 - 183.99	○	-	130

Please specify the length (OAL) when ordering.
e.g. For ø60 mm drill diameter / 1070 mm drill outer tube length: OT13X1070
Please choose the inner tube length according to the guide below:

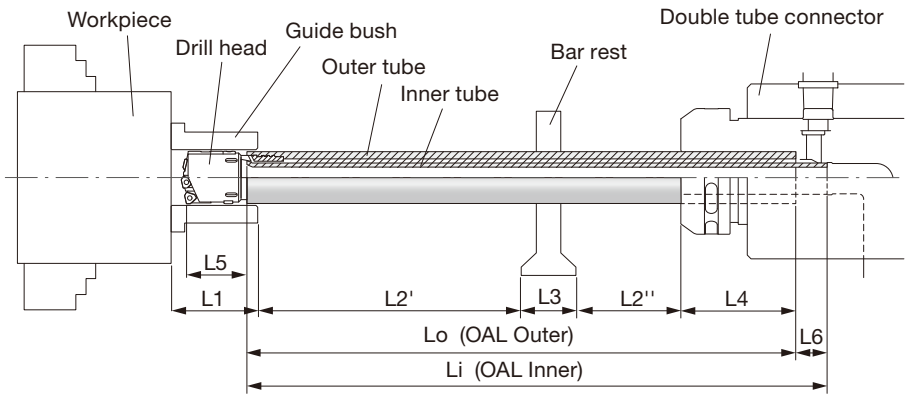
- tool diameter: ø18.40 - ø65.00 mm (OT00 - OT13) ..... Inner tube length = Outer tube length + 30 mm
- tool diameter: ø65.00 - ø123.99 mm (OT14 - OT20) ..... Inner tube length = Outer tube length + 190 mm
- tool diameter: ø124.00 - ø183.99 mm (OT21 - OT25) ..... Inner tube length = Outer tube length + 220 mm

○ : Item to be customized

Reference pages: Drill head → J136 (TRI-FINE DTS), J141 (FINE-BEAM DTS), J159 - (UNIDEX DTS), J173 (ETU)

Tube length for special drills

Please use the guide below to calculate the drill tube length.



Lo = Outer tube overall length
Li = Inner tube overall length
L1 = Guide bush length (or pilot hole depth)
L2 = Drilling depth (L2' + L2")
L3 = Bar rest length
L4 = Length of outer tube in connector*
L5 = Length from drill tube tip and peripheral edge tip
L6 = Difference between outer tube length and inner tube length**

Outer tube overall length Lo ≒ L1 + L2 + L3 + L4 - L5

Inner tube overall length Li = Lo + L6

DTC	L4*	L6**
DTC 4R (OT00 - OT13)	120	30
DTC 5R (OT14 - OT20)	0	190
DTC 6R (OT212 - OT25)	0	220
		(mm)

For smooth drill entry, make sure that the drill head is inside the guide bushing (or pilot hole) all the way up to 5 mm over the outer tube.

TRI-FINE



DCN - DCX (in)	DCN - DCX (mm)	L5
0.724 - 0.787	18.4 - 20	31.5
0.788 - 0.858	20.01 - 21.8	33.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 0.984	24.11 - 25	35.5
0.985 - 1.039	25.01 - 26.4	37.5
1.040 - 1.102	26.41 - 28	37.5

FINE-BEAM



DCN - DCX (in)	DCN - DCX (mm)	L5
0.984 - 1.039	25 - 26.4	40
1.040 - 1.220	26.41 - 31	42
1.221 - 1.311	31.01 - 33.3	47
1.311 - 1.425	33.31 - 36.2	50
1.426 - 1.559	36.21 - 39.6	55
1.559 - 1.850	39.61 - 47	60
1.851 - 2.035	47.01 - 51.7	66
2.036 - 2.559	51.71 - 65	71

UNIDEX



DCN - DCX (in)	DCN - DCX (mm)	L5
1.496 - 1.693	38 - 43	45
1.693 - 1.850	43.01 - 47	55
1.851 - 2.035	47.01 - 51.7	51
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.150 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86

ETU



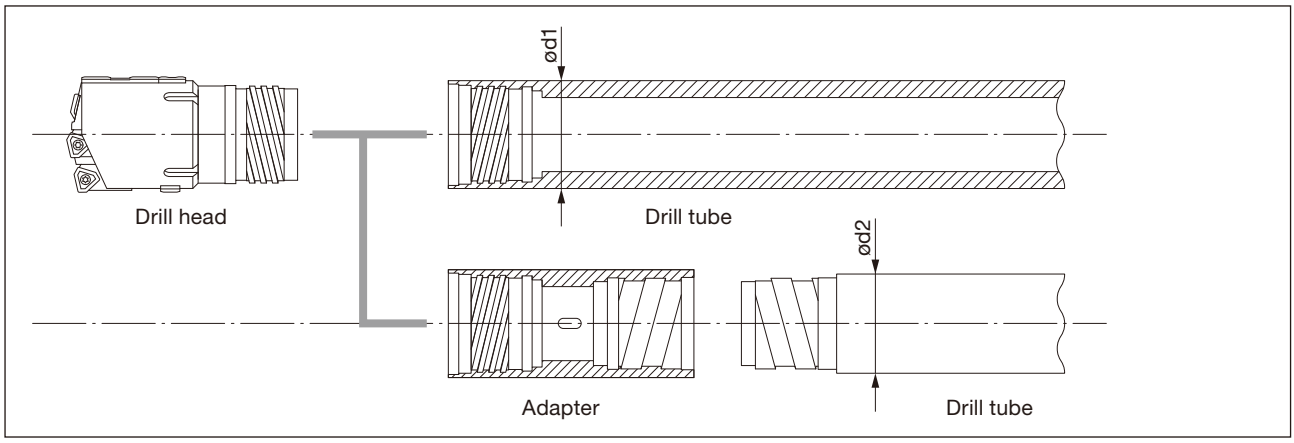
DCN - DCX (in)	DCN - DCX (mm)	L5
0.724 - 0.787	18.4 - 20	20
0.788 - 0.949	20.01 - 24.1	23
0.949 - 1.130	24.11 - 28.7	24
1.130 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.850	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.300 - 2.559	58.41 - 65	33

STS Single Tube System DTS Double Tube System

Conversion adapter

Adapter for external thread - internal thread conversion

An adapter to connect with a smaller tube diameter is also available upon request.



ød1 : Outer diameter of the tube that is applicable for the drill head
ød2 : Outer diameter of the tube that is connected with the adapter

ADPT- □ □ □ / □ □ □

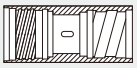
SS	Single-start thread	SS	Single-start thread
TS	2-start thread	TS	2-start thread
FS	4-start thread	FS	4-start thread
ød1		ød2	
F	Internal thread	F	Internal thread
M	External thread	M	External thread

Designation example

For the conversion from ST11 to UB47

ADPT-F47FS / F47SS

ST11 UB47



HF Drill : Indexable drill for deep hole



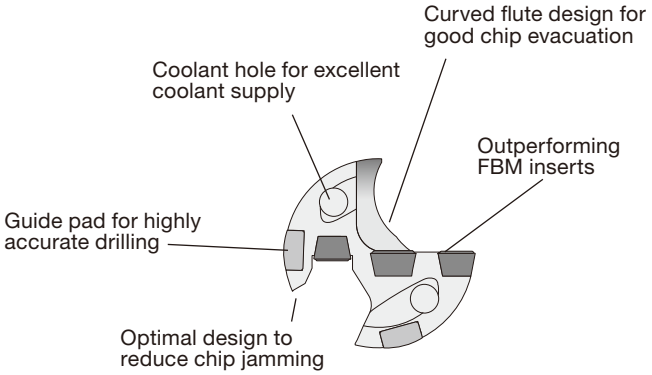
Economical for middle range deep hole drilling
- Tool diameter range: ø30 - ø63 mm (*)
- Drilling depth: 6xD - 14xD
- Shortened drilling time when using conventional machine

Effective machining on conventional machines
- Recommended for use on Horizontal M/C
- Can also be used on turning machine

Good chip evacuation
- FBM inserts enable best chip control
- Unique head design eliminates chip jamming
- Curved flute design ensures good chip evacuation

Easy to use, rigid drill body
- Direct mount inserts, no diameter adjustment necessary
- Body is made from heat treated tool steel

High quality surface finish
- Burnishing effect improves surface finish
- Possible to eliminate finish process



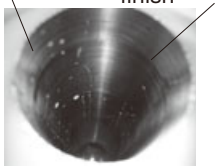
PRACTICAL EXAMPLE

Cutting conditions

Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 m/min
Feed *f*:	0.1 mm/rev
Machine:	BT50 M/C

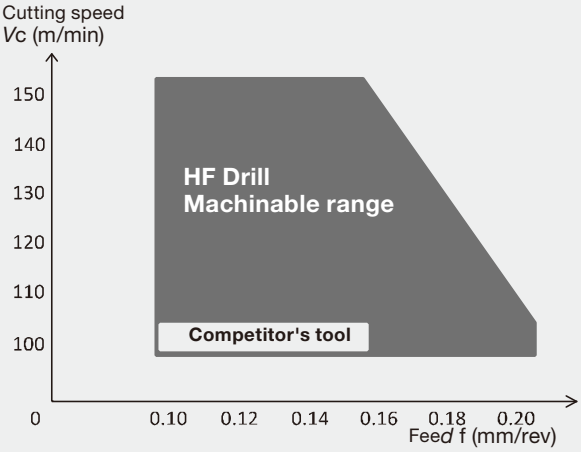
No spiral marks caused by chips

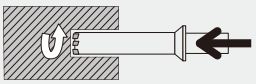
Burnishing effect by guide pads improves surface finish



BT50 M/C Machining data

Excellent chip evacuation ensures the stable drilling on M/C.





- Water-soluble coolant
- Pressure: 1.5 MPa
- Through spindle

Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 - 150 m/min
Feed *f*:	0.1 - 0.2 mm/rev
Machine:	BT50 Horizontal M/C (Max 11 KW)

Cautionary points in use

To start the tool, a pilot hole is required.
(tolerance: + 0.1 to 0.15 mm)

Tool diameter DC (mm)	Pilot hole length H (mm)
ø30 ~ ø39	10 ≤
ø39.01 ~ ø45	12.5 ≤
ø45.01 ~ ø57	15 ≤
ø57.01 ~ ø63	17.5 ≤

- The pilot hole should ideally have a flat bottom, but generally a indexable drill is acceptable to create a pilot hole if the inner insert touches the bottom last.
- DrillForce-Meister series or TDX drills are recommended for a pilot hole drilling.

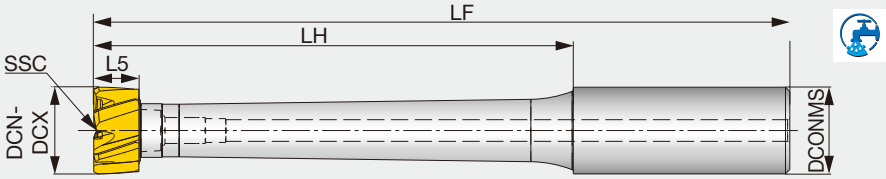


REAMMEISTER

TRM

Exchangeable head reamer, L/D = 1.5, 3, 5, 8





Inch	DCN (in)	DCN (mm)	DCX (in)	DCX (mm)	SSC	L/D	DCONMS	L5	LF	LH
TRMU-T5-R0.625-1.5	0.45276	11.5	0.5315	13.5	T5	1.5	15.875	9.3	77.7	29.7
TRMU-T6-R0.625-1.5	0.53154	13.501	0.62993	16	T6	1.5	15.875	9.4	81.5	33.5
TRMU-T7-R0.75-1.5	0.62996	16.001	0.7874	20	T7	1.5	19.05	10.6	90.7	40.6
TRMU-T8-R0.75-1.5	0.78744	20.001	1.02358	25.999	T8	1.5	19.05	12.8	101.1	51.1
TRMU-T9-R1.25-1.5	1.02362	26	1.25984	32	T9	1.5	31.75	12.8	120.9	61.0
TRMU-T5-R0.625-3	0.45276	11.5	0.5315	13.5	T5	3	15.875	9.3	97.8	49.8
TRMU-T6-R0.625-3	0.53154	13.501	0.62993	16	T6	3	15.875	9.4	105.4	57.4
TRMU-T7-R0.75-3	0.62996	16.001	0.7874	20	T7	3	19.05	10.6	120.4	70.6
TRMU-T8-R0.75-3	0.78744	20.001	1.02358	25.999	T8	3	19.05	12.8	137.7	87.6
TRMU-T9-R1.25-3	1.02362	26	1.25984	32	T9	3	31.75	12.8	167.1	106.9
TRMU-T5-R0.625-5	0.45276	11.5	0.5315	13.5	T5	5	15.875	9.3	125.0	77.0
TRMU-T6-R0.625-5	0.53154	13.501	0.62993	16	T6	5	15.875	9.4	137.4	89.4
TRMU-T7-R0.75-5	0.62996	16.001	0.7874	20	T7	5	19.05	10.6	160.5	110.5
TRMU-T8-R0.75-5	0.78744	20.001	1.02358	25.999	T8	5	19.05	12.8	187.7	137.7
TRMU-T9-R1.25-5	1.02362	26	1.25984	32	T9	5	31.75	12.8	231.1	171.2
TRMU-T5-R0.625-8	0.45276	11.5	0.5315	13.5	T5	8	15.875	9.3	165.4	117.3
TRMU-T6-R0.625-8	0.53154	13.501	0.62993	16	T6	8	15.875	9.4	185.4	137.4
TRMU-T7-R0.75-8	0.62996	16.001	0.7874	20	T7	8	19.05	10.6	220.5	170.7
TRMU-T8-R0.75-8	0.78744	20.001	1.02358	25.999	T8	8	19.05	12.8	262.9	212.9
TRMU-T9-R1.25-8	1.02362	26	1.25984	32	T9	8	31.75	12.8	327.2	267.0

Metric	DCN (in)	DCN (mm)	DCX (in)	DCX (mm)	SSC	L/D	DCONMS	L5	LF	LH
TRM-T5-R16-1.5	0.45276	11.5	0.5315	13.5	T5	1.5	0.625	0.366	3.06	1.17
TRM-T6-R16-1.5	0.53154	13.501	0.62993	16	T6	1.5	0.625	0.37	3.21	1.32
TRM-T7-R20-1.5	0.62996	16.001	0.7874	20	T7	1.5	0.75	0.417	3.57	1.6
TRM-T8-R20-1.5	0.78744	20.001	1.02358	25.999	T8	1.5	0.75	0.504	3.98	2.01
TRM-T9-R32-1.5	1.02362	26	1.25984	32	T9	1.5	1.25	0.504	4.76	2.4
TRM-T5-R16-3	0.45276	11.5	0.5315	13.5	T5	3	0.625	0.366	3.85	1.96
TRM-T6-R16-3	0.53154	13.501	0.62993	16	T6	3	0.625	0.37	4.15	2.26
TRM-T7-R20-3	0.62996	16.001	0.7874	20	T7	3	0.75	0.417	4.74	2.78
TRM-T8-R20-3	0.78744	20.001	1.02358	25.999	T8	3	0.75	0.504	5.42	3.45
TRM-T9-R32-3	1.02362	26	1.25984	32	T9	3	1.25	0.504	6.58	4.21
TRM-T5-R16-5	0.45276	11.5	0.5315	13.5	T5	5	0.625	0.366	4.92	3.03
TRM-T6-R16-5	0.53154	13.501	0.62993	16	T6	5	0.625	0.37	5.41	3.52
TRM-T7-R20-5	0.62996	16.001	0.7874	20	T7	5	0.75	0.417	6.32	4.35
TRM-T8-R20-5	0.78744	20.001	1.02358	25.999	T8	5	0.75	0.504	7.39	5.42
TRM-T9-R32-5	1.02362	26	1.25984	32	T9	5	1.25	0.504	9.1	6.74
TRM-T5-R16-8	0.45276	11.5	0.5315	13.5	T5	8	0.625	0.366	6.51	4.62
TRM-T6-R16-8	0.53154	13.501	0.62993	16	T6	8	0.625	0.37	7.3	5.41
TRM-T7-R20-8	0.62996	16.001	0.7874	20	T7	8	0.75	0.417	8.68	6.72
TRM-T8-R20-8	0.78744	20.001	1.02358	25.999	T8	8	0.75	0.504	10.35	8.38
TRM-T9-R32-8	1.02362	26	1.25984	32	T9	8	1.25	0.504	12.88	10.51

Key and screw are included.
Maximum effective reaming depth = Head diameter x L/D ratio.
Ex. For a reamer with ø0.5": 0.5" x 3D = 1.5"

SPARE PARTS

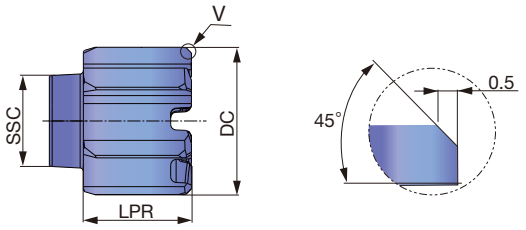



Designation	Screw	Key
TRM-T5-R16-1.5	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-1.5	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-1.5	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-1.5	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-1.5	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-3	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-3	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-3	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-3	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-3	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-5	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-5	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-5	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-5	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-5	SCR-TRM-T9	K-TRM-T9
TRM-T5-R16-8	SCR-TRM-T5	K-TRM-T5
TRM-T6-R16-8	SCR-TRM-T6	K-TRM-T6
TRM-T7-R20-8	SCR-TRM-T7	K-TRM-T7
TRM-T8-R20-8	SCR-TRM-T8	K-TRM-T8
TRM-T9-R32-8	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-1.5	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-1.5	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-1.5	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-1.5	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-1.5	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-3	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-3	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-3	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-3	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-3	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-5	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-5	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-5	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-5	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-5	SCR-TRM-T9	K-TRM-T9
TRMU-T5-R0.625-8	SCR-TRM-T5	K-TRM-T5
TRMU-T6-R0.625-8	SCR-TRM-T6	K-TRM-T6
TRMU-T7-R0.75-8	SCR-TRM-T7	K-TRM-T7
TRMU-T8-R0.75-8	SCR-TRM-T8	K-TRM-T8
TRMU-T9-R1.25-8	SCR-TRM-T9	K-TRM-T9

Reference pages: Head → J184, Standard cutting conditions → J187

REAMER HEAD

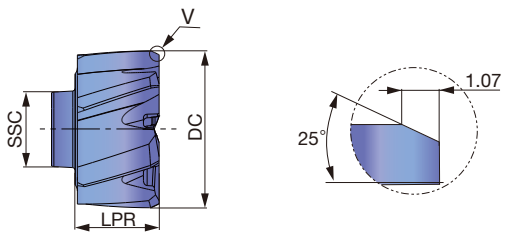
HRM-AS (for blind holes)



Designation	DC (in)	DC (mm)	AH725	SSC	LPR	CICT	Edge type	Flute type
HRM-11.501-AS-T5	0.4528	11.501	●	T5	9.3	6	A	S
HRM-12.000-AS-T5	0.47244	12	●	T5	9.3	6	A	S
HRM-12.700-AS-T5	0.51181	12.7	●	T5	9.3	6	A	S
HRM-13.000-AS-T5	0.53149	13	●	T5	9.3	6	A	S
HRM-13.500-AS-T5	0.55118	13.5	●	T5	9.3	6	A	S
HRM-14.000-AS-T6	0.59055	14	●	T6	9.4	6	A	S
HRM-15.000-AS-T6	0.62992	15	●	T6	9.4	6	A	S
HRM-15.875-AS-T6	0.62996	15.875	●	T6	9.4	6	A	S
HRM-16.000-AS-T6	0.66929	16	●	T6	9.4	6	A	S
HRM-16.001-AS-T7	0.70866	16.001	●	T7	10.6	6	A	S
HRM-17.000-AS-T7	0.74803	17	●	T7	10.6	6	A	S
HRM-18.000-AS-T7	0.7874	18	●	T7	10.6	6	A	S
HRM-19.000-AS-T7	0.78744	19	●	T7	10.6	6	A	S
HRM-19.050-AS-T7	0.82677	19.05	●	T7	10.6	6	A	S
HRM-20.000-AS-T7	0.86614	20	●	T7	10.6	6	A	S
HRM-20.001-AS-T8	0.90551	20.001	●	T8	12.8	8	A	S
HRM-21.000-AS-T8	0.94488	21	●	T8	12.8	8	A	S
HRM-22.000-AS-T8	0.98425	22	●	T8	12.8	8	A	S
HRM-23.000-AS-T8	1.02362	23	●	T8	12.8	8	A	S
HRM-24.000-AS-T8	1.06299	24	●	T8	12.8	8	A	S
HRM-25.000-AS-T8	1.10236	25	●	T8	12.8	8	A	S
HRM-25.400-AS-T8	1.14173	25.4	●	T8	12.8	8	A	S
HRM-26.000-AS-T9	1.1811	26	●	T9	12.8	8	A	S
HRM-27.000-AS-T9	1.22047	27	●	T9	12.8	8	A	S
HRM-28.000-AS-T9	1.25984	28	●	T9	12.8	8	A	S
HRM-29.000-AS-T9	0.5	29	●	T9	12.8	8	A	S
HRM-30.000-AS-T9	0.625	30	●	T9	12.8	8	A	S
HRM-31.000-AS-T9	0.75	31	●	T9	12.8	8	A	S
HRM-31.750-AS-T9	1	31.75	●	T9	12.8	8	A	S
HRM-32.000-AS-T9	1.25	32	●	T9	12.8	8	A	S

Package quantity = 1 pcs.
●: Line up

HRM-BL (for through holes)



Designation	DC (in)	DC (mm)	AH725	SSC	LPR	CICT	Edge type	Flute type
HRM-11.501-BL-T5	0.4528	11.501	●	T5	9.3	6	B	L
HRM-12.000-BL-T5	0.47244	12	●	T5	9.3	6	B	L
HRM-12.700-BL-T5	0.51181	12.7	●	T5	9.3	6	B	L
HRM-13.000-BL-T5	0.5315	13	●	T5	9.3	6	B	L
HRM-13.500-BL-T5	0.53154	13.5	●	T5	9.3	6	B	L
HRM-13.501-BL-T6	0.55118	13.501	●	T6	9.4	6	B	L
HRM-14.000-BL-T6	0.59055	14	●	T6	9.4	6	B	L
HRM-15.000-BL-T6	0.62992	15	●	T6	9.4	6	B	L
HRM-15.875-BL-T6	0.62996	15.875	●	T6	9.4	6	B	L
HRM-16.000-BL-T6	0.66929	16	●	T6	9.4	6	B	L
HRM-16.001-BL-T7	0.70866	16.001	●	T7	10.6	6	B	L
HRM-17.000-BL-T7	0.74803	17	●	T7	10.6	6	B	L
HRM-18.000-BL-T7	0.7874	18	●	T7	10.6	6	B	L
HRM-19.000-BL-T7	0.78744	19	●	T7	10.6	6	B	L
HRM-19.050-BL-T7	0.82677	19.05	●	T7	10.6	6	B	L
HRM-20.000-BL-T7	0.86614	20	●	T7	10.6	6	B	L
HRM-20.001-BL-T8	0.90551	20.001	●	T8	12.8	8	B	L
HRM-21.000-BL-T8	0.94488	21	●	T8	12.8	8	B	L
HRM-22.000-BL-T8	0.98425	22	●	T8	12.8	8	B	L
HRM-23.000-BL-T8	1.02362	23	●	T8	12.8	8	B	L
HRM-24.000-BL-T8	1.06299	24	●	T8	12.8	8	B	L
HRM-25.000-BL-T8	1.10236	25	●	T8	12.8	8	B	L
HRM-25.400-BL-T8	1.14173	25.4	●	T8	12.8	8	B	L
HRM-26.000-BL-T9	1.1811	26	●	T9	12.8	8	B	L
HRM-27.000-BL-T9	1.22047	27	●	T9	12.8	8	B	L
HRM-28.000-BL-T9	1.25984	28	●	T9	12.8	8	B	L
HRM-29.000-BL-T9	0.5	29	●	T9	12.8	8	B	L
HRM-30.000-BL-T9	0.625	30	●	T9	12.8	8	B	L
HRM-31.000-BL-T9	0.75	31	●	T9	12.8	8	B	L
HRM-32.000-BL-T9	1	32	●	T9	12.8	8	B	L

Package quantity = 1 pcs.
●: Line up

Inch

Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø0.45276 - ø0.70866	+0.00059 / +0.00043	+0.00071 / 0
ø0.70870 - ø1.18110	+0.00067 / +0.00051	+0.00083 / 0
ø1.18114 - ø1.25984	+0.00083 / +0.00063	+0.00098 / 0

Metric

Head diameter range	Tool diameter tolerance	Hole diameter tolerance*
ø11.500 - ø18.000	+0.015 / +0.011	+0.018 / 0
ø18.001 - ø30.000	+0.017 / +0.013	+0.021 / 0
ø30.001 - ø32.000	+0.021 / +0.016	+0.025 / 0

*Just for reference

All standard heads are designed to achieve H7 hole tolerance.
Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.

Inch

Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø0.45276 - ø0.70866	+0.00059 / +0.00043	+0.00071 / 0
ø0.70870 - ø1.18110	+0.00067 / +0.00051	+0.00083 / 0
ø1.18114 - ø1.25984	+0.00083 / +0.00063	+0.00098 / 0

Metric

Head diameter range	Tool diameter tolerance	Hole diameter tolerance*
ø11.500 - ø18.000	+0.015 / +0.011	+0.018 / 0
ø18.001 - ø30.000	+0.017 / +0.013	+0.021 / 0
ø30.001 - ø32.000	+0.021 / +0.016	+0.025 / 0

*Just for reference

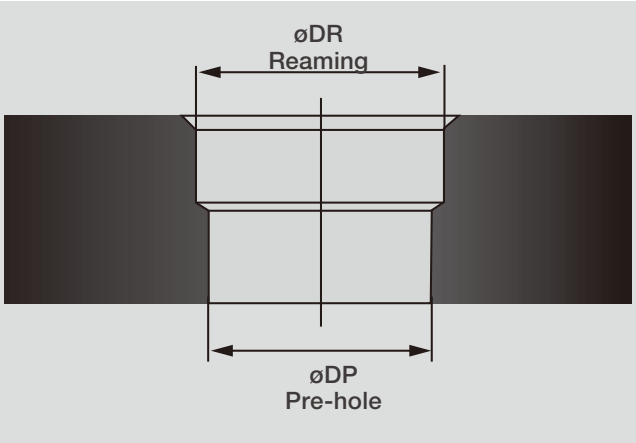
All standard heads are designed to achieve H7 hole tolerance.
Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.

Reaming allowance

- Reaming allowance Δ is the stock material to be removed in the reaming process. For a successful reaming operation, reaming allowance must be determined with proper considerations. Refer to the table below for appropriate reaming allowance for various hole diameters and materials. Standard reaming allowance, unless otherwise required, will be the target diameter +0.0079" for all hole diameter ranges and materials.
- Reaming quality largely depends on the quality of the pre-hole. Pre-holes must have no diameter fluctuation and good straightness.

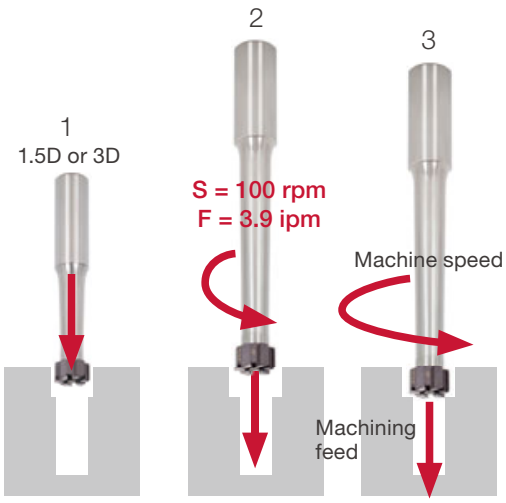
△ : Reaming allowance

△ = øDR - øDP



Workpiece material	Hole diemeter (inch)			
	0.45276 - 0.53150	0.53154 - 0.62992	0.62996 - 1.02362	1.02366 - 1.25984
Steel and cast Iron	Δ = 0.00394 - 0.00787	Δ = 0.00394 - 0.01181	Δ = 0.00394 - 0.01575	Δ = 0.00787 - 0.01969
Aluminum and brass	Δ = 0.00591 - 0.00984	Δ = 0.00787 - 0.01181	Δ = 0.00787 - 0.01969	Δ = 0.00787 - 0.02362

Make a guide hole with a shorter reamer (1.5D or 3D), then use a long overhang tool. (Best option for using an 8D tool)

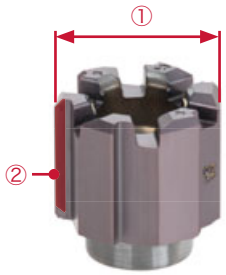


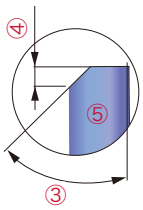
1. Use a shorter reamer (1.5D or 3D) to make a guide hole with a depth of 0.5xD~1xD.
2. Insert the long reamer (8D) in the guide hole rotating at a low speed (<100 rpm) and feeding slowly (at F = 3.9 ipm) until the reamer reaches several millimeters from the bottom.
3. Rotate the reamer with the full machining speed and start feeding.

***Use the same diameter heads for both piloting and deep reaming processes**

TAILORED REAMER HEAD

Tungaloy will produce reaming heads with customized diameters and tooth geometries tailored to your specific application needs. Provide the necessary information below or contact your local distributor or Tungaloy sales team.





Information sheet for quotation & order

Hole diameter and tolerance	ø
Surface finish	☐ Ra ☐ Rz
Workpiece material	
① Head diameter	ø (0.001 unit)
② Flute type	☐ Straight ☐ Helix, Left ☐ Helix, Right
③ Engagement angle	(20° - 90°)
④ Cutting edge length	
⑤ Corner shape	☐ Up sharp ☐ Round (R0.2 or higher)
Other specific needs	

STANDARD CUTTING CONDITIONS

Conversion table for feed per tooth

ISO	Workpiece materials	Hardness	Cutting speed *Vc* (sfm)	Feed: *fz* (ipt)			
				AS: Straight flute (for blind holes)		BL: Left hand flute (for through holes)	
				ø0.45280 - ø0.62992	ø0.62996 - ø1.25984	ø0.45280 - ø0.62992	ø0.62996 - ø1.25984
P	Low carbon steel (C<0.3) 1018, 1020, 1026, E275A, etc.	- 200 HB	262 - 656	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
	Carbon steel (C>0.3) 1045, 1055, etc.	- 300 HB	262 - 492	0.00197 - 0.00591	0.00197 - 0.00709	0.00197 - 0.00709	0.00197 - 0.00984
	Low alloy steel (C<0.3) 5120, etc.	- 200 HB	262 - 656	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
	Alloy steel (C>0.3) 4140, 8620, etc.	- 300 HB	164 - 492	0.00118 - 0.00394	0.00197 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
M	Stainless steel (Austenitic) 304, 316, etc.	- 200 HB	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
	Stainless steel (Martensitic and ferritic) 410, 416, etc.	- 200 HB	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
	Stainless steel (Precipitation hardening) S17400, etc	-	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
K	Gray cast iron Class No.25, No.30, No.35, etc.	150 - 250 HB	328 - 820	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
	Ductile cast iron 100-70-03, etc.	150 - 250 HB	262 - 656	0.00197 - 0.00591	0.00197 - 0.00709	0.00197 - 0.00709	0.00197 - 0.00984
N	Aluminum alloy	-	328 - 984	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
S	High temp. alloy Inconel718 etc.	- 40 HRC	49 - 164	0.00118 - 0.00236	0.00118 - 0.00315	0.00197 - 0.00394	0.00197 - 0.00512
	Titanium alloy Ti-6Al-4V etc.	- 40 HRC	98 - 197	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
H	Hardened steel Over 40HRC etc.	- 50 HRC	164 - 328	0.00118 - 0.00315	0.00118 - 0.00394	0.00197 - 0.00472	0.00197 - 0.00591

Conversion table for feed per revolution

ISO	Workpiece materials	Hardness	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)					
				AS: Straight flute (for blind holes)			BL: Left hand flute (for through holes)		
				ø0.45280 - ø0.62992	ø0.62996 - ø0.78740	ø0.78744 - ø1.25984	ø0.45280 - ø0.62992	ø0.62996 - ø0.78740	ø0.78744 - ø1.25984
				6 flutes	6 flutes	8 flutes	6 flutes	6 flutes	8 flutes
P	Low carbon steel (C<0.3) 1018, 1020, 1026, E275A, etc.	- 200 HB	262 - 656	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
	Carbon steel (C>0.3) 1045, 1055, etc.	- 300 HB	262 - 492	0.01181 - 0.03543	0.01181 - 0.04252	0.01575 - 0.05669	0.01181 - 0.04252	0.01181 - 0.05906	0.01575 - 0.07874
	Low alloy steel (C<0.3) 5120, etc.	- 200 HB	262 - 656	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.04724	0.01575 - 0.08504
	Alloy steel (C>0.3) 4140, 8620, etc.	- 300 HB	164 - 492	0.00709 - 0.02362	0.00709 - 0.03071	0.01575 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
M	Stainless steel (Austenitic) 304, 316, etc.	- 200 HB	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
	Stainless steel (Martensitic and ferritic) 410, 416, etc.	- 200 HB	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
	Stainless steel (Precipitation hardening) S17400, etc	-	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
K	Gray cast iron Class No.25, No.30, No.35, etc.	150 - 250 HB	328 - 820	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
	Ductile cast iron 100-70-03, etc.	150 - 250 HB	262 - 656	0.01181 - 0.03543	0.01181 - 0.04252	0.01575 - 0.05669	0.01181 - 0.07087	0.01181 - 0.06378	0.01575 - 0.07874
N	Aluminum alloy	-	328 - 984	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
S	High temp. alloy Inconel718 etc.	- 40 HRC	49 - 164	0.00709 - 0.01417	0.00709 - 0.01890	0.00945 - 0.02520	0.01181 - 0.02362	0.01181 - 0.03071	0.01575 - 0.04094
	Titanium alloy Ti-6Al-4V etc.	- 40 HRC	98 - 197	0.00709 - 0.02362	0.00709 - 0.03071	0.00945- 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
H	Hardened steel Over 40HRC etc.	- 50 HRC	164 - 328	0.00709 - 0.01890	0.00709 - 0.02362	0.00945 - 0.03150	0.01181 - 0.02835	0.01181 - 0.03543	0.01575 - 0.04724

Alphanumeric Index

Drilling

Designation	Product name	Page
A		
AOMT030204-N-□□DT	DrillMeister insert for special chamfering tool	J028
AOMT060204-C45	DrillMeister insert for special chamfering tool	J028
B		
BTU-...	Brazed drill head for STS	J170 - J172
C		
CDS-...	Solid drill for cast iron and aluminium alloy	J049
D		
DMC...	DrillMiester high precision machining head	J032, J033
DMF...	DrillMeister flat geometry head	J034
DMN...	DrillMeister non-fer rous metals drilling head	J036
DMH...	DrillMiester high strength cutting edge head	J035
DMP...	DrillMeister general purpose head	J029 - J031
DMX□□□□FL	Solid drill for cast iron and aluminium alloy, L/D=5	J065
DMX□□□□FM	Solid drill for cast iron and aluminium alloy, L/D=3	J064
DMX□□□□FS	Solid drill for cast iron and aluminium alloy, L/D=2	J064
DMX□□□M	Solid drill for steel, L/D=3	J063
DMX□□□S	Solid drill for steel, L/D=2	J063
DMXU□□□□VM	Solid drill for steel, L/D=3	J062
DMXU□□□□VS	Solid drill for steel, L/D=2	J061
DSE□□□□F02	GigaPowerDrill solid drill without coolant hole L/D=2	J058
DSE□□□□F03	GigaPowerDrill solid drill without coolant hole L/D=3	J059
DSM-CP140	GigaMiniDrill centering drill	J048
DSM-CP90	GigaMiniDrill centering drill	J048
DSM□□□□G...	GigaMiniDrill small diameter solid drill	J047
DSW□□□-□□□-□□DE3	SolidDrill without coolant hole L/D=3	J050
DSW□□□-□□□-□□DE5	SolidDrill without coolant hole L/D=5	J051
DSW□□□-□□□-□□DI5	SolidDrill with coolant hole L/D=5	J052
DSW□□□-□□□-□□DI8	SolidDrill with coolant hole L/D=8	J053
DSQ□□□-□□□-□□E3	Solid4FlutesDrill solid drill with coolant hole L/D=3	J066
DSQ□□□-□□□-□□E5	Solid4FlutesDrill solid drill with coolant hole L/D=5	J066
DSX□□□□F03	GigaJetDrill solid drill with coolant hole L/D=3	J056
DSX□□□□F05	GigaJetDrill solid drill with coolant hole L/D=5	J057
DSX□□□□F08	GigaJetDrill solid drill with coolant hole L/D=8	J058
DSXU□□□□F03	GigaJetDrill solid drill with coolant hole L/D=3	J055
DSXU□□□□F05	GigaJetDrill solid drill with coolant hole L/D=5	J055
E		
ETU-...	Brazed drill head for DTS	J173
EZ...	TungDrill-Twisted・TungSix-Drill eccentric sleeve	J093
F		
FBH□□□□□□R-HF-P	FineBeam insert for peripheral cutting edge	J145
FBH□□□□□R-G-P	DeepTri-Drill, FineBeam insert for peripheral cutting edge	J127, J145
FBM□□□□□□L-G-C	DeepTri-Drill, FineBeam insert for central cutting edge	J126, J144
FBM□□□□□□L-HF-C	FineBeam insert for central cutting edge	J144
FBM□□□□□□R-HF-I	FineBeam insert for intermediate cutting edge	J144
FBM□□□□□R-DL-I	DeepTri-Drill, FineBeam insert for intermediate cutting edge	J127, J144
FBM□□□□□R-G-I	DeepTri-Drill, FineBeam insert for intermediate cutting edge	J127, J144

Designation	Product name	Page
FDC□□□□L	Solid drill for cast iron and aluminium alloy, L/D=8	J060
FDCU□□□L	Solid drill for cast iron and aluminium alloy, L/D=8	J060
FDCU□□□S	Solid drill for cast iron and aluminium alloy, L/D=5	J060
FDS1100	Solid drill for pre-drilling of tapping hole, L/D=2	J065
FNBM-□□D-...	FineBeam drill head for DTS, external quadruple thread	J141
FNBM-□□N-...	FineBeam drill head for STS, internal single thread	J140
FNBM-□□S-...	FineBeam drill head for STS, external quadruple thread	J139
FNTR-□□D-...	Tri-Fine drill head for DTS, external quadruple thread	J136
FNTR-□□N-...	Tri-Fine drill head for STS, internal single thread	J135
FNTR-□□S-...	Tri-Fine drill head for STS, internal quadruple thread	J134
FNTR-00□□S-...	Tri-Fine drill head for STS, internal quadruple thread	J134
FNTR-16.5N-...	Tri-Fine drill head for STS, internal single thread	J135
G		
GP...	Guide pad	J128, J138, J146, J165
H		
HRM-□□.□□□-AS-T...	ReamMeister head with straight flute for blind holes	J184
HRM-□□.□□□-BL-T...	ReamMeister head with left hand flute for through holes	J184
I		
IT...	DTS inner tube	J178
K		
KHS-TID10-19.99	DrillMeister head clamping key	J037
KUDTS□□E-...	Unidex adjustable diameter drill head for DTS, external quadruple thread	J159, J161, J163
KUSTS□□-...	Unidex adjustable diameter drill head for STS, external single thread	J148, J151, J154, J157
KUSTS□□E-...	Unidex adjustable diameter drill head for STS, external quadruple thread	J147, J150, J153, J156
L		
LOGT060204R-NDJ	DeepTri-Drill insert	J125
LPMT03X206R-D4	Drilling insert	J103
LPMT05X204-D4	Drilling insert	J103
M		
MBU-...	Brazed drill head for STS, external single thread	J168
MCTR□□.□□XM□□-10	DeepTri-Drill for lathes and machining centers L/D=10	J109
MCTR□□.□□XM□□-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR□□.□□XM□□-20	DeepTri-Drill for lathes and machining centers L/D=20	J113
MCTR□□.□□XM□□-25	DeepTri-Drill for lathes and machining centers L/D=25	J115
MCTR□□.□□XM□□A-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR□□.□□XM25A-10	DeepTri-Drill for lathes and machining centers L/D=10	J109
MCTR□□.□□XM25A-25	DeepTri-Drill for lathes and machining centers L/D=25	J115
MCTR□□.□□XU25.4-10	DeepTri-Drill for lathes and machining centers L/D=10	J109
MCTR□□.□□XU25.4-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR□□.□□XU19.05-25	DeepTri-Drill for lathes and machining centers L/D=25	J114
MCTR□□.□□XU25.4-25	DeepTri-Drill for lathes and machining centers L/D=25	J114, J115
MCTR□□.□□XU31.75-10	DeepTri-Drill for lathes and machining centers L/D=10	J109

Designation	Product name	Page
MCTR□□.□□XU31.75-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR□□.□□XU31.75-25	DeepTri-Drill for lathes and machining centers L/D=25	J114
MCTR□□.□□XU38.1-25	DeepTri-Drill for lathes and machining centers L/D=25	J114
MCTR□□.□□XFM□□-8	DeepTri-Drill for lathes and machining centers L/D=8	J108
MCTR□□.□□XFM40-10	DeepTri-Drill for lathes and machining centers L/D=10	J110
MCTR□□.□□XFM40-15	DeepTri-Drill for lathes and machining centers L/D=15	J112
MCTR□□.□□XFU31.75-10	DeepTri-Drill for lathes and machining centers L/D=10	J110
MCTR□□.□□XFU31.75-15	DeepTri-Drill for lathes and machining centers L/D=15	J112
MCTR□□.□□XFU31.75-25	DeepTri-Drill for lathes and machining centers L/D=25	J116
MCTR□□.00XM□□-35	DeepTri-Drill for lathes and machining centers L/D=35	J118
MCTR□□.00XM□□-40	DeepTri-Drill for lathes and machining centers L/D=40	J118
MCTR12.00XM20-45	DeepTri-Drill for lathes and machining centers L/D=45	J118
MCTR17.45XU25.4A-10	DeepTri-Drill for lathes and machining centers L/D=10	J109
MCTR17.45XU25.4A-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR17.45XU25.4A-25	DeepTri-Drill for lathes and machining centers L/D=25	J114, J115
MCTR26.97XU31.75X-10	DeepTri-Drill for lathes and machining centers L/D=10	J109
MCTR26.97XU31.75X-15	DeepTri-Drill for lathes and machining centers L/D=15	J111
MCTR26.97XU31.75X-25	DeepTri-Drill for lathes and machining centers L/D=25	J114, J115
MCTR30.00XFM40-25	DeepTri-Drill for lathes and machining centers L/D=25	J116
MCTRCH□□.□□XU25.4-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J117
MCTRCH□□.00XM□□-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J117
MCTRCH□□.00XM25A-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J117
MCTRCH23.80XU31.75-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J117

N		
NPMX080308R-G	Unidex insert	J164
NPMX080304R-B	Unidex insert	J164

O		
OT...	DTS outer tube	J178

S		
SHIMSET-GP0...	DeepTri-Drill, Tri-Fine, FineBeam, shim for fine adjustments of hole diameters	J129
SLJ□□□□L□□□□NA	Brazed gundrill	J131
SMF...	DrillForce-Meister flat geometry drill head	J044
SMP...	DrillForce-Meister general purpose drill head	J043
SMP□□□-□□□-GH	DrillForce-Meister regrinding holder	J045
SPM□□□□08ER-D	Drilling insert	J103
SPM□□□□ERD	Drilling insert	J103
SPMT060204-DS	Drilling insert	J103
SPMP831DS	Drilling insert	J103
ST...	Drill tube for STS, internal quadruple thread	J174
ST00...	Drill tube for STS, internal double/quadruple thread	J174

T		
TDB□□-□□F50-2.5	TungDrill-Big drill body	J095, J099
TDBU□□□□-□□□□-2.5	TungDrill-Big drill body	J094, J098
TDS□□□F□□-2	TungSix-Drill flat, L/D=2	J072
TDS□□□F□□-3	TungSix-Drill flat, L/D=3	J073
TDS□□□F□□-4	TungSix-Drill flat, L/D=4	J075
TDSCA□□-...	TungDrill-Big cartridge set, adjustable tool diameter	J095
TDSU□□□F□□-3	TungSix-Drill flat, L/D=3	J073
TDSU-0750FS-02	TungSix-Drill flat, L/D=2	J071
TDSU-0750FS-03	TungSix-Drill flat, L/D=3	J071
TDSU-0750FS-04	TungSix-Drill flat, L/D=4	J074
TDSU□□□□F-2	TungSix-Drill flat, L/D=2	J071
TDSU□□□□F-3	TungSix-Drill flat, L/D=3	J071
TDSU□□□□F-4	TungSix-Drill flat, L/D=4	J074
TDX□□□F□□-2	TungDrill-Twisted flat, L/D = 2	J081
TDX□□□F□□-3	TungDrill-Twisted flat, L/D = 3	J083
TDX□□□F□□-4	TungDrill-Twisted flat, L/D = 4	J085
TDX□□□F□□-5	TungDrill-Twisted flat, L/D = 5	J087
TDXU-□□□□FS-02	TungDrill-Twisted flat shank, side port, L/D = 2	J080
TDXU-□□□□FS-03	TungDrill-Twisted flat shank, side port, L/D = 3	J082
TDXU-□□□□FS-04	TungDrill-Twisted flat shank, side port, L/D = 4	J084
TDXU-□□□□FS-05	TungDrill-Twisted flat shank, side port, L/D = 5	J086
TDXCA□□-...	TungDrill-Bigcartridge set, adjustable tool diameter	J099
TDXCF□□□L...	TungDrill-Twisted, TungSix-Drill chamfering tool	J078, J091, J092
TID□□□F□□-1.5	DrillMeister head exchangeable drill, flange type, L/D=1.5	J013
TID□□□F□□-3	DrillMeister head exchangeable drill, flange type, L/D=3	J016
TID□□□F□□-5	DrillMeister head exchangeable drill, flange type, L/D=5	J020
TID□□□F□□-8	DrillMeister head exchangeable drill, flange type, L/D=8	J024
TID□□□R□-2E	DrillMeister head exchangeable drill, round shank, L/D=2	J014
TID□□□R□-3.5	DrillMeister head exchangeable drill, round shank, L/D=3.5	J018
TID□□□R□-6	DrillMeister head exchangeable drill, round shank, L/D=6	J022
TID□□□R□-8	DrillMeister head exchangeable drill, round shank, L/D=8	J025
TID□□□R□□-2E	DrillMeister head exchangeable drill, round shank, L/D=2	J014
TID□□□R□□-3.5	DrillMeister head exchangeable drill, round shank, L/D=3.5	J018
TID□□□R□□-6	DrillMeister head exchangeable drill, round shank, L/D=6	J022
TID□□□R□□-8	DrillMeister head exchangeable drill, round shank, L/D=8	J025
TID□□□R□□-12	DrillMeister head exchangeable drill, round shank, L/D=12	J026
TID□□□R06-3	AddMeisterDrill head exchangeable drill, round shank, L/D=3	J011
TID□□□R06-5	AddMeisterDrill head exchangeable drill, round shank, L/D=5	J011
TIDC□□□C□-3	DrillMeister head exchangeable drill, straight flute L/D=3	J017
TIDC□□□C□-5	DrillMeister head exchangeable drill, straight flute L/D=5	J021
TIDC□□□C□□-3	DrillMeister head exchangeable drill, straight flute L/D=3	J017
TIDC□□□C□□-5	DrillMeister head exchangeable drill, straight flute L/D=5	J021
TIDCF□□□-W...	DrillMeister chamfering holder	J027
TIDCF□□□-WU...	DrillMeister chamfering holder	J027
TIDU□□□□F□□□□-1.5	DrillMeister head exchangeable drill, flange type, L/D=1.5	J012
TIDU□□□□F□□□□-3	DrillMeister head exchangeable drill, flange type, L/D=3	J015
TIDU□□□□F□□□□-5	DrillMeister head exchangeable drill, flange type, L/D=5	J019
TIDU□□□□F□□□□-8	DrillMeister head exchangeable drill, flange type, L/D=8	J023
TIS□□□F□□-3	DrillForce-Meister head exchangeable drill L/D=3	J039
TIS□□□F□□-5	DrillForce-Meister head exchangeable drill L/D=5	J041
TIS□□□F□□-8	DrillForce-Meister head exchangeable drill L/D=8	J042
TISU□□□□F□□□□-3	DrillForce-Meister head exchangeable drill L/D=3	J038
TISU□□□□F□□□□-5	DrillForce-Meister head exchangeable drill L/D=5	J040
TOHT□□□□□□R-NDJ	DeepTri-Drill, Tri-Fine insert	J125, J137
TOHT□□□□□□R-NDL	DeepTri-Drill, Tri-Fine insert	J126, J137
TPM□□□ZERD	Drilling insert	J103
TPMP83ZDS	Drilling insert	J103
TPMX□□□□□□R-B	Unidex insert	J164
TPMX□□□□□□R-BG	Unidex insert	J164
TPMX□□□□□□R-DT	Unidex insert	J164
TPMX□□□□□□R-G	Unidex insert	J164
TRLG□□.□□X□□□□-...	DeepTri-Drill for gundrill machines	J119, J120
TRLG□□.□□X□□□□-U04	DeepTri-Drill for gundrill machines	J119
TRLG□□.□□X800-...	DeepTri-Drill for gundrill machines	J119, J120
TRLG29.36X1828-FU31.75	DeepTri-Drill for gundrill machines	J122
TRLG30.00X□□□□-FM40	DeepTri-Drill for gundrill machines	J122
TRLG30.00X1650-FU38.1	DeepTri-Drill for gundrill machines	J122
TRLGCH□□.□□X□□□□-...	DeepTri-Drill for gundrill machines, cross hole	J121
TRM-T□-R□□-1.5	ReamMeister Indexable reamers	J182
TRM-T□-R□□-3	ReamMeister Indexable reamers	J182
TRM-T□-R□□-5	ReamMeister Indexable reamers	J182
TRM-T□-R□□-8	ReamMeister Indexable reamers	J182
TRMU-T□-R□.□□-1.5	ReamMeister Indexable reamers	J182
TRMU-T□-R□.□□-3	ReamMeister Indexable reamers	J182
TRMU-T□-R□.□□-5	ReamMeister Indexable reamers	J182
TRMU-T□-R□.□□-8	ReamMeister Indexable reamers	J182
TRMU-T□-R0.625-1.5	ReamMeister Indexable reamers	J182
TRMU-T□-R0.625-3	ReamMeister Indexable reamers	J182
TRMU-T□-R0.625-5	ReamMeister Indexable reamers	J182
TRMU-T□-R0.625-8	ReamMeister Indexable reamers	J182

U		
UB...	Drill tube for STS, external single thread	J176
UMBB...	Drill tube for MBU, internal single thread	J174
UTE-...	Brazed drill head for STS, external double/quadruple thread	J169

W		
WCMT□□□□□□-D□	Drilling insert	J103
WWMU□□□□□□R-DJ	TungSix-Drill insert	J076, J096
WWMU□□□□□□R-DS	TungSix-Drill insert	J077, J096
XCGT060300-□□DT	DrillMeister chamfering insert	J028
XHGR090300-45A	DrillMeister chamfering insert	J028
XHGR090300-60A	DrillMeister chamfering insert	J028
XHGT090300-30A	DrillMeister chamfering insert	J028
XHGX090700R-45A	Insert for TDXCF chamfering tool	J079, J093
XPMT□□□□□□R-DG	TungDrill-Twisterd, TungDrillBig insert	J089, J101
XPMT□□□□□□R-DJ	TungDrill-Twisterd, TungDrillBig insert	J088, J100
XPMT□□□□□□R-DS	TungDrill-Twisterd, TungDrillBig insert	J088, J100
XPMT□□□□□□R-DW	TungDrill-Twisterd, TungDrillBig insert	J089, J100

Z		
ZSGT060204R-NDJ	DeepTri-Drill insert	J125

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Tungaloy Corporation Head Office
11-1 Yoshima Kogyodanchi
Iwaki 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
tungaloy.com/jp

Iwaki Plant
Products: Cutting Tools

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Tungaloy-NTK America Inc.
3726 N. Ventura Drive
Arlington Heights
IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford
Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C/ Los Arellano 113
Parque Industrial Siglo XXI
Aguascalientes, AGS
Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
tungaloy.com/mx

Tungaloy-NTK do Brasil Ltda.
Avd. Independencia N4158
Residencial Flora
13280-000 Vinhedo
São Paulo, Brazil
Phone: +55-19-38262757
Fax: +55-19-38262757
tungaloy.com/br

Tungaloy-NTK Germany GmbH.
Katzbergstr. 3a
D-40764 Langenfeld, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
tungaloy.com/de

Tungaloy France s.a.s
Les Fjords
19 avenue de Norvège
91140 Villebon Sur Yvette, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
tungaloy.com/fr

Tungaloy Italia S.r.l.
Viale Sarca 336/Edificio 13
20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
tungaloy.com/it

Tungaloy Czech s.r.o
Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
tungaloy.com/cz

Tungaloy Ibérica S.L.
C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
tungaloy.com/es

Tungaloy Scandinavia AB
Bultgatan 38, 442 40
Kungälv, Sweden
Phone: +46-462119200
Fax: +46-462119207
tungaloy.com/se

Tungaloy Rus, LLC
Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
tungaloy.com/ru

Tungaloy Polska Sp. z o.o.
ul. Irysowa 1, 55-040 Bielany
Wrocławskie, Poland
Phone: +48 607 907 237
tungaloy.com/pl

Tungaloy-NTK UK Ltd.
Suite 3, Pioneer House, Mill Street,
Cannock, WS11 0EF, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
tungaloy.com/uk

Tungaloy Hungary Kft
Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
tungaloy.com/hu

Tungaloy Turkey
Serifali Mah.bayraktar
Bulvari Kule Sk. No:26
34775 Umraniye / Istanbul / Turkey
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
tungaloy.com/tr

Tungaloy Benelux b.v.
Tjalk 70
NL-2411 NZ Bodegraven Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
tungaloy.com/nl

Tungaloy Croatia
Ulica bana Josipa Jelačića 87,
10430 Samobor, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
tungaloy.com/hr

Tungaloy Cutting Tool (Shanghai) Co. Ltd.
Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
tungaloy.com/cn

Tungaloy-NTK Cutting Tool (Thailand) Co.,Ltd.
Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok
10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
tungaloy.com/th

Tungaloy Cutting Tools Taiwan Co. Ltd.
9F. No.293, Zhongyang Rd,
Xinzhuang Dist, New Taipei City,
24251 Taiwan
Phone: +886-2-8521-9986
Fax: +886-2-8521-8935
tungaloy.com/tw

Tungaloy Singapore (Pte.), Ltd.
62 Ubi Road 1
#06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
tungaloy.com/sg

Tungaloy-NTK Vietnam LLC
3rd Floor, Licogi 13 Tower, 164 Khuat Duy Tien, Nhan Chinh, Thanh Xuan District, Hanoi, Vietnam
Phone: +84 24 63282086
tungaloy.com/vn

Tungaloy India Pvt. Ltd.
One International Center,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai -400013, India
Phone: +91-22-6124-8803
Fax: +91-22-6124-8899
tungaloy.com/in

Tungaloy Korea Co., Ltd
#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
tungaloy.com/kr

Tungaloy Malaysia Sdn Bhd
50 K-2, Kelana Mall, Jalan
SS6/14, Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
tungaloy.com/my

Tungaloy Australia Pty Ltd
Unit 68 1470 Ferntree Gully Road
Knoxfield 3180 Victoria, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
tungaloy.com/au

PT. Tungaloy Indonesia
Ruko Blok AA.10 No3&5, Grand
Wisata, Lambangjaya, Tambun
Selatan, Bekasi, 17510 Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
tungaloy.com/id



Tungaloy Corporation (Head office)
11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima, 970-1144 Japan
Phone: +81-246-36-8501 Fax: +81-246-36-8542
tungaloy.com

Tungaloy-NTK America Inc.
3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394 Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779 Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C Los Arellano 113, Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone:+52-449-929-5410 Fax:+52-449-929-5411
tungaloy.com/mx

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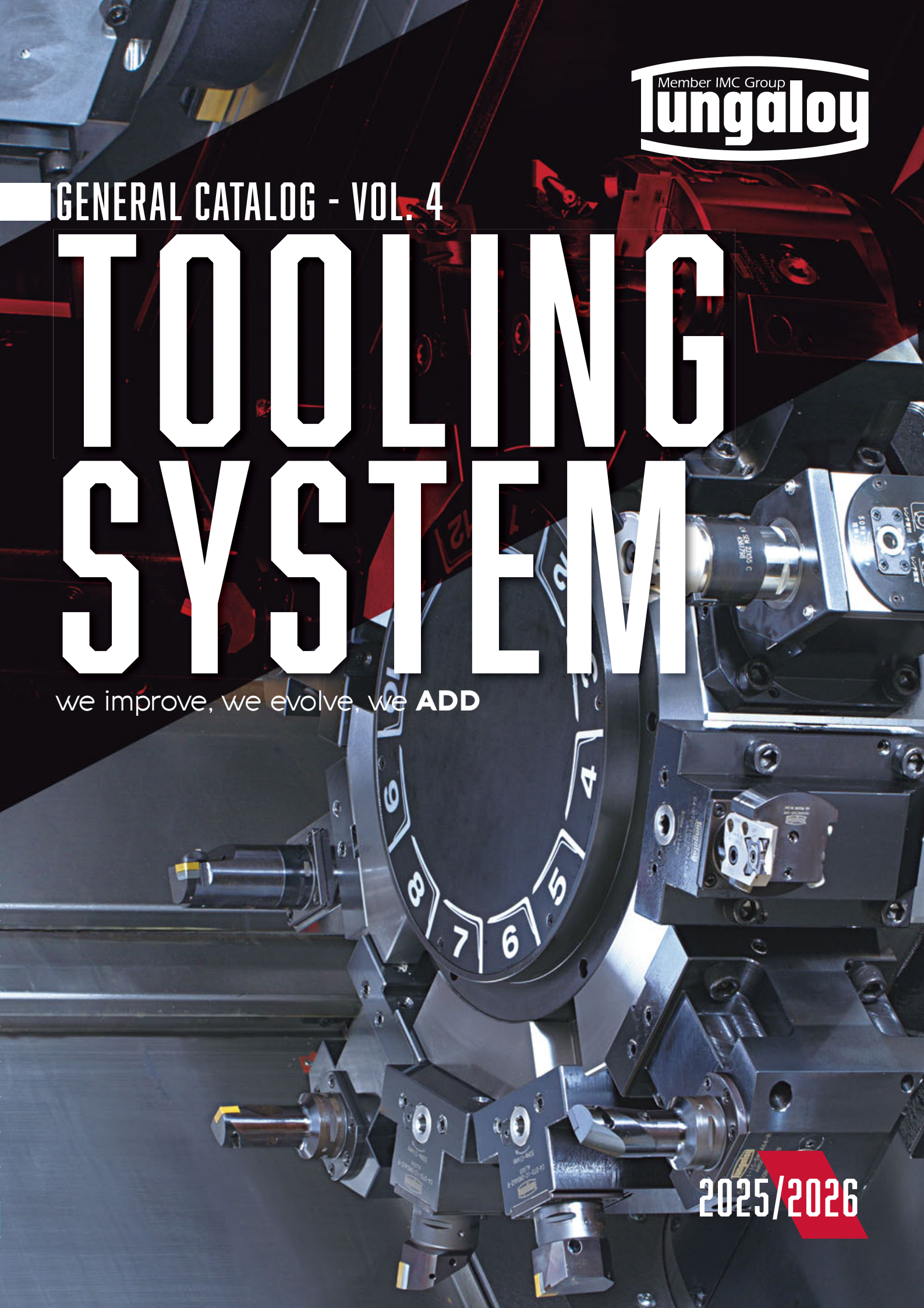
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GENERAL CATALOG - VOL. 4

TOOLING SYSTEM

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2025/2026



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VOL. 4

TOOLING SYSTEM

A Grade A001 -

B Insert B001 -

C External Toolholder C001 -

D Internal Toolholder D001 -

E Threading Tool E001 -

F Parting, Grooving F001 -

G Miniature Machining G001 -

H Milling Cutter H001 -

I Endmill I001 -

J Drilling Tool J001 -

K Tooling System K001 -

L User's Guide L001 -

M Alphanumeric Index M001 -

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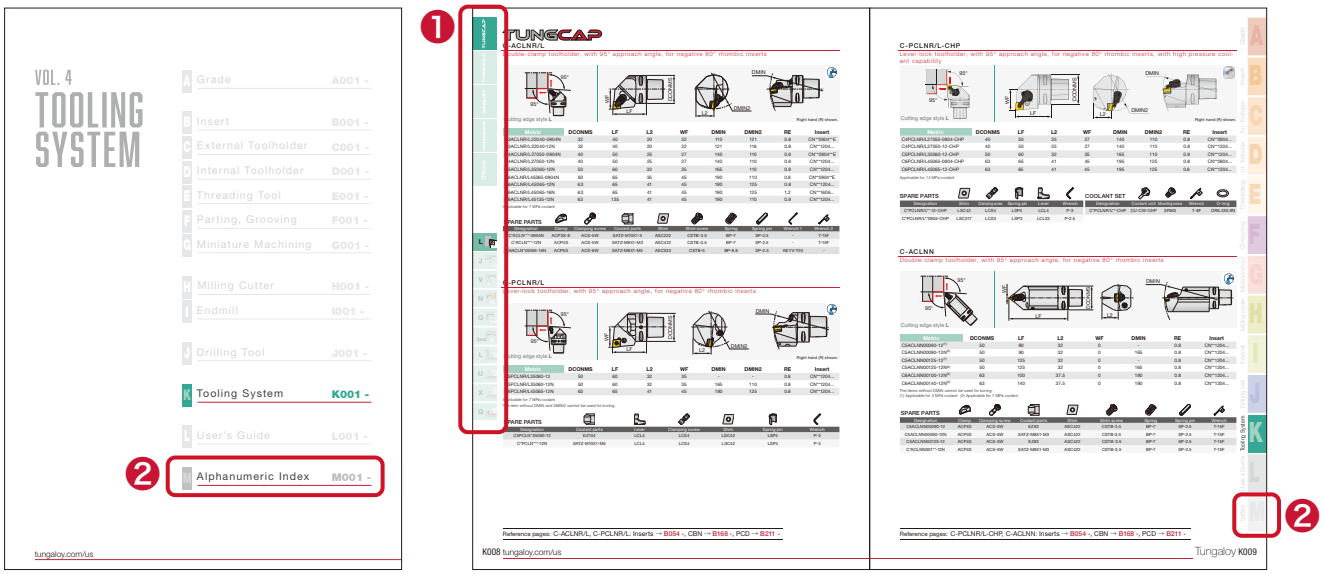
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★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in inch (in) and millimeters (mm) where applicable.

★ For indexable tools, such as toolholders, cutters, drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:



❶ Select the tool type from the application index on the left pages.

❷ The index is in alphanumerical order. Use it for your product search.

How to read the list for the standard items:

★ Designations for tooling products - TungCap toolholders, colletchuck holders, etc.

· Orders are to be received for the tools with the designations in the catalog.

· For the tool with right- and left-hand options, the designation includes **R/L** as shown below.

Ex. 1: Designation: C4PDUN**R/L**17080-11

You can order both right- and left-hand tools. C4PDUN**R**17080-11 (a right-hand tool) and C4PDUN**L**17080-11 (a left-hand tool) will be available.

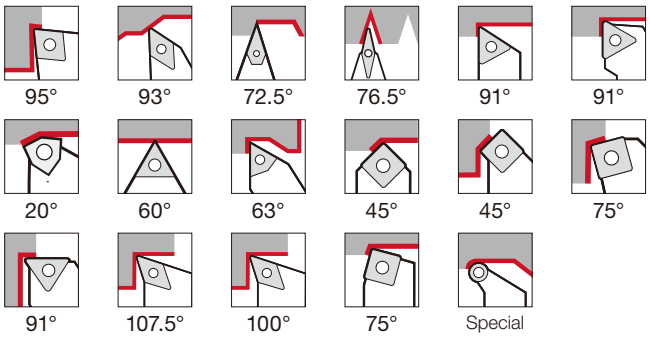
Ex. 2: Designation: C3SDXX**R**13080-07

You can order only right-hand tools. Please contact us when you need left-hand tools.

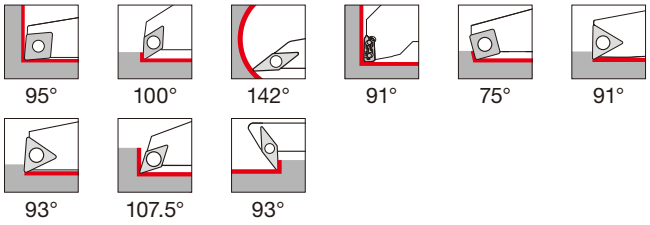
About Tungaloy Cutting Tool Catalog

Icons at the left side of each page

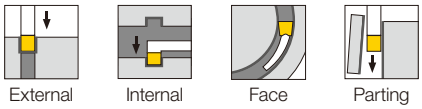
External toolholder (cutting edge shape / angle)



Internal toolholder (cutting edge shape / angle)



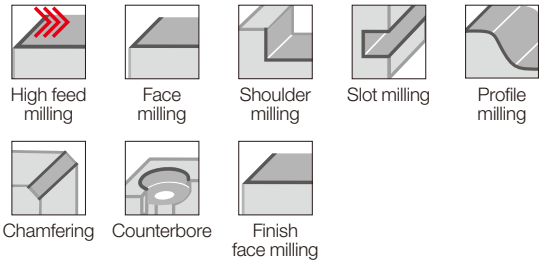
Parting, Grooving



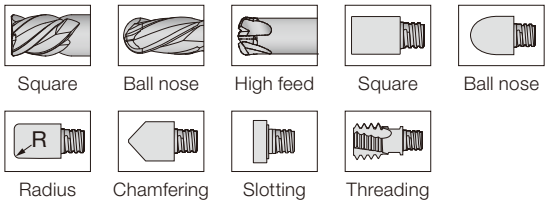
Miniature machining



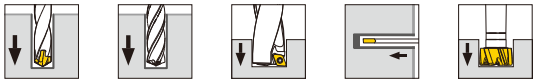
Mill



Endmill

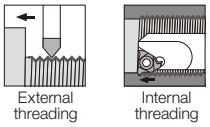


Drill

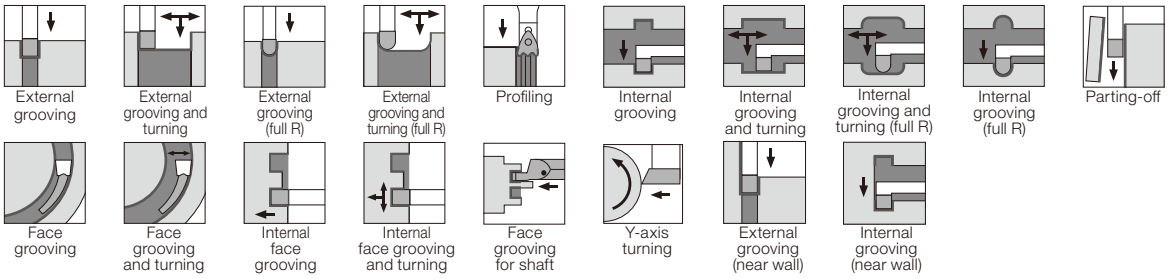


Icons for applications of each product

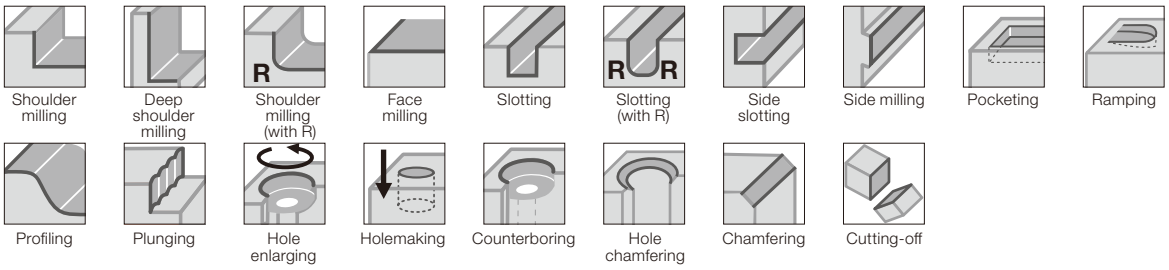
Threading



Grooving



Milling



Drilling



About the dimension symbols conforming to ISO13399

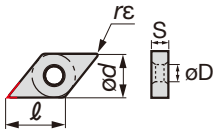
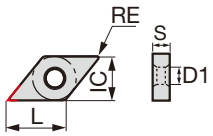
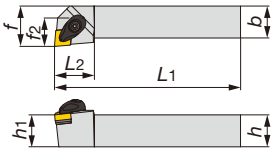
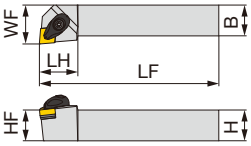
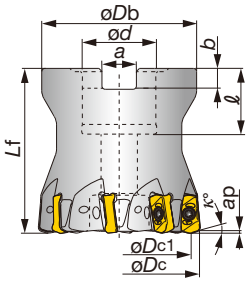
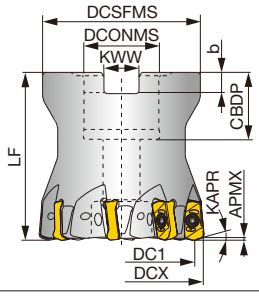
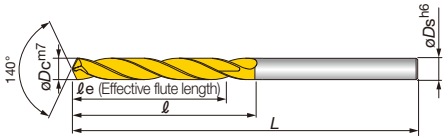
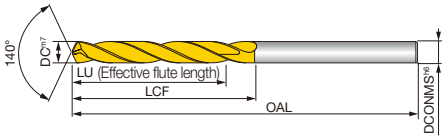
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard.
Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition to General Catalog (paper catalog), we are also updating the symbols in e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. *ap*	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	*ød*1	Mounting hole diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DMIN	*øDm*	Minimum machining diameter
EPSR	-	Nose angle
GAN	-	Rake angle (insert)
IC	*ød*	Inscribed circle diameter
INSD	A	Insert diameter (round type)
INSL	B	Insert length
KAPR	κ	Approach angle
LBB	-	Chipbreaker width
LE	A	Effective cutting edge length
LF	*L*1	Standard length
M	m	Distance from inscribed circle to cutting edge (m dimension)
PDX	t	Thread position (X direction)
PDY	*ℓ*3	Thread position (Y direction)
PNA	*θ*	Cutting edge angle
PSIRL	*θ*	Left-hand front cutting edge angle
PSIRR	*θ*	Right-hand front cutting edge angle
RE	*r*	Corner radius
S	T	Thickness
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	*øD*1, *øD*2, *øD*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	*øD*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	*øD*m	Minimum diameter in face grooving
DAXX	*øD*max	Maximum diameter in face grooving
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød*2	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	*θ*	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	*β*	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

About the dimension symbols conforming to ISO13399

Tooling system

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
BTED	*ød1*	Taper tip diameter
CRKS	S	Mounting screw size
DBC	*ød3*	Bolt hole pitch diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α, R.R.	Radial rake angle
GAMP	*θ*, A.R.	Axial rake angle
KAPR	κ	Cutting edge angle
LB	*L2*, *L3*	Body length
LF	*L*	Standard length
LPR	*L1*	Parting length
LS	*ℓs*	Shank length
LSC	*Lmin*	Clamp length
LSCX	*Lmax*	Maximum clamp length
OAH	H4	Overall height
OAL	*L*	Overall length
OAW	*W*	Overall width
THID	-	Mounting screw size
WB	*W*	Body width
WF	*f*	Standard width

Drilling

New symbol	Old symbol	Description
BD	*øD1*, *øD2*, *øD3*	Body external diameter
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CRKS	*S*	Mounting screw size
DC	*øDc*	Machining diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øD*	Connecting part diameter
KAPR	κ	Cutting edge angle
LCF	*ℓ*	Flute length
LF	*Lf*	Standard length (from the drill shoulder)
LPR	-	Parting length (from flange to tip)
LS	*ℓs*	Shank length
LU	*ℓ*	Machinable depth
NOF	z	Number of flutes
OAL	*L*	Overall length (from tip)
PL	PL	Distance from drill tip to shoulder
ZEFP	Z eff	Number of effective cutting edges on periphery

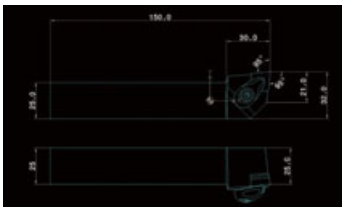
Milling

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
CBDP	*ℓ*	Mounting hole depth
CDX	Max. *ae*	Maximum slot width
CHW	k	Chamfer width on the corner
CICT	z	Number of inserts
CRKS	S	Mounting screw size
CW	W	Slotting edge width
CWN	-	Minimum slotting edge width
CWX	-	Maximum slotting edge width
DBC	*ød3*	Bolt hole pitch diameter
DC	*øDc*	Machining diameter
DCONMS	*ød*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øDb*	Mounting surface diameter on the machine
DCX	*øDc1*	Maximum machining diameter
GAMF	R.R.	Radial rake angle
GAMP	A.R.	Axial rake angle
H	T	Width across flat
KAPR	κ	Cutting edge angle
KWW	*a*	Drive key width
LF	*Lf*	Standard length
LH	*Lf*	Neck length
LS	*ℓs*	Shank length
NOF	z	Number of flutes
OAL	*L*, *L6*	Overall length
PDX	*t*	Thread position (X direction)
PNA	*θ*	Cutting edge angle
PSIR	*β*	Lead angle
RMPX	*θ*	Maximum ramping angle
THUB	T	Hub height (slot mill)
WT	Kg	Weight
ZEFP	Z eff	Number of effective cutting edges on the periphery

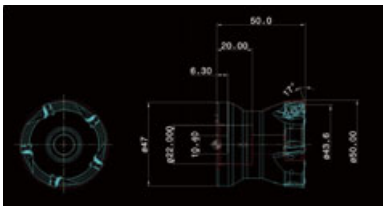
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● 2D data (DXF format file)



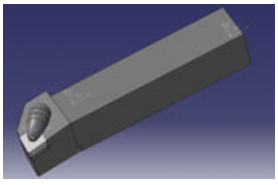
Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● 3D data Light type (STP format file): Can be used to check tool path and interference.

Turning: Equipped with an insert with a standard corner radius.

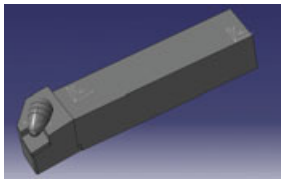


Milling: A rotating body model of an actual cutting edge curve and a body cross section.



● 3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on CAD software.)

Turning



Milling



Tooling System



Tooling System - Content structure

Products are listed by series.
Please refer the table of contents.
Tooling items in the catalog are our standard items.

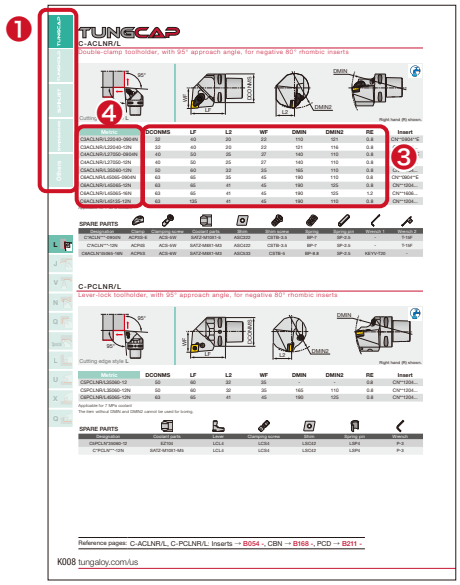
How to use the page

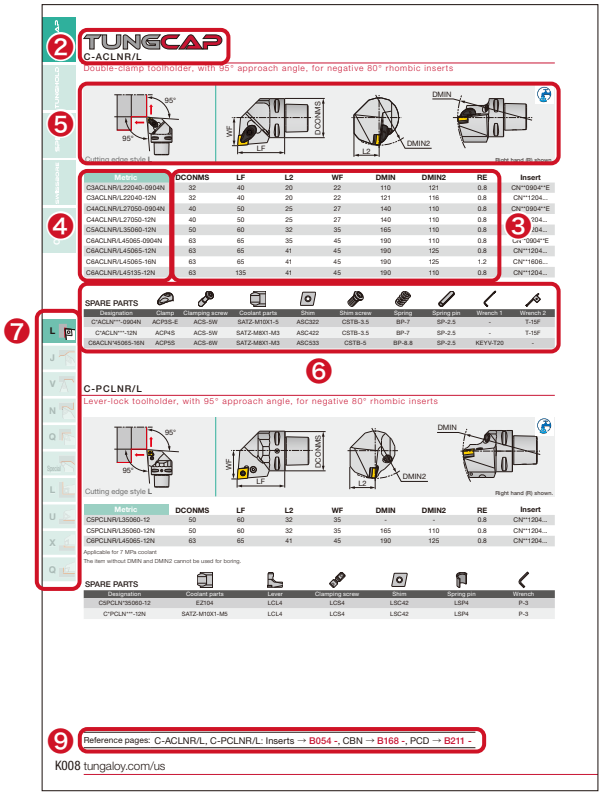
Method 1.

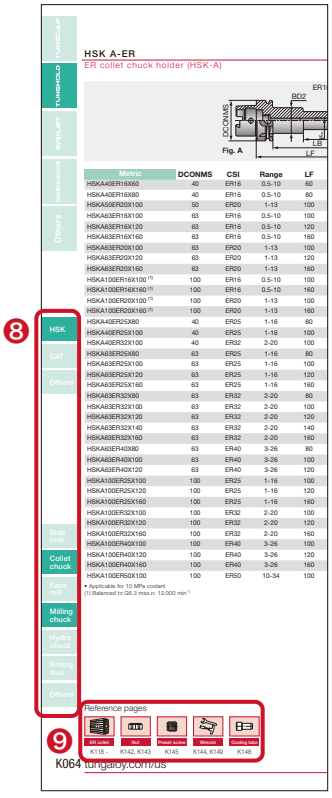
Select the series name (❶) described at the left end of each page and choose a designation you need (❹) in the dimension table (❸).

Method 2.

Select the series name on K003 and check the details on the product page.







❶ Name of the series
❷ Series name and item
❸ Dimension
❹ Designation
❺ Dimension drawing (conforming to ISO13399)
❻ Spare parts
❼ Cutting edge shape
❽ Holder type
❾ Reference pages

When ordering

- Please specify the designation and quantity.
  e.g. Chuck: **CAT40ER32X4.000** ... 1 (one chuck per package)
  Collet: **ER32SPR6-7AA** ... 1 (one collet per package)
  *The designation in the catalog may be described with spaces. Please remove such spaces.
  *Inserts are sold separately.

Tooling System

Inch Metric



TUNGCAP

Quick change system with polygon PSC coupling tooling

K004 -



TUNGHOLD

Tooling system for holders with unique functions in wide varieties

HSK A/E **K063 -** CAT **K085 -**

K063 -



SPINJET

Coolant-driven high speed compact spindle

K151 -



SWISSBORE

Fine boring head system
High accuracy diameter adjustment mechanism with no backlash
Easy-to-read digital display window

K160 -

Other tooling system

FixedTorqueWrench **K158 -**

K158 -

Tool management system



MATRIX

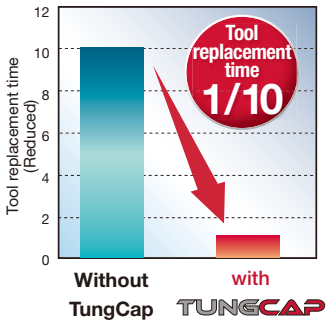
Total management of tools simplifies inventory control

K174 -

TUNGCAP

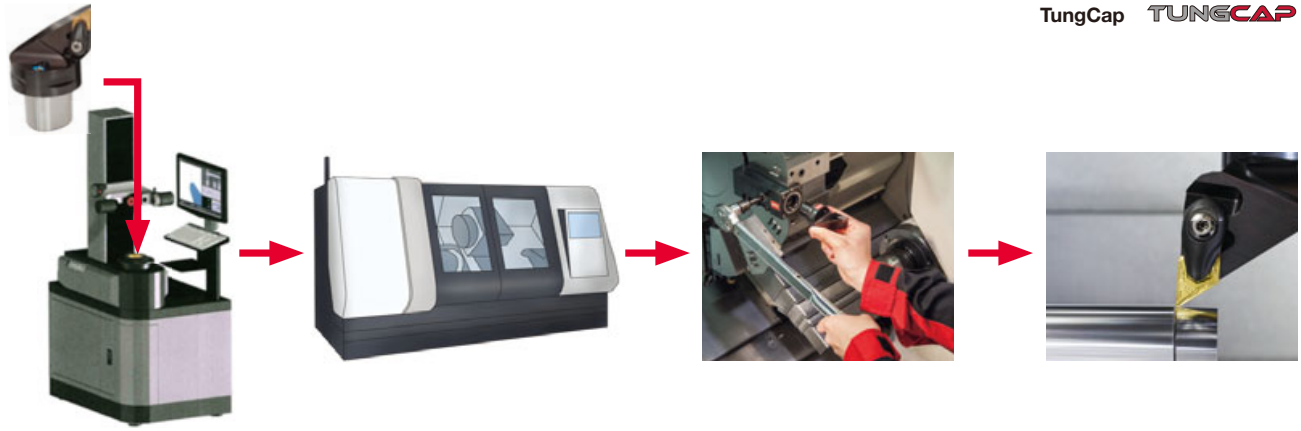


Productivity increases when used on CNC turret lathes / turning centers



Reduce downtime in your machine

- Short setup time - no tool adjustment required on the machine
- Once adjusted outside the machine, high precision



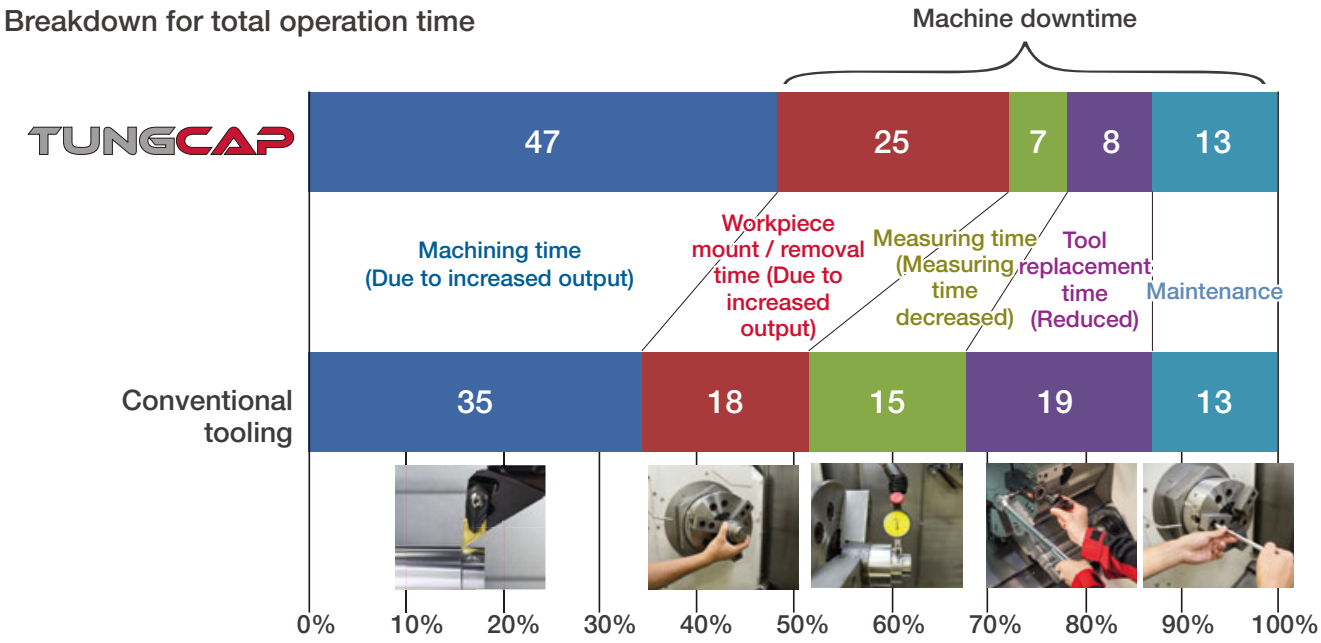
Measurement outside the machine

Input measured data

Short tool change time

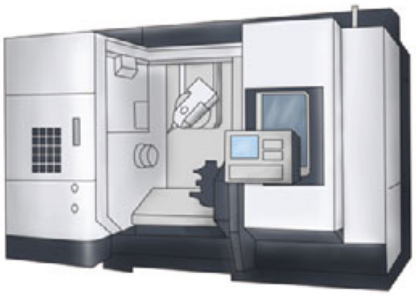
High precision in simple process

Reference pages: K006 - K062



Toolings for multi-tasking machine

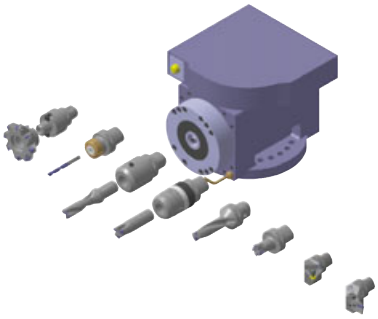
A multi-tasking machine is a combination of a turning center and a machining center, which allows a workpiece to be completed in a single machine setup.
TungCap offers a complete range of efficient tooling solutions in such a highly advanced machine-tool.



Easy tool management

Suitable for a wide range of applications

- TungCap modular system enhances tooling flexibility in a wide range of applications, without compromising other interface adapters
- Adaptors for HSK and dual-contact BT taper are also available



Ideal tooling

An optimized overhang length can be set with an extension or reduction holder



Cutting heads for a B-axis locked at 45° in multi-tasking machines

A large radial stroke is possible for B-axis
Heavy-duty machining is possible due to diverse cutting force
No interference in machining corner radii



TungCap Tooling

TUNGCAP

Turning tools

CN**1204
CN**0904

C*PCLNR/L*****-**-CHP K009
C*PCLNR/L*****-12N K008
C*ACLNR/L*****-**N K008
C6PCMNN**-CHP K018
C*ACLNN00***-**N K009

TN**1604
TN**1104

C*A/PTJNR/L**-**N K013
C*ACMNN00***-**N K018
WN**0804
WN**0604
C*PWLNR/L*****-**-CHP K010
C*AWLNR/L*****-**N K010

DN**1504
(DN**1506)

C*PDJNR/L*****-**-CHP K012
C*PDJNR/L*****-15N K012
C*ADJNR/L*****-**N K011
C6PDMNL**-CHP K019
C*ADNNN00***-15N K016

VN**1604

C*PVJNR/L*****-16-CHP K014
C*AVJNR/L*****-16N K014
VC**1604**
C*SVJCR/L*****-16N K015
C*SVVCN00***-16N K016

Cutting head for external turning & facing

DN**1104

C4PDUNR/L*****-11 K025
DN**1504
C*ADUNR/L*****-15 K025
CN**1204
CN**0904
C4PCLNR/L*****-** K024

WXGU0403**L

MINIFTURN
C*SWLXR**-04 K025
DXGU0703**L
MINIFTURN
C*SDXXR**-07 K026
VB**1103
VB**1604
C*SVQBR**-11/16 K027

Boring bar
Sleeve SC****** K028
Boring bar Adaptor
C*ABB**-** K027
C*ADI** K029

DRILLMEISTER
TUNGDRILL
TUNGSIX-DRILL
Side-lock holder (For weldon-shank) C*EM**X** K039
Side-lock holder (For whistle-notch shank) C*EM**X**E K040
TungDrillTwisted
C*TDX***L***-3 K037

Cutting head for internal turning

DGS, SGS, DGM, SGM, DTX, DTE, DGG, DTR, SGN

16ER/L***
C*CER/L*****-16ERN K030

Cutting head for threading

Blade
Adaptor for parting-off blade K037
TUNGCUT
C*CHSR/L*****N K033
TUNGCUT
C*CHFVR/L*****N K033
C*CHSN**-CHP K035
C*CHFVN**-CHP K035

Cutting head for grooving

Toolholder for external turning

C*ADES-20 K022
C*ASHR/L*** K022
C*ASHR/L**-45 K023
C*ASHA** K021
C*ADE-**R/L K021
C*ASHA-HPMC K021
C*ASHR/L-HPMC K022
C*ASHR/L-45-HPMC K023

Adaptor for toolholder with square shank

Please see page K*** for the product details.

System for Multi-Tasking Machine

TOOLING SYSTEM

e-catalog

See more information

Tool spindle





Extension adaptor

C*EX-***

K053



Reduction adaptor

C*-C*RE-***

K054

Rotating tools

Endmill holder



C*MAXIN**X***

K046

Straight collet for endmill holder



SC******* K047



Side-lock holder (For weldon-shank)



C*EM**X**

K039



Side-lock holder (For whistle-notch shank)



C*EM**X**E

K040

ER-collet chuck holder



C*ER**X*** K041

C*ER**X***M K042

ER-collet



ER****** K118 -



Collet chuck holder with adjusting alignment

TUNGFINE



ADJC*ER32

K042

ER-collet



ER****** K118 -



Shrink holder

TUNGSHRINK



C*SRKIN*X**

K050



TungDrillTwisted



C*TDX***L***-3

K037

Digital fine boring

SWISSBORE



K056 -

Arbor for shell mill



C*SEM**X**C

K044



Arbor for slot mill



C*SCA**

K051



Holder for modular tool

TUNGFLEX



C*ODP**X** K045



High speed spindle

SPINJET



K151 -



Multi clamp

MULTICLAMPC*

K054



Clamping unit for machines

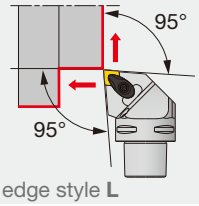
K059

Please see page K*** for the product details.

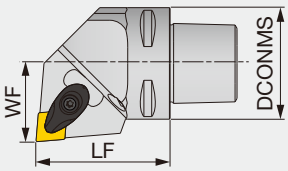
TUNGCAP

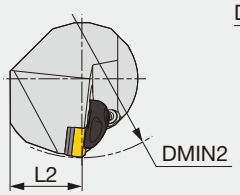
C-ACLNR/L

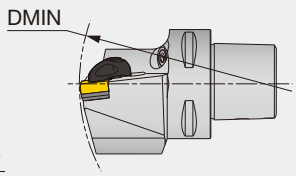
Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ACLNR/L22040-0904N	32	40	20	22	110	121	0.8	CN**0904**E
C3ACLNR/L22040-12N	32	40	20	22	121	116	0.8	CN**1204...
C4ACLNR/L27050-0904N	40	50	25	27	140	110	0.8	CN**0904**E
C4ACLNR/L27050-12N	40	50	25	27	140	110	0.8	CN**1204...
C5ACLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6ACLNR/L45065-0904N	63	65	35	45	190	110	0.8	CN**0904**E
C6ACLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...
C6ACLNR/L45065-16N	63	65	41	45	190	125	1.2	CN**1606...
C6ACLNR/L45135-12N	63	135	41	45	190	110	0.8	CN**1204...

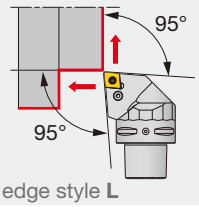
Applicable for 7 MPa coolant

SPARE PARTS

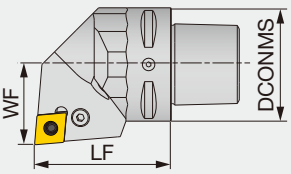
Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C*ACLN***-0904N	ACP3S-E	ACS-5W	SATZ-M10X1-5	ASC322	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C*ACLN***-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C6ACLN*45065-16N	ACP5S	ACS-6W	SATZ-M8X1-M3	ASC533	CSTB-5	BP-8.8	SP-2.5	KEYV-T20	-

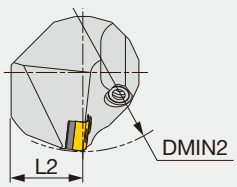
C-PCLNR/L

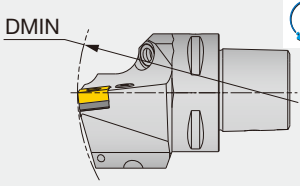
Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PCLNR/L35060-12	50	60	32	35	-	-	0.8	CN**1204...
C5PCLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...

Applicable for 7 MPa coolant

The item without DMIN and DMIN2 cannot be used for boring.

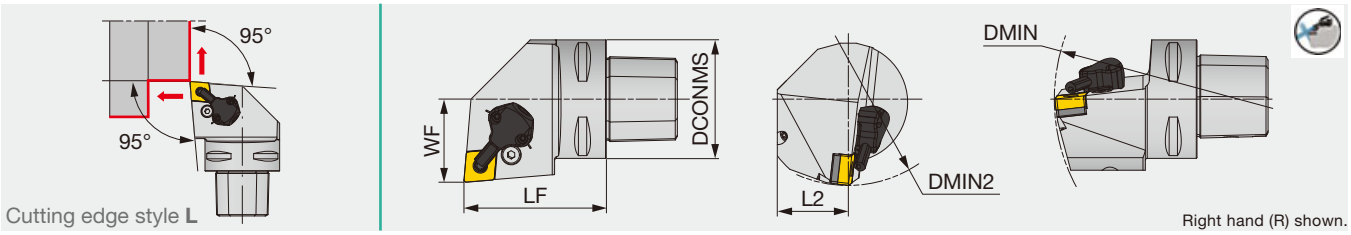
SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Shim	Spring pin	Wrench
C5PCLN*35060-12	EZ104	LCL4	LCS4	LSC42	LSP4	P-3
C*PCLN***-12N	SATZ-M10X1-M5	LCL4	LCS4	LSC42	LSP4	P-3

Reference pages: C-ACLNR/L, C-PCLNR/L: Inserts → B054 -, CBN → B168 -, PCD → B211 -

C-PCLNR/L-CHP

Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**1204...
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-0904-CHP	63	65	41	45	195	125	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	41	45	195	125	0.8	CN**1204...

Applicable for 14 MPa coolant

SPARE PARTS

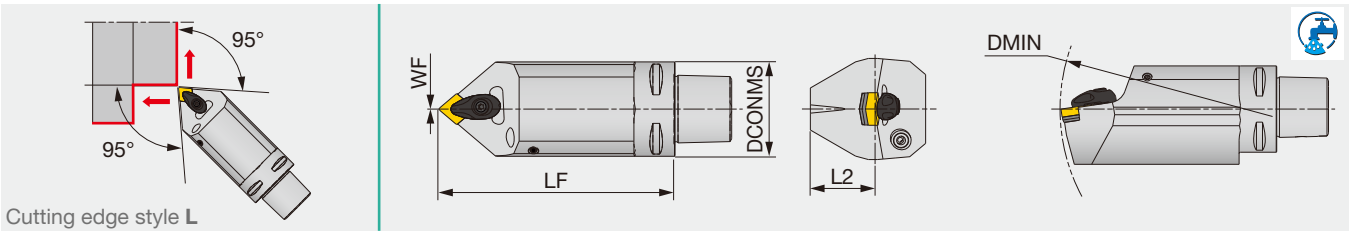
Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PCLNR/L**-12-CHP	LSC42	LCS4	LSP4	LCL4	P-3
C*PCLNR/L**0904-CHP	LSC317	LCS3	LSP3	LCL33	P-2.5

COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

C-ACLNN

Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ACLNN00090-12(1)	50	90	32	0	-	0.8	CN**1204...
C5ACLNN00090-12N(2)	50	90	32	0	165	0.8	CN**1204...
C5ACLNN00125-12(1)	50	125	32	0	-	0.8	CN**1204...
C5ACLNN00125-12N(2)	50	125	32	0	165	0.8	CN**1204...
C6ACLNN00100-12N(2)	63	100	37.5	0	190	0.8	CN**1204...
C6ACLNN00140-12N(2)	63	140	37.5	0	190	0.8	CN**1204...

The items without DMIN cannot be used for boring.
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

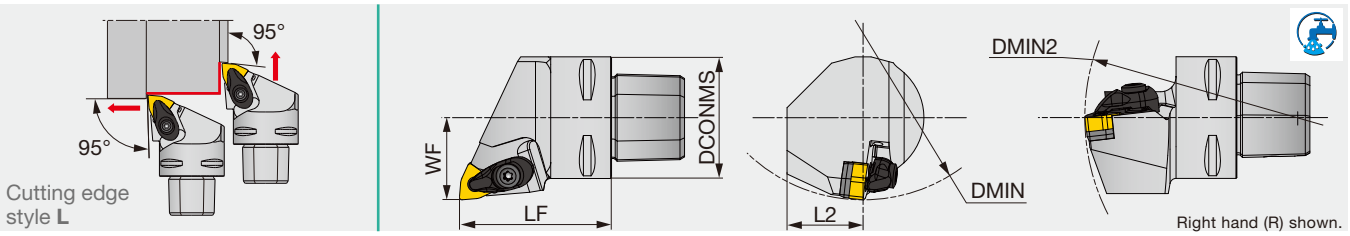
Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ACLNN00090-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00090-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00125-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C*ACLNN001**-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

Reference pages: C-PCLNR/L-CHP, C-ACLNN: Inserts → B054 -, CBN → B168 -, PCD → B211 -

TUNGCAP

C-AWLNR/L

Double-clamp toolholder, with 95° approach angle, for negative 80° trigon inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3AWLNR/L22045-0604N	32	45	20	22	140	120	0.8	WN**0604...
C3AWLNR/L22045-08N	32	45	20	22	110	170	0.8	WN**0804...
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...
C4AWLNR/L27050-08N	40	50	25	27	-	-	0.8	WN**0804...
C6AWLNR/L45065-08N	63	65	35	45	190	110	0.8	WN**0804...

Applicable for 7 MPa coolant

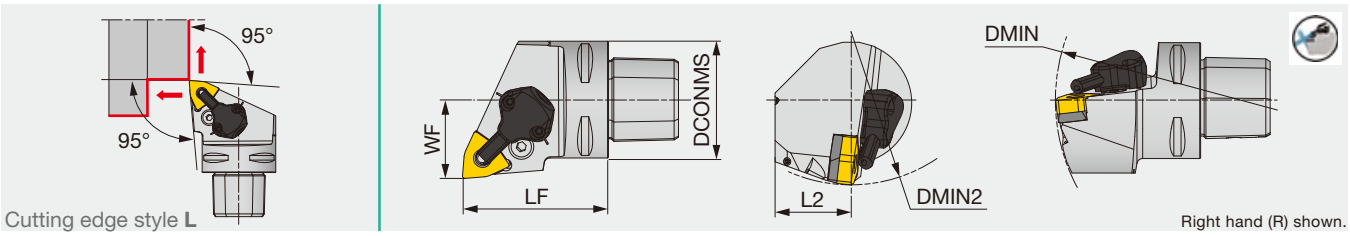
The items without DMIN and DMIN2 cannot be used for boring.

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C-AWLNR/L	ACP4S	ACS-5W	ASW422	CSTB-3.5	BP-7	SP-2.5	T-15F

C-PWLNR/L-CHP

Lever-lock toolholder, for negative 80° trigon inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	125	0.8	WN**0804...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	LSP4	LCL4	P-3
C*PWLNR/L**0604-CHP	LSW312	LCS3	LSP3	LCL3	P-2.5

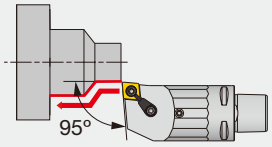
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

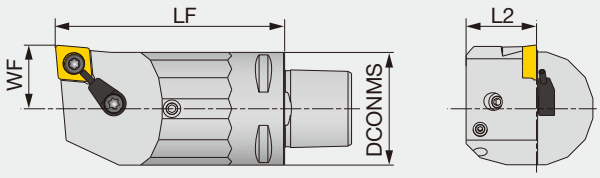
Reference pages: C-AWLNR/L, C-PWLNR/L-CHP: Inserts → B102 -, CBN → B187

C-SCLCL-CHP

Screw-on toolholder, with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SCLCL18040-09-CHP	32	40	20	18	0.8	CC**09T3...
C3SCLCL18065-09-CHP	32	65	20	18	0.8	CC**09T3...

Applicable for 14 MPa coolant
Cannot be used for boring

SPARE PARTS

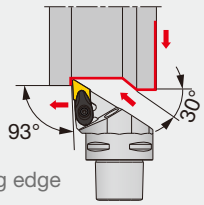




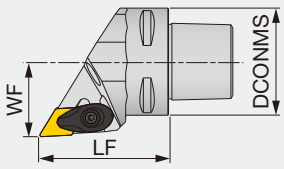
Designation	Clamping screw	Coolant unit	Wrench
C3SCLCL...	CSTB-4S	S-CU-CHP	T-15F

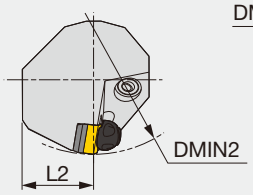
C-ADJNR/L

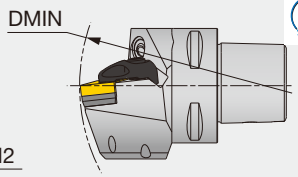
Double-clamp toolholder, with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADJNR/L22045-1104N	32	45	20	22	121	85	0.8	DN**1104...
C3ADJNR/L22050-1104N	32	50	20	22	121	85	0.8	DN**1104...
C3ADJNR/L22050-15N	32	50	20	22	121	85	0.8	DN**1504(06)
C4ADJNR/L27050-1104N	40	50	25	27	145	110	0.8	DN**1104...
C4ADJNR/L27050-15N	40	50	25	27	145	110	0.8	DN**1504(06)
C5ADJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**1504(06)
C6ADJNR/L45065-1104N	63	65	35	45	190	110	0.8	DN**1104...
C6ADJNR/L45065-15N	63	65	41	45	190	110	0.8	DN**1504(06)
C6ADJNR/L45135-15N	63	135	41	45	190	110	0.8	DN**1504(06)

Applicable for 7 MPa coolant

SPARE PARTS










Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C3ADJNR/L**-1104N	ACP3S-E	ACS-5W	-	ASD322	CSTB-3.5	BP-7	SP-2.5	T-15F
C3ADJNR/L**-15N	ACP4S	ACS-5W	-	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C4ADJNR/L**-1104N	ACP3S-E	ACS-5W	SATZ-M10X1-M5	ASD322	CSTB-3.5	BP-7	SP-2.5	T-15F
C4ADJNR/L**-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

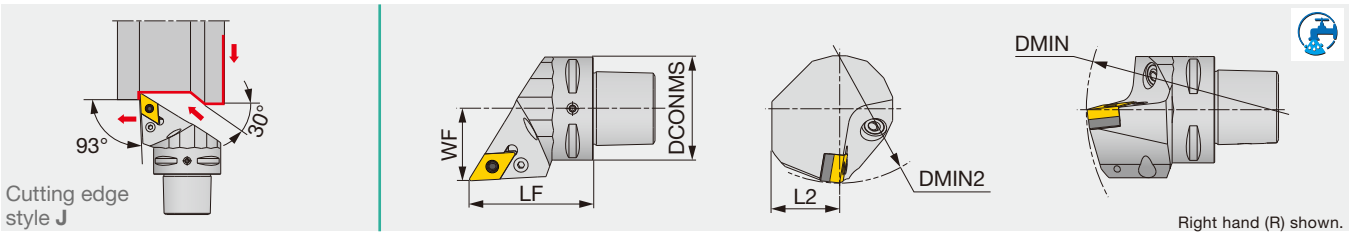
Option: ASD423 (Shim for DN**1506**)

Reference pages: C-SCLCL-CHP: Inserts → B112 -, CBN → B191, PCD → B213
C-ADJNR/L: Inserts → B066 -, CBN → B172 - , PCD → B211

TUNGCAP

C-PDJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 55° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PDJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**1504(06)
C6PDJNR/L45065-15N	63	65	41	45	195	95	0.8	DN**1504(06)

Applicable for 7 MPa coolant

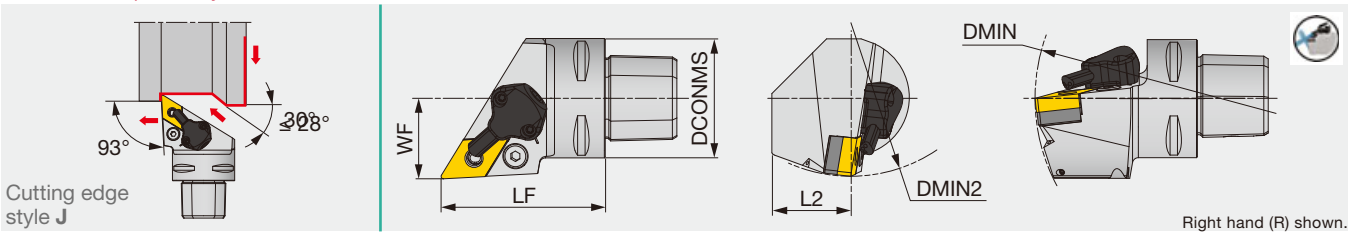
SPARE PARTS

Designation	Coolant parts	Shim	Lever	Clamping screw	Spring pin	Wrench
C5PDJN*35060-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4	P-3
C6PDJN*45065-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4S	P-3

Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

C-PDJNR/L-CHP

Lever-lock toolholder, with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PDJNR/L27055-1104-CHP	40	55	27	27	145	110	0.8	DN**1104...
C4PDJNR/L27055-15-CHP	40	55	27	27	145	110	0.8	DN**1504(06)...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504(06)...
C6PDJNR/L45065-1104-CHP	63	65	35	45	195	95	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	35	45	195	95	0.8	DN**1504(06)...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PDJNR/L**-15-CHP	LSD43A	LCS4	LSP4	LCL4	P-3
C*PDJNR/L**1104-CHP	ELSD32	LCS3	LSP3	LCL33L	P-2.5

COOLANT SET

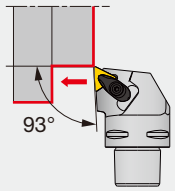
Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PDJLNR/L**-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

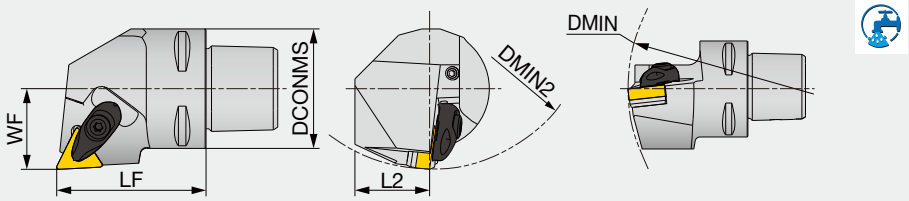
Reference pages: C-PDJNR/L, C-PDJNR/L-CHP: Inserts → B066 -, CBN → B172 - , PCD → B211

C-ATJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ATJNR/L22040-16N	32	40	20	22	200	140	0.8	TN**1604...
C4ATJNR/L27050-16N	40	50	25	27	140	110	0.8	TN**1604...

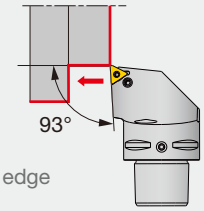
Applicable for 7 MPa coolant

SPARE PARTS

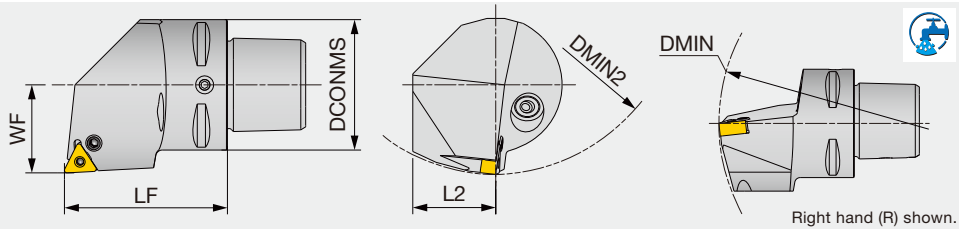
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C*ATJNR/L...	ACP3S	ACS-5W	AST322	CSTB-3.5	BP-7	SP-2.5	T-15F

C-PTJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104**E

Applicable for 7 MPa coolant

SPARE PARTS

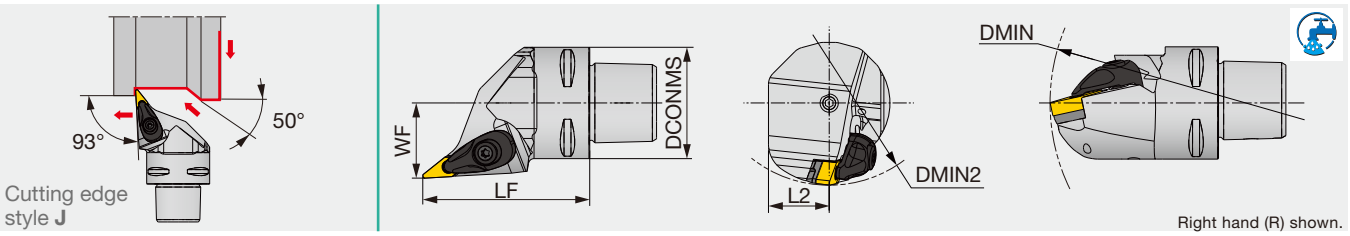
Designation	Coolant parts	Lever	Clamping screw	Wrench
C4PTJNR/L27050-1104N	SATZ-M8X1-M3	LCL23	LCS23A	P-2.5

Reference pages: C-ATJNR/L: Inserts → B087 -, CBN → B182 -, PCD → B212 -
C-PTJNR/L: Inserts → B087 -

TUNGCAP

C-AVJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 35°/25° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3AVJNR/L22050-1204N	32	50	20	22	121	70	0.8	VN**1204...
C4AVJNR/L27060-1204N	40	60	20	27	140	55	0.8	VN**1204...
C4AVJNR/L27060-16N	40	60	25	27	140	110	0.8	V/YN**1604...
C6AVJNR/L45065-1204N	63	65	31.5	45	190	81	0.8	VN**1204...
C6AVJNR/L45065-16N	63	65	35	45	190	81	0.8	V/YN**1604...

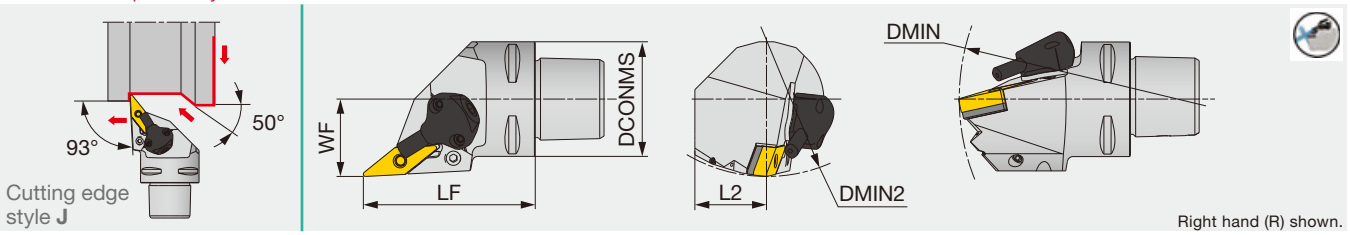
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C3**..., C4AVJ...1204N	ACP3L-E	ACS-5W	-	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C4AVJNR/L27060-16N	ACP3L	ACS-5W	-	ASV322	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C6AVJNR/L45065-1204N	ACP3L-E	ACS-5W	SATZ-M10X1-M5	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C6AVJNR/L45065-16N	ACP3L	ACS-5W	SATZ-M10X1-M5	ASV322	CSTB-3.5	BP-7	SP-2.5	-	T-15F

C-PVJNR/L-CHP

Lever-lock toolholder, with 93° approach angle, for negative 35°/25° rhombic inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PVJNR/L27060-16-CHP	40	60	25	27	140	110	0.8	V/YN**1604...
C6PVJNR/L45065-16-CHP	63	65	32	45	190	81	0.8	V/YN**1604...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C*PVJNR/L...16-CHP	LSV317	LSP3	LCL3V	LCS3V	P-2.5	CU-V-CHP

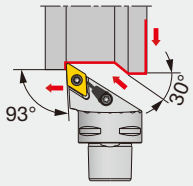
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PVJNR/L...16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

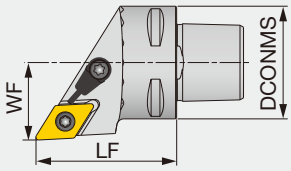
Reference pages: C-AVJNR/L, C-PVJNR/L-CHP: Inserts → B098 -, B110, CBN → B186 - B188, PCD → B212

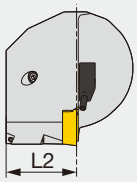
C-SDJCR/L-CHP

Screw-on toolholder, with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SDJCR/L22040-11-CHP	32	40	20	22	0.8	DC**11T3...

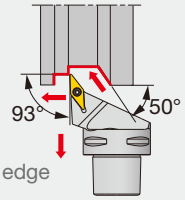
Applicable for 14 MPa coolant
Cannot be used for boring

SPARE PARTS

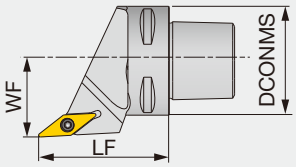
Designation	Clamping screw	Coolant unit	Wrench
C3SDJCR/L22040-11-CHP	CSTB-4S	S-CU-CHP	T-15F

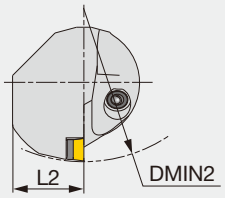
C-SVJCR/L

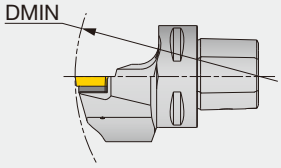
Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3SVJCR/L22040-11N (2)	32	40	20	22	-	-	0.4	VC**1103...
C3SVJCR/L22045-16N	32	45	20	22	-	-	0.8	VC**1604...
C4SVJCR/L27050-16N (2)	40	50	25	27	140	155	0.8	VC**1604...
C5SVJCL35060-16(1)	50	60	32	35	-	-	0.8	VC**1604...
C5SVJCR/L35060-16N(2)	50	60	32	35	170	160	0.8	VC**1604...
C6SVJCR/L45065-16(1)	63	65	41	45	-	-	0.8	VC**1604...
C6SVJCR/L45065-16N(2)	63	65	41	45	170	190	0.8	VC**1604...

• The items without DMIN and DMIN2 cannot be used for boring
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

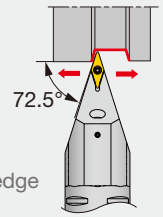
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C3SVJC*22040-11N	CSTB-2.5	SATZ-M8X1-M3	-	-	-	T-8F
C3SVJC*22045-16N	CSTB-3.5L	-	SSV32	DTS5-3.5	P-3.5	T-15F
C4SVJC*27050-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVJC*35060-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVJC*35060-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

Reference pages: C-SDJCR/L-CHP: Inserts → B121 -, CBN → B194 -, PCD → B214 -
C-SVJCR/L: Inserts → B152 -, CBN → B209 -, PCD → B220

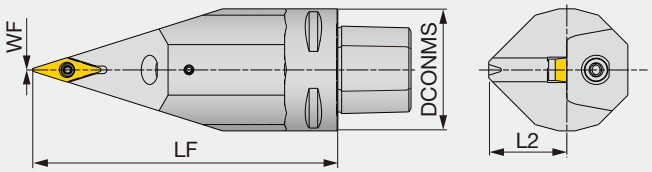
TUNGCAP

C-SVVCN

Screw-on toolholder, with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**



Metric	DCONMS	LF	L2	WF	RE	Insert
C5SVVCN00090-16(1)	50	90	32	0	0.8	VC**1604...
C5SVVCN00090-16N(2)	50	90	32	0	0.8	VC**1604...
C5SVVCN00125-16(1)	50	125	32	0	0.8	VC**1604...
C5SVVCN00125-16N(2)	50	125	32	0	0.8	VC**1604...
C6SVVCN00100-16N(2)	63	100	37.5	0	0.8	VC**1604...
C6SVVCN00140-16N(2)	63	140	37.5	0	0.8	VC**1604...

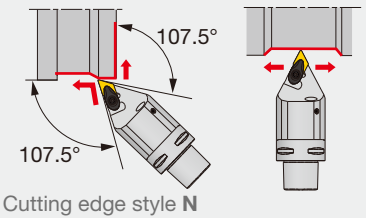
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

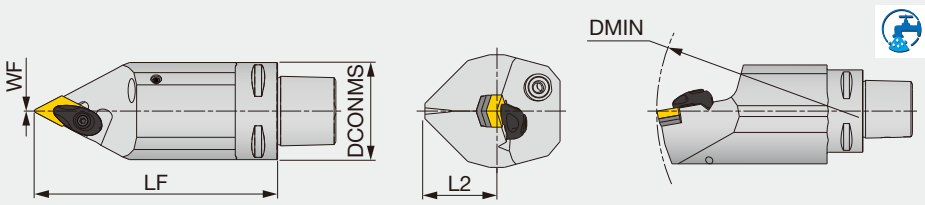
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C5SVVCN00090-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00090-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

C-ADNNN

Double-clamp toolholder, with 63° approach angle, for negative 55° rhombic inserts



Cutting edge style **N**



Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ADNNN00090-15(1)	50	90	32	0	-	0.8	DN**1504(06)
C5ADNNN00090-15N(2)	50	90	32	0	165	0.8	DN**1504(06)
C5ADNNN00125-15(1)	50	125	32	0	-	0.8	DN**1504(06)
C5ADNNN00125-15N(2)	50	125	32	0	165	0.8	DN**1504(06)
C6ADNNN00100-15N(2)	63	100	37.5	0	190	0.8	DN**1504(06)
C6ADNNN00140-15(1)	63	140	37.5	0	-	0.8	DN**1504(06)
C6ADNNN00140-15N(2)	63	140	37.5	0	190	0.8	DN**1504(06)

• The items without DMIN cannot be used for boring
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

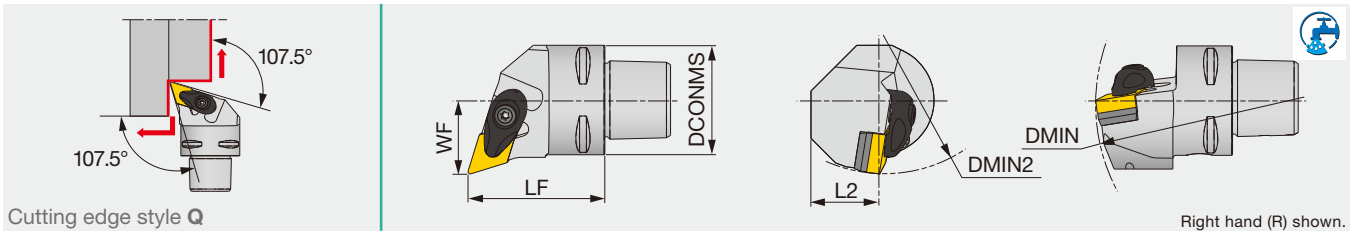
Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ADNNN00090-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00090-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

Reference pages: C-SVVCN: Inserts → B152 -, CBN → B209, PCD → B220
C-ADNNN: Inserts → B066 -, CBN → B172 -, PCD → B211

C-ADQNR/L

Double-clamp toolholder, with 107.5° approach angle, for negative 55° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADQNR/L22040-15N	32	40	20	22	121	85	0.8	DN**1504(06)...
C4ADQNR/L27050-15N	40	50	25	27	145	110	0.8	DN**1504(06)...

Applicable for 7 MPa coolant

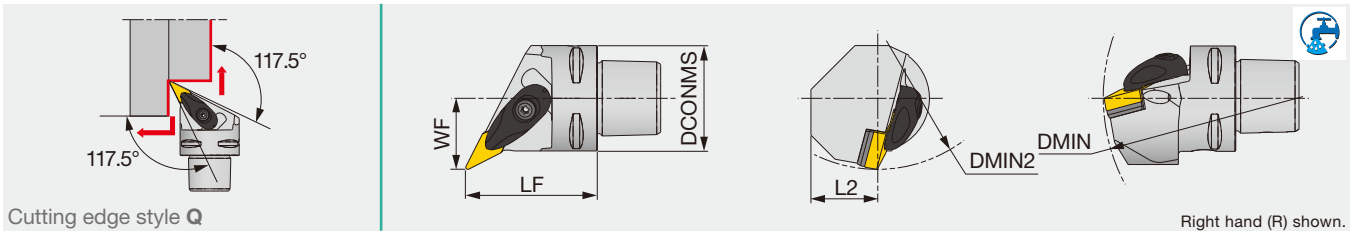
SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADQNR/L...	ACP4S	ACS-5W	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

C-AVQNR/L

Double-clamp toolholder, with 117.5° approach angle, for negative 35°/25° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4AVQNR/L27050-16N	40	50	25	27	145	110	0.8	V/YN**1604...

Applicable for 7 MPa coolant

SPARE PARTS

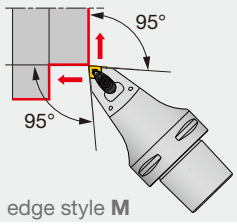
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C4AVQNR/L27050-16N	ACP3L	ACS-5W	ASV322	CSTB-3.5	BP-7	SP-2.5	T-15F

Reference pages: C-ADQNR/L: Inserts → B066 -, CBN → B172 -, PCD → B211
C-AVQNR/L: Inserts → B098 -, B110, CBN → B186 - B188 , PCD → B212

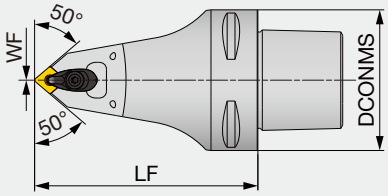
TUNGCAP

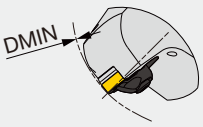
C-ACMNN

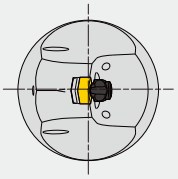
Double-clamp toolholder, with 50° approach angle, for negative 80° rhombic inserts



Cutting edge style **M**







Metric	DCONMS	LF	WF	DMIN	RE	Insert
C6ACMNN00100-0904N	63	100	0	110	0.8	CN**0904**E
C6ACMNN00140-0904N	63	140	0	110	0.8	CN**0904**E
C6ACMNN00100-12N	63	100	0	110	0.8	CN**1204...
C6ACMNN00140-12N	63	140	0	110	0.8	CN**1204...

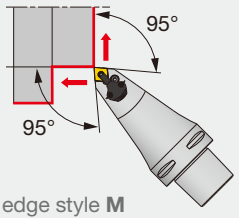
Applicable for 7 MPa coolant

SPARE PARTS

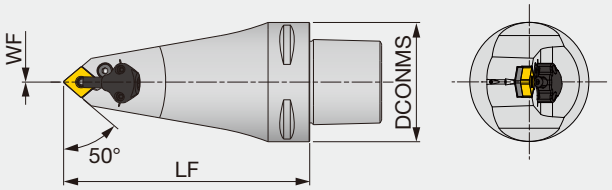
Designation	Clamp	Clamping screw	Shim	Shim screw	Spring	Spring pin	Wrench
C6ACMNN001**-0904N	ACP3S-E	ACS-5W	ASC322	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACMNN001**-12N	ACP4S	ACS-5W	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

C-PCMNN-CHP

Lever-lock toolholder, with 50° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**



Metric	DCONMS	LF	WF	RE	Insert
C6PCMNN00130-12-CHP	63	130	0	0.8	CN**1204...

Applicable for 14 MPa coolant

Cannot be used for boring.

SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C6PCMNN00130-12-CHP	LSC42	LSP4	LCL4	LCS4	P-3	CU-CW-CHP

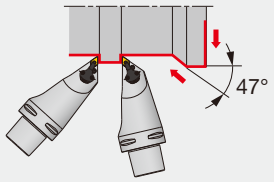
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

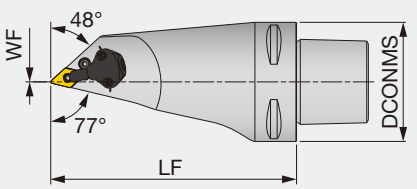
Reference pages: C-ACMNN, C-PCMNN-CHP: Inserts →B054 -, CBN → B168 -, PCD → B211 -

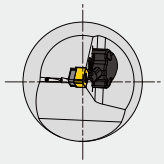
C-PDMNL-CHP

Lever-lock toolholder, with 48° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**





Left hand (L) shown.

Metric	DCONMS	LF	WF	RE	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

Applicable for 14 MPa coolant

Cannot be used for boring

SPARE PARTS

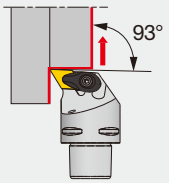
Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C6PDMNL00130-1104-CHP	ELSD32	LSP3	LCL33L	LCS3	P-2.5	CU-D-CHP

COOLANT SET

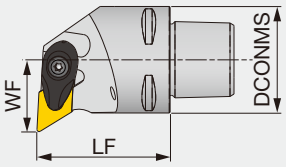
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

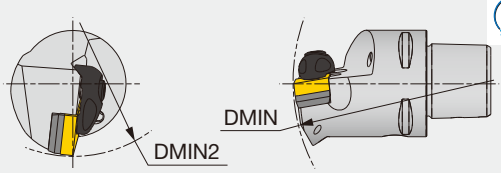
C-ADUNR/L

Double-clamp toolholder, with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4ADUNR/L27050-15N	40	50	-	27	140	110	0.8	DN**1504(06)...

Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C4ADUNR/L27050-15N	ACP4S	ACS-5W	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

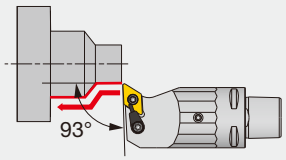
Option: ASD423 (Shim for DN**1506**)

Reference pages: C-PDMNL-CHP: Inserts → B066 -, CBN → B172
C-ADUNR/L: Inserts → B066 -, CBN → B172 - , PCD → B211

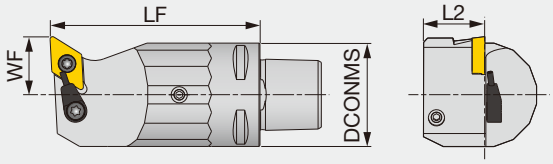
TUNGCAP

C-SDUCL-CHP

Screw-on toolholder, with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SDUCL18040-11-CHP	32	40	19	18	0.8	DC**11T3...
C3SDUCL18065-11-CHP	32	65	19	18	0.8	DC**11T3...

Applicable for 14 MPa coolant
Cannot be used for boring

SPARE PARTS

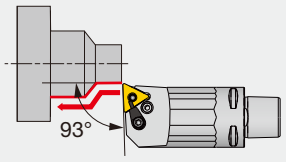




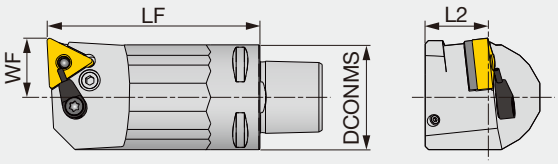
Designation	Clamping screw	Coolant unit	Wrench
C3SDUCL...	CSTB-4S	S-CU-CHP	T-15F

C-PTUNL-CHP

Lever-lock toolholder, with 93° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3PTUNL18040-16-CHP	32	40	19	18	0.8	TN**1604...
C3PTUNL18065-16-CHP	32	65	19	18	0.8	TN**1604...

Applicable for 14 MPa coolant
Cannot be used for boring

SPARE PARTS



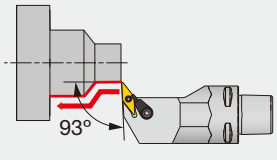




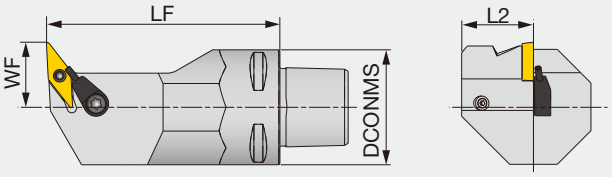

Designation	Coolant unit	Shim	Lever	Clamping screw	Spring pin	Wrench
C3PTUNL...	S-CU-CHP	LST317	LCL3	LCS3	LSP3	P-2.5

C-SVUCL-CHP

Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	RE	Insert
C3SVUCL18065-11-CHP	32	65	20	18	0.4	VC**1103...

Applicable for 14 MPa coolant
Cannot be used for boring

SPARE PARTS



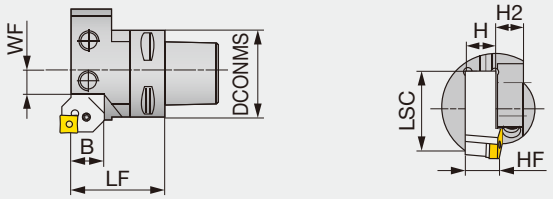


Designation	Clamping screw	Coolant unit	Wrench
C3SVUCL18065-11-CHP	CSTB-2.5	S-CU-CHP	T-8F

Reference pages: C-SDUCL-CHP: Inserts → B121 -, CBN → B194, PCD → B214
C-PTUNL-CHP: Inserts → B087 -, CBN → B182 -, PCD → B212
C-SVUCL-CHP: Inserts → B152

C-ADER/L

Adapter for square shank toolholders

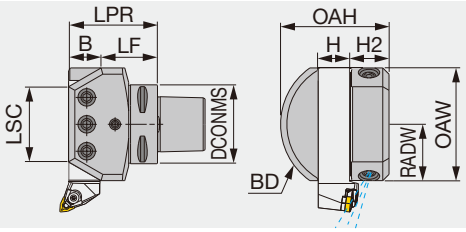


Metric	DCONMS	WF	LF	B	HF	H2	H	LSC
C3ADE-16R/L	32	17	45	16	16	26	16	45
C4ADE-20R/L	40	8	49.2	20	20	26	20	57
C5ADE-20R/L	50	8	55.2	20	20	20	20	57

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHA

Adapter for square shank toolholders

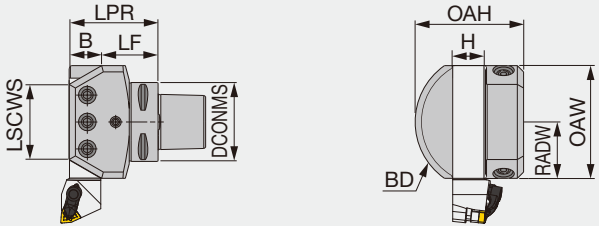


Metric	DCONMS	H	B	LPR	LSC	LF	RADW	OAW	H2	OAH	BD
C5ASHA20	50	20	20	58	46	38	38	76	31.5	76.5	90
C6ASHA20	63	20	20	60	46	40	38	76	31.5	76.5	90
C6ASHA25	63	25	25	71	61	46	45	90	31.6	86.5	110

Applicable for 10 MPa coolant

C-ASHA

Adapter for square shank tool holder, with hose-free direct coolant supply



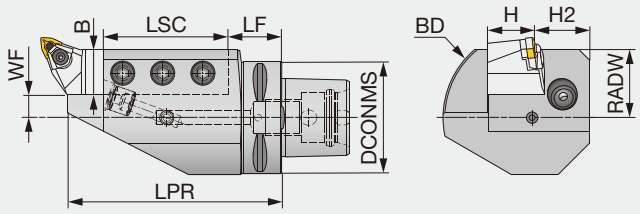
Metric	DCONMS	H	B	LPR	LSCWS	LF	RADW	OAW	OAH	BD
C6ASHA25-HPMC	63	25	25	71	61	46	45	90	86.6	110

Applicable for 7 MPa coolant

TUNGCAP

C-ASHR/L

Adapter for square shank toolholders



Left hand (L) shown.

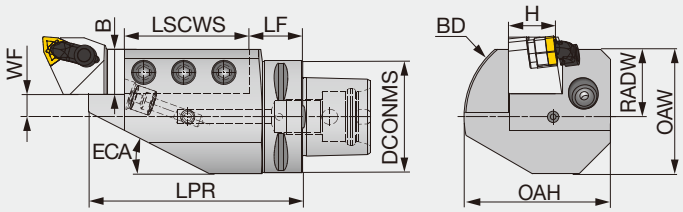
Inch	DCONMS	LPR	LSC	LF	WF	H	B	H2	RADW	BD
C6 ASHR/L 3/4X1	2.480	3.937	2.5	1.044	0.4	0.75	0.8	1	1.181	3.543
C6 ASHR/L 1X1	2.480	4.724	2.8	1.181	0.5	1	1	1	1.496	3.937
C8 ASHR 1 1/4 1	3.150	5.512	3.74	1.378	0.325	1.25	1.25	1.26	1.575	4.331

Metric	DCONMS	LPR	LSC	LF	WF	H	B	H2	RADW	BD
C4ASHR/L161	40	104	70	34	7	16	16	20	23	60
C5ASHR/L201	50	98	63.5	24.5	10	20	20	33	30	90
C6ASHR/L20-1	63	100	63.5	26.5	10	20	20	33	30	90
C6ASHR251-J	63	120	82	38	4.5	25	25	31.5	29.5	90
C6ASHL251	63	120	70	30	13	25	25	32	38	100
C8ASHR/L32-1	80	140	90	40	8	32	32	32	40	110

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHR/L-HPMC

Adapter for square shank tool holder, with hose-free direct coolant supply



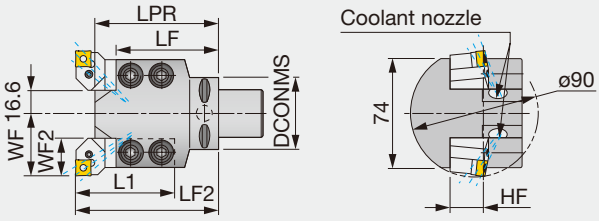
Left hand (L) shown.

Metric	DCONMS	LPR	LSCWS	LF	WF	H	B	OAH	RADW	OAW	BD	ECA
C6ASHR251-J-HPMC*	63	120	82	38	4.5	25	25	76.5	29.5	61	90	27
C6ASHL251-HPMC	63	120	70	30	13	25	25	82	38	70	100	27

* Recommended for Mazak INTEGREX No interference problem on machine magazine.
Applicable for 7 MPa coolant

C-ADES

Adapter for square shank toolholders

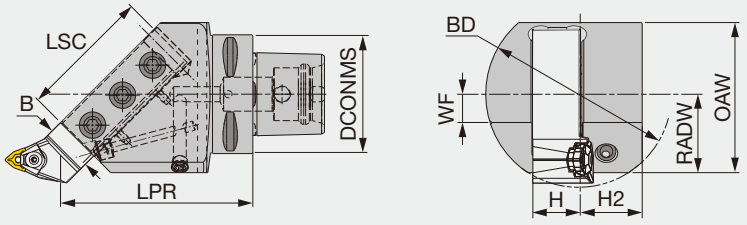


Metric	DCONMS	WF	LF2	LPR	LF	HF	WF2	L1
C4ADES-20	40	41.6	98	85	71	20	25	67
C5ADES-20	50	41.6	98	85	71	20	25	67

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHR/L-45

Adapter for square shank toolholders (with 45° slanted)



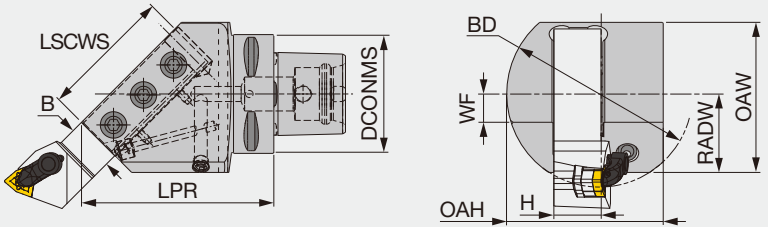
Right hand (R) shown.

Metric	DCONMS	H	B	LSC	LPR	H2	RADW	OAW	WF	BD
C5ASHR/L20-45	50	20	20	-	96.3	26	36	67.5	15	72
C6ASHR/L20-45	63	20	20	70	98.3	26	36	67.5	15	72
C6ASHR/L25-45	63	25	25	70	101.3	33	41.6	79.6	15	100

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHR/L-45-HPMC

Adapter for square shank tool holder, with hose-free direct coolant supply



Right hand (R) shown.
Left hand (L) shown
for the turning holder.

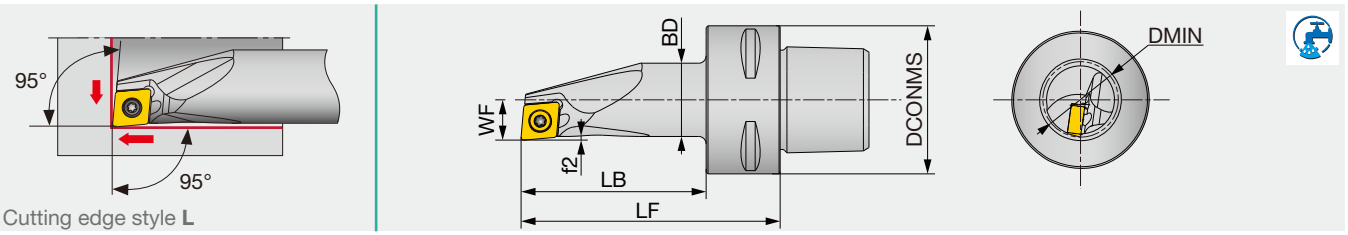
Metric	DCONMS	H	B	LSCWS	LPR	OAH	RADW	OAW	WF	BD
C6ASHR/L25-45-HPMC	63	25	25	70	102	83	41.6	79.6	15	100

Applicable for 7 MPa coolant

TUNGCAP

C-SCLCR

Screw-on internal toolholder, for positive 80° rhombic inserts



Cutting edge style **L**

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SCLCR11070-09	22	32	19.8	70	52	11	1.0	0.8	CC**09...
C4SCLCR11070-09	22	40	19.8	70	47	11	1.0	0.8	CC**09...

Applicable for 14 MPa coolant
Note: Use right-hand toolholders (R) with left-hand inserts (L).

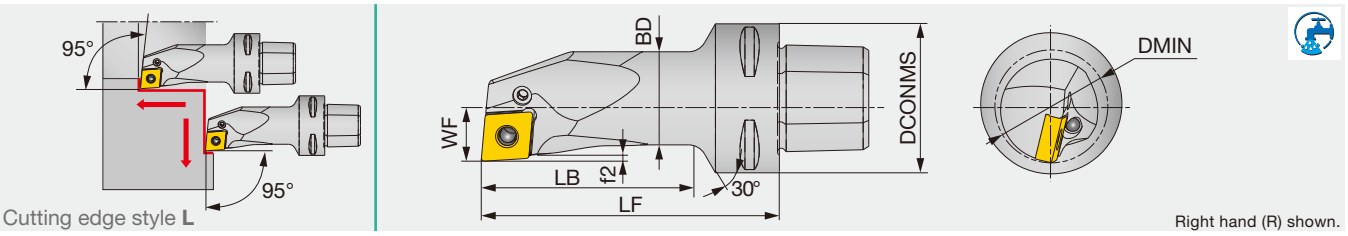
SPARE PARTS




Designation	Clamping screw	Wrench
C*SCLCR...	CSTB-4S	T-15F

C-PCLNR/L-IN

Lever-lock internal toolholder, for negative 80° rhombic inserts



Cutting edge style **L**

Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LB	LF	WF	f2	RE	Insert
C3PCLNR17090-12	32	32	25	90	71	17	1.6	0.8	CN**1204...
C4PCLNR17090-0904	32	40	25	90	63	17	1.3	0.8	CN**0904**E
C4PCLNR/L17080-12	32	40	25	80	58.5	17	1.6	0.8	CN**1204...
C4PCLNR22110-0904	40	40	32	110	86.5	22	1.3	0.8	CN**0904**E
C4PCLNR27120-0904	50	40	39.5	120	100	27	1.7	0.8	CN**0904**E

Applicable for 10 MPa coolant

SPARE PARTS

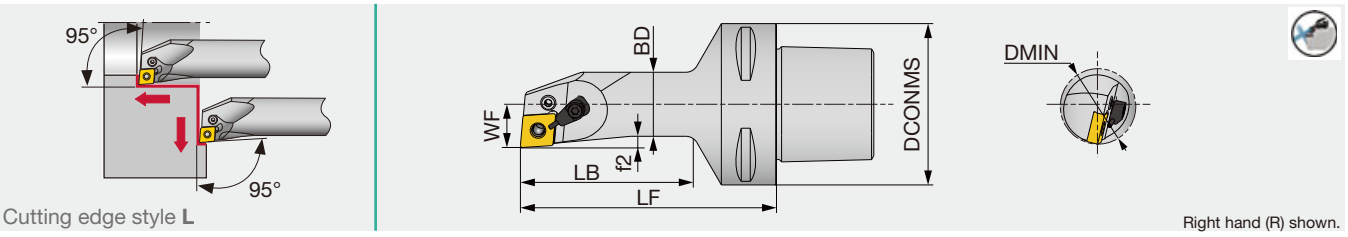




Designation	Lever	Clamping screw	Wrench
C*PCLNR/L...12	LCL43N	LCS43	P-2.5
C*PCLNR/L...0904	LCL33N	LCS33	P-2F

C-PCLNR/L-CHP

Lever-lock internal toolholder, for negative 80° rhombic inserts



Cutting edge style **L**

Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

SPARE PARTS



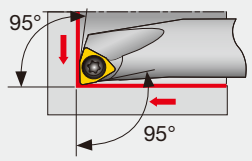



Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5F	LCL43N

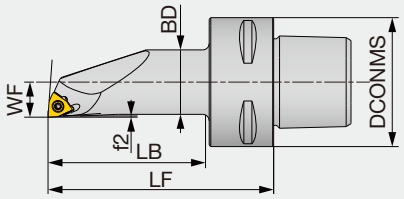
Reference pages: C-SCLCR: Inserts → B112 -, CBN → B191, PCD → B213
C-PCLNR/L-IN, C-PCLNR/L-CHP: Inserts → B054 -, CBN → B168 -, PCD → B211 -

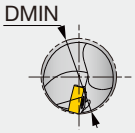
C-SWLXR/L

Screw-on internal toolholder, for WXGU inserts



Cutting edge style **L**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C4SWLXR11070-04	22	40	20	70	47	11	0.4	0.4	WXGU0403**L...

Applicable for 14 MPa coolant

SPARE PARTS

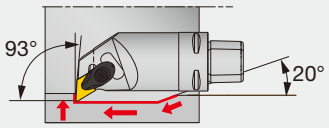




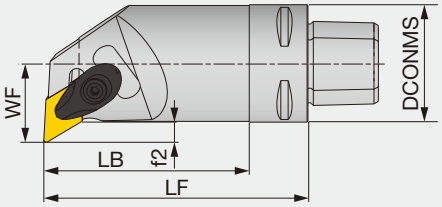
Designation	Clamping screw	Wrench
C4SWLXR11070-04	SR34-514	T-7F

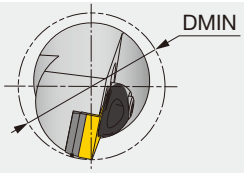
C-ADUNR/L

Double-clamp internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4ADUNR20070-15	38	40	70	50	20	5	0.8	DN**1504(06)...
C4ADUNR27090-15	50	40	90	-	27	7	0.8	DN**1504(06)...

Applicable for 10 MPa coolant

SPARE PARTS













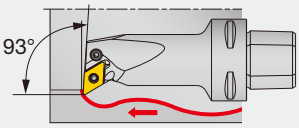


Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADUNR/L...	ACP4S	ACS-5W	ASD423(04)	CSTB-3.5	BP-7	SP-2.5	T-15F

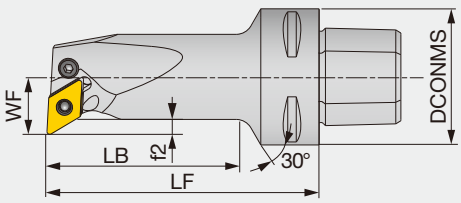
Option: ASD423 (Shim for DN**1506**)

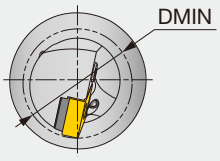
C-PDUNR/L

Lever-lock internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4PDUNR/L17080-11	32	40	80	58.5	17	4.4	0.8	DN**1104...

Applicable for 10 MPa coolant

SPARE PARTS











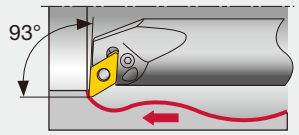
Designation	Lever	Clamping screw	Shim	Spring pin	Wrench
C4PDUNR17080-11	LCL33L	LCS3	ELSD317BR	LSP3	P-2.5
C4PDUNL17080-11	LCL33L	LCS3	ELSD317BL	LSP3	P-2.5

Reference pages: C-SWLXR/L: Inserts → B157 -, CBN → B210
C-ADUNR/L: Inserts → B066 -, CBN → B172 - , PCD → B211
C-PDUNR/L: Inserts → B066 -, CBN → B172

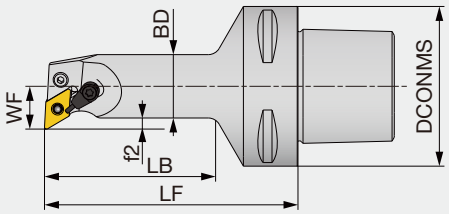
TUNGCAP

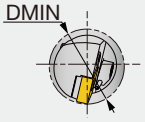
C-PDUNR/L

Lever-lock internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

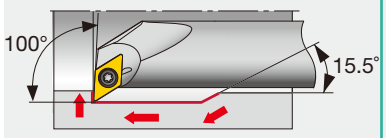
Applicable for 14 MPa coolant

SPARE PARTS

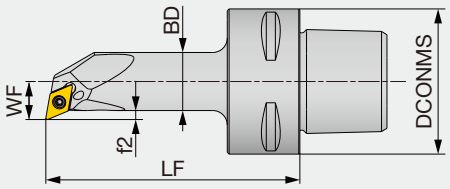
Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

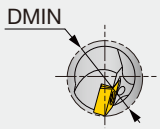
C-SDXXR

Screw-on internal toolholder, for DXGU inserts



Cutting edge style **X**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SDXXR11065-07	20	32	16	65	45	10.6	2.5	0.4	DXGU0703**L...
C3SDXXR13080-07	24	32	20	80	62	12.6	2.5	0.4	DXGU0703**L...
C4SDXXR11070-07	20	40	16	70	46	10.6	2.5	0.4	DXGU0703**L...
C4SDXXR13080-07	24	40	20	80	58	12.6	2.5	0.4	DXGU0703**L...

Applicable for 14 MPa coolant
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

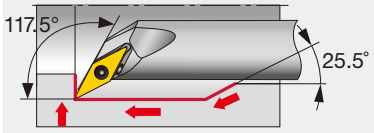
Designation	Clamping screw	Wrench
C*SDXXR...	SR34-514	T-7F

L
J
V
N
Q
Special
L
U
X
Q

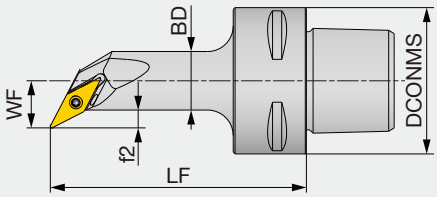
Reference pages: C-PDUNR/L: Inserts → B066 -, CBN → B172
C-SDXXR: Inserts → B126 -

C-SVQBR/L

Screw-on internal toolholder, for positive 35° rhombic inserts



Cutting edge style **Q**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SVQBR13065-11	21.5	32	16	65	45	13	4.9	0.4	VB**11...
C3SVQBR15080-11	25.5	32	20	80	59	15	4.9	0.4	VB**11...
C3SVQBR18090-16	30.5	32	25	90	71	17.5	4.9	0.8	VB**16...
C4SVQBR13070-11	21.5	40	16	70	43	13	4.9	0.4	VB**11...
C4SVQBR15080-11	25.5	40	20	80	52	15	4.9	0.4	VB**11...
C4SVQBR18095-16	30.5	40	25	95	68	17.5	4.9	0.8	VB**16...

Applicable for 14 MPa coolant

SPARE PARTS





Designation	Clamping screw	Wrench
C*SVQBR**-11	CSTB-2.5	T-6F
C*SVQBR**-16	CSTB-3.5	T-15F

C-ABB

Adapter for boring bars

Fig. 1

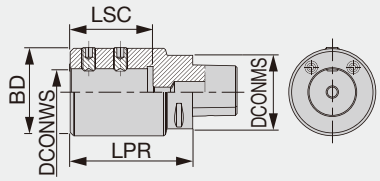


Fig. 2

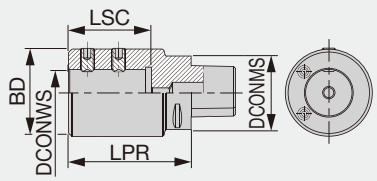
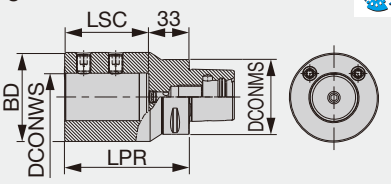


Fig. 3



Inch	DCONMS	DCONWS	BD	LPR	LSC	Fig.
C6ABB1X2.36	2.480	1.000	2.480	3.937	2.362	2
C6ABB1-1/2X2.75	2.480	1.500	2.953	4.134	2.756	1

Metric	DCONMS	DCONWS	BD	LPR	LSC	Fig.
C4ABB-25-60	40	25	63	100	60	2
C5ABB-25-60	50	25	63	100	60	2
C6ABB-25-60C*	63	25	63	95	60	1
C6ABB-40-70C*	63	40	75	105	71	3
C8ABB25-60	80	25	63	100	60	2
C8ABB40-72	80	40	75	105	71	2

Use the appropriate outlet screw according to the tool setup.
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp screw		Coolant outlet screw for internal supply	Coolant outlet screw for external supply
	Used on A-type sleeves	Used on B-type sleeves		
C6ABB1X2.36	SCREW1/2-20X.500EM	HSSS3/8-24X0.250CUP.P	SRM10X6DIN913	SRM6X8DIN913
C6ABB11/2X2.75	SCREW1/2-20X.500EM	HSSS1/2-20X1.251/2DOGP	SRM10X6DIN913	SRM6X8DIN913
C...ABB-25-60/C	SRM10X20DIN915	SRM10X12DIN1835-B	SRM10X6DIN913	SRM6X8DIN913
C6ABB-40-70/C	SRM12X20DIN915	SRM12X16DIN1835-B	SRM10X6DIN913	SRM6X8DIN913
C8ABB25-60	SRM10X20DIN915	SRM10X12DIN1835-B	SRM10X6DIN913	-
C8ABB40-72	SRM12X20DIN915	SRM12X16DIN1835-B	SRM10X6DIN913	-

Reference pages: C-SVQBR/L: Inserts → B150 -, CBN → B207 -, PCD → B221 -

TUNGCAP

SC

Sleeve for C-ABB adapter

Fig. A

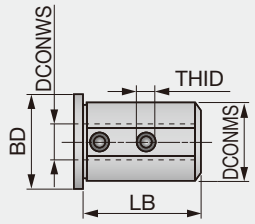
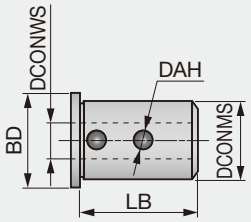


Fig. B



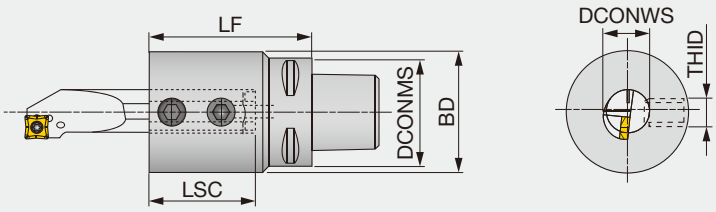
Inch	DCONMS	DCONWS	BD	LB	THID	DAH	Fig.
SC1-1/2T.250A	1.5	0.25	1.811	2.283	M6	-	A
SC1-1/2T.312A	1.5	0.312	1.811	2.283	M6	-	A
SC1-1/2T.375A	1.5	0.375	1.811	2.283	M8	-	A
SC1-1/2T.500A	1.5	0.5	1.811	2.283	M9	-	A
SC1-1/2T.625B	1.5	0.625	1.811	2.283	-	0.591	B
SC1-1/2T.750B	1.5	0.75	1.811	2.283	-	0.591	B
SC1-1/2T1.000B	1.5	1	1.811	2.283	-	0.591	B
SC1-1/2T1.250B	1.5	1.25	1.811	2.283	-	0.591	B

Metric	DCONMS	DCONWS	BD	LB	THID	DAH	Fig.
SC25T6A*	25	6	31	56	M6	-	A
SC25T8A*	25	8	31	56	M8	-	A
SC25T10A*	25	10	31	56	M8	-	A
SC25T12A*	25	12	31	56	M8	-	A
SC25T16B	25	16	31	56	-	12	B
SC25T20B	25	20	31	56	-	12	B
SC40T6A*	40	6	46	58	M6	-	A
SC40T8A*	40	8	46	58	M6	-	A
SC40T10A*	40	10	46	58	M8	-	A
SC40T12A*	40	12	46	58	M8	-	A
SC40T16B	40	16	46	58	-	15	B
SC40T20B	40	20	46	58	-	15	B
SC40T25B	40	25	46	58	-	15	B
SC40T32B	40	32	46	58	-	15	B

*: For machining on standard CNC lathes, always use CxADI holder.
Do not use with CxABB holder due to tool orietation reason.

C-ADI

Adapter for boring bars



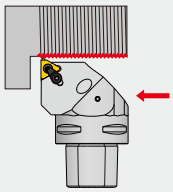
Metric	DCONMS	LF	LSC	DCONWS	BD	THID
C3ADI08x35T	32	35	30	8	28	M6
C3ADI10x35T	32	35	30	10	28	M6
C3ADI10	32	50	20	10	36	M6
C3ADI12x35T	32	35	30	12	32	M6
C3ADI12	32	50	21.5	12	36	M8
C3ADI16x40T	32	40	30	16	36	M8
C3ADI16	32	50	29.5	16	36	M8
C3ADI20x40T	32	40	34	20	36	M8
C4ADI10	40	50	20	10	36	M6
C4ADI12	40	50	24	12	36	M8
C4ADI16	40	50	32	16	36	M8
C4ADI20	40	60	35	20	36	M10
C4ADI25	40	70	45	25	54	M12
C5ADI10	50	60	26	10	36	M6
C5ADI12	50	60	26	12	36	M8
C5ADI16	50	60	32	16	36	M8
C5ADI20	50	60	40	20	36	M10
C5ADI25	50	70	50	25	54	M12
C5ADI32	50	100	76	32	68	M12
C6ADI12	63	65	36	12	36	M8
C6ADI16	63	65	36	16	36	M8
C6ADI20	63	65	40	20	36	M10
C6ADI25	63	76	51	25	54	M12
C6ADI32	63	100	76	32	68	M12
C6ADI40	63	100	76	40	98	M12
C6ADI50	63	115	86	50	98	M12
C8ADI12	80	70	36	12	36	M8
C8ADI16	80	70	36	16	36	M8
C8ADI20	80	70	40	20	36	M10
C8ADI25	80	80	51	25	54	M12
C8ADI32	80	110	86	32	68	M12
C8ADI40	80	115	86	40	98	M12
C8ADI50	80	115	86	50	98	M12

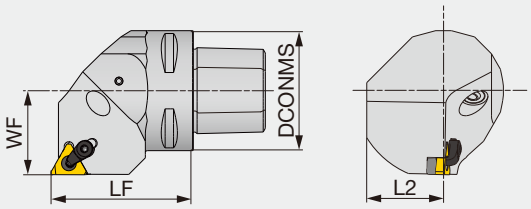
Applicable for 7 MPa coolant

TUNGCAP

C-CER/L

External threading toolholder, alternative clamping of screw-on or clamp-on





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	Insert
C3CER/L22040-16ERN(3)	32	40	20	22	16ER/L...
C4CER/L27050-16ERN(3)	40	50	25	27	16ER/L...
C5CEL35060-16ER(1)	50	60	32	35	16EL...
C5CER/L35060-16ERN(2)	50	60	32	35	16ER/L...
C6CEL45065-16ER(1)	63	65	41	45	16EL...
C6CER/L45065-16ERN(2)	63	65	41	45	16ER/L...

(1) Applicable for 3 MPa coolant (2), (3) Applicable for 7 MPa coolant

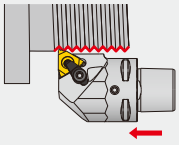
SPARE PARTS

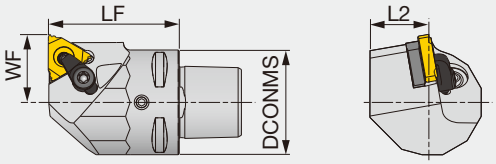
Designation	Shim	Shim screw	Clamp screw	Clamping screw	Wrench 1	Wrench 2	Coolant parts
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	EZ104(1)
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M10X1-M5(2)
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M8X1-M3(3)

(1) Applicable for 3 MPa coolant (2), (3) Applicable for 7 MPa coolant

C-CEL-ERN-B

External threading toolholder, alternative clamping of screw-on or clamp-on





Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	Insert
C3CEL22040-16ERN-B	32	40	18	22	16EL...

Applicable for 7 MPa coolant
Cannot be used for boring

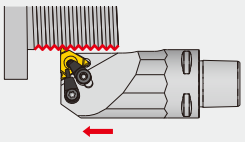
SPARE PARTS

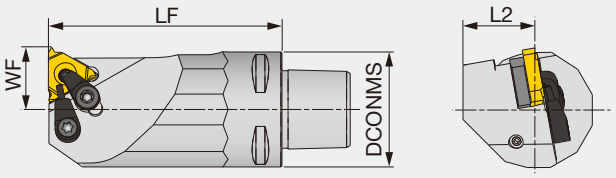
Designation	Shim	Shim screw	Clamp screw	Clamping screw	Wrench 1	Wrench 2	Coolant parts
C3CEL22040-16ERN-B	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M8X1-M3

Reference pages: C-CER/L, C-CEL-ERN-B: Inserts → E010 -

C-CEL-ERB-CHP

External threading toolholder, alternative clamping of screw-on or clamp-on, with high pressure coolant capability





Left hand (L) shown.

Metric	DCONMS	LF	L2	WF	Insert
C3CEL18065-16ERB-CHP	32	65	20	18	16EL...

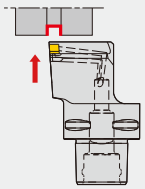
Applicable for 14 MPa coolant
Cannot be used for boring

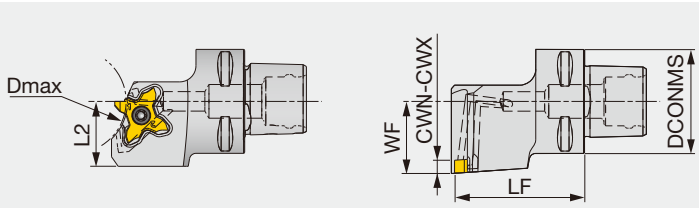
SPARE PARTS

Designation	Shim	Shim screw	Clamp screw	Clamping screw	Wrench 1	Wrench 2	Coolant unit
C3CEL18065-16ERB-CHP	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	S-CU-CHP

C-STCR/L-18-CHP

External grooving and threading toolholder, with high pressure coolant capability





Right hand (R) shown.

Metric	CWN	CWX	DCONMS	LF	L2	WF	Dmax	Insert	Torque*
C3STCR/L22040-18-CHP	0.33	3	32	40	20	22	32	TC*18...	1.2
C4STCR/L27050-18-CHP	0.33	3	40	50	25	27	75 (1)	TC*18...	1.2

Applicable for 14 MPa coolant
Use the right hand insert (TC*18R...) with the right hand holder (STCR...). Use the left hand insert (TC*18...) with the left hand holder (STCL...).
(1) The value for 3.5 mm groove depth. *Dmax* varies according to the grooving depth required. For further information, see Tungaloy Report #416 TetraMini-Cut/ TetraForce-Cut.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

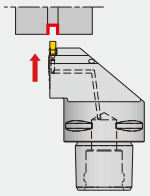
Designation	Clamping screw	Wrench
C*STCL**-18-CHP	CSTC-4L100DR	T-1008/5
C*STCR**-18-CHP	CSTC-4L100DL	T-1008/5

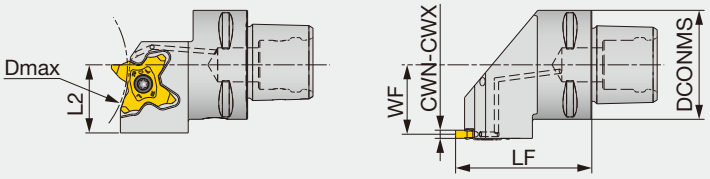
Reference pages: C-CEL-ERB-CHP: Inserts → E010 -
C-STCR/L-18-CHP: Inserts → F052 -

TUNGCAP

C-STCR/L-27-CHP

External grooving toolholder, with high pressure coolant capability





Right hand (R) shown.

Metric	CWN	CWX	DCONMS	LF	L2	WF	Dmax	Insert	Torque*
C4STCR/L27050-27-CHP	0.5	3.18	40	50	25	25.5	68 (1)	TC*27R/L...	2.5

Applicable for 14 MPa coolant
Use the right hand insert (TC*27R...) with the right hand holder (STCR...). Use the left hand insert (TC*27...) with the left hand holder (STCL...).
(1) The value for 6.4 mm groove depth. *Dmax* varies according to the grooving depth required. For further information, see Tungaloy Report #416 TetraMini-Cut/ TetraForce-Cut.
*Torque: Recommended clamping torque (N·m)

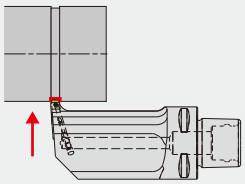
SPARE PARTS

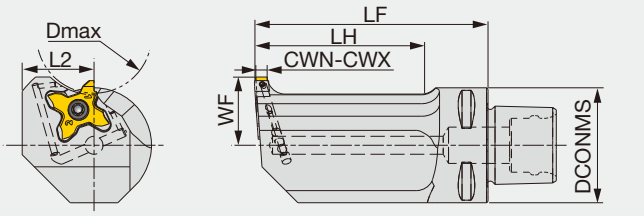



Designation	Screw	Wrench
C4STCR27050-27-CHP	SR16-212-01397L	T-2010/5
C4STCL27050-27-CHP	SR16-212-01397	T-2010/5

C-STCFL-18-CHP

External grooving and threading toolholder, with high pressure coolant capability





Left hand (L) shown.

Metric	CWN	CWX	DCONMS	LF	LH	L2	WF	Dmax	Insert	Torque*
C3STCFL18040-18-CHP	0.33	3	32	40	21.5	20	18	32	TC*18R...	1.2
C3STCFL18065-18-CHP	0.33	3	32	65	46.5	20	18	32	TC*18R...	1.2

Applicable for 14 MPa coolant
Use the right hand insert (TC*18R...) with the left hand holder (STCFL...).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

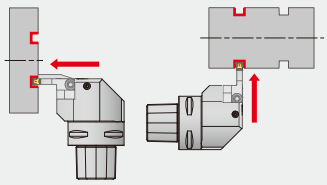


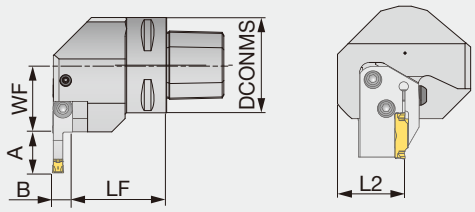

Designation	Clamping screw	Wrench
C3STCFL**-18-CHP	CSTC-4L100DL	T-1008/5

Reference pages: C-STCR/L-27-CHP: Inserts → F066 -
C-STCFL-18-CHP: Inserts → F052 -

C-CHFVR/L

Toolholder for CAER/L and CAFR/L adapters





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	A	B
C3CHFVR/L22040N	32	32.5	35	22	*Table:	*Table:
C4CHFVR/L27050N	40	42.5	36	27	*Table:	*Table:
C5CHFVR/L35060N	50	49.5	36	35	*Table:	*Table:
C6CHFVR/L45065N	63	54.5	41	45	*Table:	*Table:

Applicable for 7 MPa coolant
Depend on the adapter type, the value of A or B may change. If needed, the coolant direction can be adjusted by the nozzle.
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C5CHFV*35060N	SATZ-M10X1-M5	-	CSHB-6-A	P-4
C6CHFV*45065	CNZ125	PNZ5	CSHB-6-A	P-4
C6CHFV*45065N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

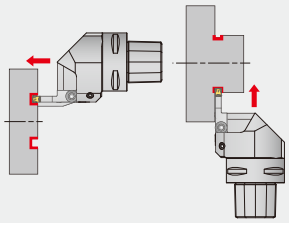
Combination of adapter and toolholder

Toolholder	Adapter			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHFVR...	–	●	●	–
C*CHFVL...	●	–	–	●

●: Corresponding

C-CHSR/L

Toolholder for CAER/L and CAFR/L adapters





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	A	B
C3CHSR/L22050N	32	50	35	11.5	*Table:	*Table:
C4CHSR/L27050N	40	50	36	16.5	*Table:	*Table:
C5CHSR/L35060N	50	60	36	24.5	*Table:	*Table:
C6CHSR/L45065N	63	65	41	34.5	*Table:	*Table:

Applicable for 7 MPa coolant
Depend on the adapter type, the value of A or B may change. If needed, the coolant direction can be adjusted by the nozzle.
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C4CHS*27050N	SATZ-M8X1-M3	-	CSHB-6-A	P-4
C5CHS*35060	CNZ125	PNZ5	CSHB-6-A	P-4
C*CHS**506*N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

Combination of adapter and toolholder

Toolholder	Adapter			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●	–	–	●
C*CHSL...	–	●	●	–

●: Corresponding

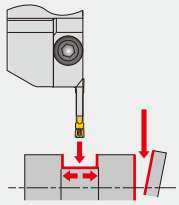
*Table: Off set dimensions for adapter

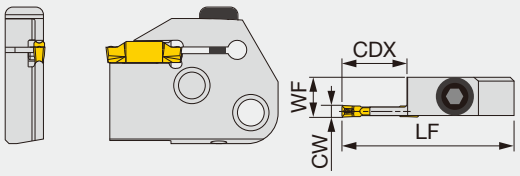
Application	Adapter	A	B
For external grooving	CAER/L-3T16	16	10.4
	CAER/L-4T16	16	10.5
	CAER/L-5T20	20	10.5
	CAER/L-6T20	20	10.5
For face grooving	CAFR/L-3T12-*	12	10.4
	CAFR/L-4T16-*	16	10.5
	CAFR/L-5T20-*	20	10.5
	CAFR/L-6T20-*	25	10.5

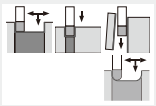
TUNGCAP

CAER/L

Adapter for external grooving and turning







Right hand (R) shown.

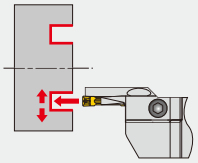
Metric	CW	Seat size	CDX	LF	WF	Toolholder
CAER/L-3T16	3	3	16	45	10.4	C*CHSR/L, C*CHFVL/R
CAER/L-4T16	4	4	16	45	10.5	C*CHSR/L, C*CHFVL/R
CAER/L-5T20	5	5	20	49	10.5	C*CHSR/L, C*CHFVL/R
CAER/L-6T20	6	6	20	49	10.5	C*CHSR/L, C*CHFVL/R

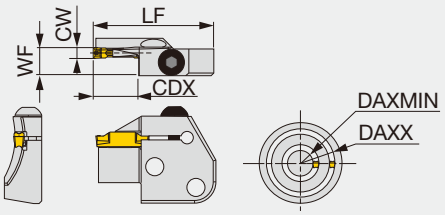
SPARE PARTS

Designation	Clamping screw	Wrench
CAER/L...	BHM6-20-A	P-4

CAFR/L

Adapter for face grooving and turning







Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)
CAFR/L-3T12-040055	3	40	55	3	12	45	10.4
CAFR/L-3T12-055075	3	55	75	3	12	45	10.4
CAFR/L-3T12-075100	3	75	100	3	12	45	10.4
CAFR/L-3T12-100140	3	100	140	3	12	45	10.4
CAFR/L-3T12-140200	3	140	200	3	12	45	10.4
CAFR/L-4T16-050070	4	50	70	4	16	45	10.5
CAFR/L-4T16-070100	4	70	100	4	16	45	10.5
CAFR/L-4T16-100150	4	100	150	4	16	45	10.5
CAFR/L-4T16-150250	4	150	250	4	16	45	10.5
CAFR/L-5T20-055080	5	55	80	5	20	49	10.5
CAFR/L-5T20-080120	5	80	120	5	20	49	10.5
CAFR/L-5T20-120180	5	120	180	5	20	49	10.5
CAFR/L-5T20-180300	5	180	300	5	20	49	10.5
CAFR/L-5T20-300000	5	300	∞	5	20	49	10.5
CAFR/L-6T25-060090	6	60	90	6	25	55	10.5
CAFR/L-6T25-090150	6	90	150	6	25	55	10.5
CAFR/L-6T25-150250	6	150	250	6	25	55	10.5
CAFR/L-6T25-250400	6	250	400	6	25	55	10.5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
(1) WF is calculated with the groove width CW in the above table.
(2) Not applicable to CAFR/L-3T12-040055
(3) Seat sizes of DTF are only 3 and 4.

SPARE PARTS

Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

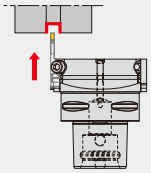
Minimum machining diameter in face grooving with each insert

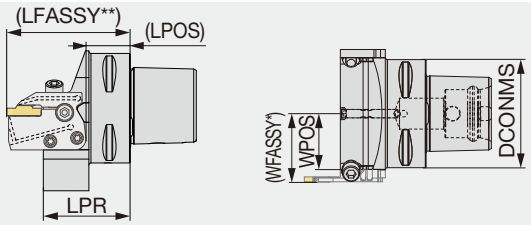
Insert	DAXMIN	Note
DTE 3 / DGS 3 / DGM 3	ø92	When the machining diameter is smaller than DAXMIN, please use DTF or DTX.
DTE 4 / DGS 4 / DGM 4	ø42	
DTE 5 / DGS 5 / DGM 5	ø64	
DTE 6 / DGS 6 / DGM 6	ø61	

Reference pages: CAFR/L: Inserts → F032 -

C-CHSN-CHP

Toolholder for adapter with high pressure coolant capability





Metric	DCONMS	LPR	LPOS	WPOS	Adapter (Option)	Torque*
C3CHSN19045-CHP	32	45	17.5	18.5	CAER/L...-CHP	5
C4CHSN21047-CHP	40	46.5	21.5	21	CAER/L...-CHP	5
C5CHSN26047-CHP	50	47	22.5	26	CAER/L...-CHP	5
C6CHSN33050-CHP	63	50	24.5	32.5	CAER/L...-CHP	5

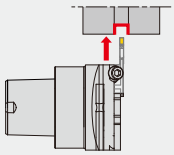
When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert
WFASSY*: Toolholder (WPOS) + adapter (WF) LFASSY**: Toolholder (LPOS) + adapter (LF) Torque*: Recommended clamping torque (N·m)
Applicable for 30 MPa coolant
Please see page L059 for the instruction on installing and removing the adapter or the insert.

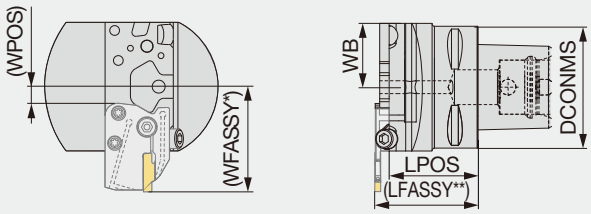
SPARE PARTS

Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

C-CHFVN-CHP

Toolholder for adapter with high pressure coolant capability





Metric	DCONMS	LPOS	WB	WPOS	Adapter (Option)	Torque*
C3CHFVN26040-CHP	32	40	26	1.5	CAER/L...-CHP	5
C4CHFVN26046-CHP	40	46	26	1.5	CAER/L...-CHP	5
C5CHFVN26046-CHP	50	46	26	1.5	CAER/L...-CHP	5
C6CHFVN33046-CHP	63	46	33	8.5	CAER/L...-CHP	5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert
WFASSY*: Toolholder (WPOS) + adapter (LF) LFASSY**: Toolholder (LPOS) + adapter (WF) Torque*: Recommended clamping torque (N·m)
Applicable for 30 MPa coolant
Please see page L059 for the instruction on installing and removing the adapter or the insert.

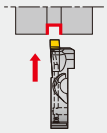
SPARE PARTS

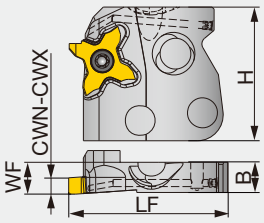
Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

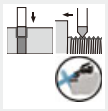
TUNGCAP

STCAR/L18-CHP

Modular-type external grooving and parting adapter, with high pressure coolant capability







Right hand (R) shown.

Metric	CWN	CWX	WF	H	LF	B	Insert	Torque*
STCAR/L18-CHP	0.33	3	7.5	33	38	7.2	TC*18...	1.2

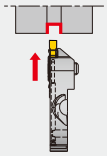
Use the right hand insert (TC*18R...) with the right hand adapter (STCAR...). Use the left hand insert (TC*18...) with the left hand adapter (STCAL...).
*Torque: Recommended clamping torque (N·m)

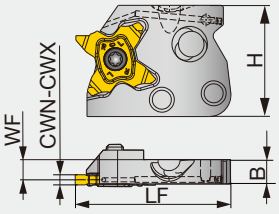
SPARE PARTS

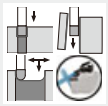
Designation	Clamping screw	Wrench
STCAL18-CHP	CSTC-4L100DR	T-1008/5
STCAR18-CHP	CSTC-4L100DL	T-1008/5

STCAR/L27-CHP

Modular-type external grooving and parting adapter, with high pressure coolant capability







Right hand (R) shown.

Metric	CWN	CWX	WF	H	LF	B	Insert	Torque*
STCAR/L27-CHP	0.5	3.18	6	33	46	7.2	TC*27...	2.5

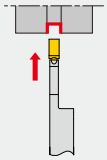
*Torque: Recommended clamping torque (N·m)

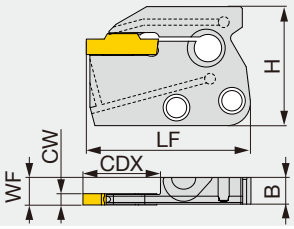
SPARE PARTS

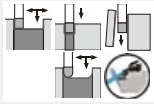
Designation	Screw	Wrench
STCAR27-CHP	SR16-212-01397L	T-2010/5
STCAL27-CHP	SR16-212-01397	T-2010/5

CAER/L-CHP

Modular-type external grooving and parting adapter, with high pressure coolant capability







Right hand (R) shown.

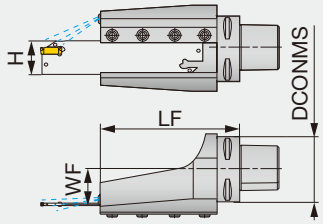
Metric	CW	Seat size	CDX	WF(1)	H	LF	B
CAER/L-2T16-CHP	2	2	16	7.3	33	41.5	7.2
CAER/L-2T20-CHP	2	2	20	7.3	33	45.5	7.2
CAER/L-3T16-CHP	3	3	16	7.4	33	41.5	7.2
CAER/L-3T20-CHP	3	3	20	7.5	33	45.5	7.2
CAER/L-4T16-CHP	4	4	16	7.7	33	41.5	7.2
CAER/L-4T20-CHP	4	4	20	7.7	33	45.5	7.2
CAER/L-5T20-CHP	5	5	20	7.8	33	46.3	7.2
CAER/L-6T20-CHP	6	6	20	7.8	33	46.3	7.2
CAER/L-8T25-CHP	8	8	25	8.3	33	51.1	7.2

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert
(1) "WF" value is calculated with groove width "CW" shown in the table.

Reference pages: STCAR/L18-CHP: Inserts → F052 -, STCAR/L27-CHP: Inserts → F066 -
CAER/L-CHP: Inserts → F032 -

C-TBK-R/L

Adapter for parting blades

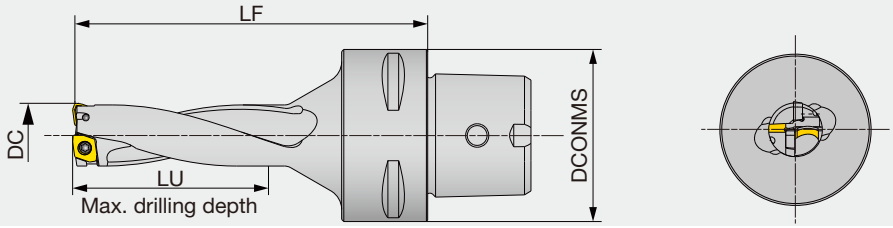


Metric	DCONMS	WF	LF	H
C6TBK-32R/L	63	32	138	32

Applicable for 3 MPa coolant

C-TDX

Indexable drill L/D=3



Metric	DC	DCONMS	LF	LU	Max. offset (radial)	Insert
C4TDX150L082-3	15	40	82	45.5	0.9	XPMT050204R-D*
C4TDX200L101-3	20	40	101	60.5	0.5	XPMT06X308R-D*
C4TDX250L125-3	25	40	125	75.6	0.4	XPMT07H308R-D*
C4TDX300L139-3	30	40	139	90.7	0.7	XPMT08T308R-D*
C6TDX200L101-3	20	63	101	60.5	0.5	XPMT06X308R-D*
C6TDX250L121-3	25	63	121	75.6	0.4	XPMT07H308R-D*
C6TDX300L139-3	30	63	139	90.7	0.7	XPMT08T308R-D*
C6TDX350L159-3	35	63	159	106.1	1.8	XPMT110412R-D*
C6TDX400L177-3	40	63	177	121.1	0.5	XPMT110412R-D*

Applicable for 14 MPa coolant

SPARE PARTS



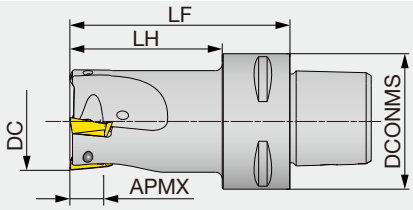

Designation	Clamping screw	Wrench
C4TDX150L082-3	CSTB-2L040	T-6D
C4TDX200L101-3	CSTB-2.2R	T-7D
C4TDX250L125-3	CSTB-2.5	T-8D
C4TDX300L139-3	CSTB-3	T-9D
C6TDX200L101-3	CSTB-2.2R	T-7D
C6TDX250L121-3	CSTB-2.5	T-8D
C6TDX300L139-3	CSTB-3	T-9D
C6TDX350L159-3	CSTB-4	T-15D
C6TDX400L177-3	CSTB-4	T-15D

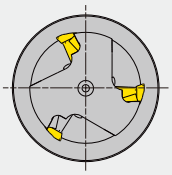
Reference pages: C-TDX: Inserts → J088 -

TUNGCAP

C-EPA

Square shoulder milling





Metric	DC	APMX	DCONMS	CICT	LF	LH	Air hole	Insert
C4EPA10M032R03L065	32	10	40	3	65	45	with	TOMT1004...
C4EPA10M035R03L065	35	10	40	3	65	45	with	TOMT1004...
C6EPA15M040R03L080	40	15	63	3	80	58	with	TOMT1506...
C6EPA15M050R04L080	50	15	63	4	80	58	with	TOMT1506...

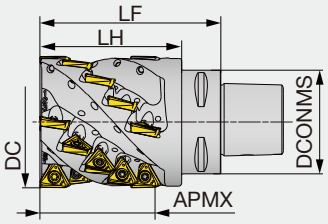
Applicable for 14 MPa coolant

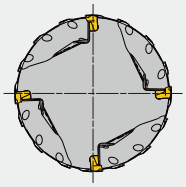
SPARE PARTS

Designation	Clamping screw	Torx bit	Grip
C4EPA10M0**R03L065	SR14-562/S	BLDT10/S7	SW6-SD
C6EPA15M0**R0*L080	TS45120I	BT20S	H-TB2W

C-TLA

Square shoulder milling (for large depth of cut)





Metric	DC	APMX	DCONMS	CICT	ZEFP	LF	LH	Air hole	Insert
C6TLA15M063R03L100	63	55	63	12	3	100	78	with	TOMT1506...
C6TLA15M080R04L110	80	70	63	20	4	110	86.2	with	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS

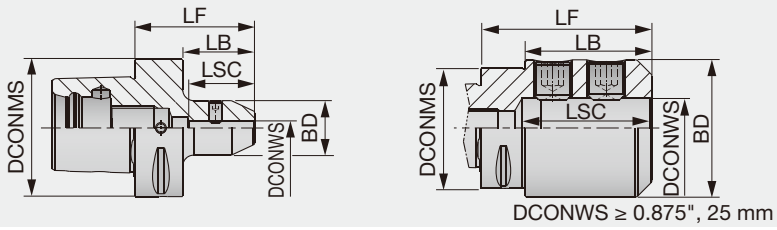
Designation	Clamping screw	Torx bit	Grip
C6TLA15M0**R0*L1**	TS45120I	BT20S	H-TB2W

Side lock
Collet chuck
Face mill
Milling chuck
Hydro chuck
Shrinking chuck
Others

Reference pages: C-EPA, C-TLA: Inserts → H153

C-EM

Side-lock holder for weldon endmills (DIN1835 Form B)



Inch	DCONMS	DCONWS	BD	LF	LB	LSC
C6EM1/4X2.165	2.48	0.250	1.000	2.165	1.299	1.483
C6EM3/8X2.362	2.48	0.375	1.248	2.362	1.496	1.496
C6EM1/2X2.362	2.48	0.500	1.614	2.362	1.496	1.714
C6EM5/8X2.560	2.48	0.625	1.649	2.560	1.694	1.850
C6EM3/4X2.560	2.48	0.750	1.752	2.560	1.694	1.929

Inch	DCONMS	DCONWS	BD	LF	LB	LSC
C6EM7/8X3.189	2.48	0.875	2.047	3.189	2.323	2.519
C6EM1X3.347	2.48	1.000	2.559	3.347	2.480	2.519
C6EM1-1/4X3.500	2.48	1.250	2.500	3.500	2.634	2.598
C6EM1-1/2X3.500	2.48	1.500	2.992	3.500	2.583	2.559

Metric	DCONMS	DCONWS	BD	LF	LB	LSC
C3EM6X45	32	6	25	45	30	29
C3EM8X45	32	8	28	45	25	35
C3EM10X50	32	10	35	50	30	39
C3EM12X55	32	12	42	55	35	43
C4EM06X50	40	6	25	50	30	29
C4EM08X50	40	8	28	50	30	35
C4EM10X50	40	10	35	50	30	39
C4EM12X55	40	12	42	55	35	43
C4EM14X55	40	14	44	55	35	43
C4EM16X60	40	16	48	60	40	47
C5EM06X50	50	6	25	50	30	29
C5EM08X50	50	8	28	50	30	35
C5EM10X55	50	10	35	55	35	39
C5EM12X60	50	12	42	60	40	43
C5EM14X60	50	14	44	60	40	43
C5EM16X60	50	16	48	60	40	47
C5EM18X60	50	18	50	60	40	47
C5EM20X60	50	20	52	60	40	49
C5EM25X85	50	25	65	85	65	64
C6EM6X55	63	6	25	55	33	29
C6EM8X55	63	8	28	55	33	35

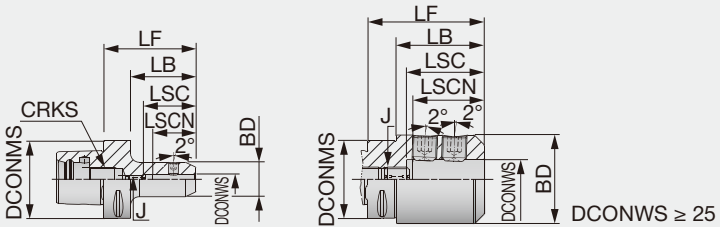
Metric	DCONMS	DCONWS	BD	LF	LB	LSC
C6EM10X60	63	10	35	60	38	39
C6EM12X60	63	12	42	60	38	43
C6EM14X60	63	14	44	60	38	43
C6EM16X65	63	16	48	65	43	47
C6EM18X65	63	18	50	65	43	47
C6EM20X65	63	20	52	65	43	49
C6EM25X80	63	25	65	80	58	68
C6EM32X90	63	32	72	90	68	68
C6EM40X100	63	40	90	100	78	78
C8EM06X70	80	6	25	70	40	30
C8EM08X70	80	8	28	70	40	35
C8EM10X70	80	10	35	70	40	39
C8EM12X70	80	12	42	70	40	43
C8EM14X70	80	14	44	70	40	43
C8EM16X70	80	16	48	70	40	47
C8EM18X70	80	18	50	70	40	47
C8EM20X70	80	20	52	70	40	49
C8EM25X90	80	25	65	90	60	68
C8EM32X95	80	32	72	95	65	68
C8EM40X110	80	40	90	110	80	68
C8EM50X120	80	50	98	120	90	90

Applicable for 7 MPa coolant

TUNGCAP

C-EM-E

Side-lock holder for drills (DIN1835 Form E whistle notch)

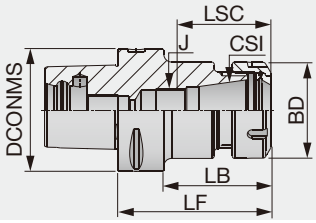


Metric	DCONMS	DCONWS	BD	LF	LSCN	LSC	LB	J	CRKS
C3EM06X70E	32	6	25	70	30	35	50	5	M14
C3EM12X75E	32	12	42	75	44	49	55	10	M14
C4EM06X70E	40	6	25	70	30	35	50	M5	M14
C4EM08X70E	40	8	28	70	35	43	50	M6	M14
C4EM10X70E	40	10	35	70	39	45	50	M8	M14
C4EM12X75E	40	12	42	75	44	49	55	M10	M14
C4EM14X75E	40	14	44	75	44	49	55	M10	M14
C5EM10X70E	50	10	35	70	39	45	50	M8	M16
C5EM12X75E	50	12	42	75	44	49	55	M10	M16
C5EM14X75E	50	14	44	75	44	49	55	M10	M16
C5EM16X80E	50	16	48	80	47	52	60	M12	M16
C5EM18X80E	50	18	50	80	47	52	60	M12	M16
C5EM20X85E	50	20	52	85	49	55	65	M16	M16
C6EM06X75E	63	6	25	75	30	36	53	M5	M20
C6EM08X75E	63	8	28	75	35	43	53	M6	M20
C6EM10X75E	63	10	35	75	39	46	53	M8	M20
C6EM12X80E	63	12	42	80	44	49	58	M10	M20
C6EM14X80E	63	14	44	80	44	49	58	M10	M20
C6EM16X85E	63	16	48	85	47	52	63	M12	M20
C6EM18X85E	63	18	50	85	47	52	63	M12	M20
C6EM20X85E	63	20	52	85	49	55	63	M16	M20
C6EM25X90E	63	25	65	90	54	60	68	M20	M20
C6EM32X95E	63	32	72	95	58	63	73	M20	M20
C8EM08X65E	80	8	28	65	35	43	35	M6	M20
C8EM10X65E	80	10	35	65	39	46	35	M8	M20
C8EM12X70E	80	12	42	70	44	49	40	M10	M20
C8EM14X70E	80	14	44	70	44	49	40	M10	M20
C8EM16X75E	80	16	48	75	47	52	45	M12	M20
C8EM18X75E	80	18	50	75	47	52	45	M12	M20
C8EM20X80E	80	20	52	80	49	57	50	M16	M20
C8EM25X90E	80	25	65	90	54	60	60	M20	M20
C8EM32X95E	80	32	72	95	58	64	65	M20	M20

Applicable for 7 MPa coolant

C-ER

ER collet chuck holder (DIN6499)



Metric	Range min	Range Max.	DCONMS	CSI	BD	LF	LB	J	LSC
C3ER16X30T	1	10	32	ER16	30	30	-	-	33
C3ER16X45	1	10	32	ER16	28	45	25	-	39
C3ER20X35T	1	13	32	ER20	36	35	-	-	38.5
C3ER20X45	1	13	32	ER20	34	45	30	-	39.8
C4ER16X70	1	10	40	ER16	28	70	50	M10	41.6
C4ER20X35*	1	13	40	ER20	34	35	27	-	39.8
C4ER20X52	1	13	40	ER20	34	52	32	-	39.1
C4ER25X38*	1	16	40	ER25	42	38	30	-	43.3
C4ER25X52	1	16	40	ER25	42	52	32	-	40.8
C4ER32X54	2	20	40	ER32	50	54	34	-	46.7
C5ER16X100	1	10	50	ER16	28	100	80	M10	61.6
C5ER16X130	1	10	50	ER16	28	130	110	M10	71.6
C5ER20X055	1	13	50	ER20	34	55	35	-	39.3
C5ER20X100	1	13	50	ER20	34	100	80	M12	52.5
C5ER20X130	1	13	50	ER20	34	130	110	M12	52.5
C5ER25X055	1	16	50	ER25	42	55	35	-	40.5
C5ER25X100	1	16	50	ER25	42	100	80	M16	65
C5ER32X057	2	20	50	ER32	50	57	36	-	47.2
C5ER32X100	2	20	50	ER32	50	100	36	M22X1.5	59.4
C6ER16X100	1	10	63	ER16	28	100	78	M10	61.6
C6ER16X130	1	10	63	ER16	28	130	108	M10	71.6
C6ER16X160	1	10	63	ER16	28	160	138	M10	71.6
C6ER20X060	1	13	63	ER20	34	60	38	-	39.5

Metric	Range min	Range Max.	DCONMS	CSI	BD	LF	LB	J	LSC
C6ER20X100	1	13	63	ER20	34	100	78	M12	52.5
C6ER20X130	1	13	63	ER20	34	130	108	M12	52.5
C6ER20X160	1	13	63	ER20	34	160	138	M12	52.5
C6ER25X060	1	16	63	ER25	42	60	38	-	40.4
C6ER25X100	1	16	63	ER25	42	100	78	M16	65
C6ER25X130	1	16	63	ER25	42	130	108	M16	73
C6ER25X160	1	16	63	ER25	42	160	138	M16	73
C6ER32X060	2	20	63	ER32	50	60	36	-	47.8
C6ER32X100	2	20	63	ER32	50	100	78	M22X1.5	59.4
C6ER32X130	2	20	63	ER32	50	130	108	M22X1.5	69.4
C6ER32X160	2	20	63	ER32	50	160	138	M22X1.5	69.4
C6ER40X065	3	26	63	ER40	63	65	37	-	55
C6ER40X100	3	26	63	ER40	63	100	78	M28X1.5	60
C6ER40X130	3	26	63	ER40	63	130	108	M28X1.5	70
C8ER32X70	2	20	80	ER32	50	70	40	-	47.8
C8ER32X100	2	20	80	ER32	50	100	70	M22x1.5	60.4
C8ER32X160	2	20	80	ER32	50	160	130	M22x1.5	65.4
C8ER40X70	3	26	80	ER40	63	70	40	-	54.8
C8ER40X100	3	26	80	ER40	63	100	70	M28x1.5	60
C8ER40X160	3	26	80	ER40	63	160	130	M28x1.5	71

Option: Wrench for ER collet

* Without V grooves, for manual use only.
Applicable for 10 MPa coolant

Reference pages

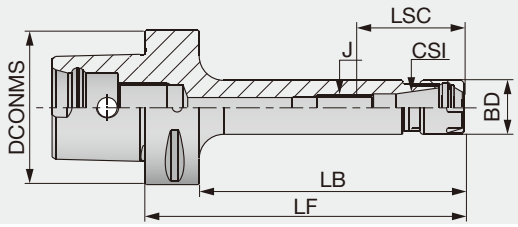

ER collet K118 -


Nut K142, K143

TUNGCAP

C-ER-M

ER Mini collet chuck holder (DIN6499)



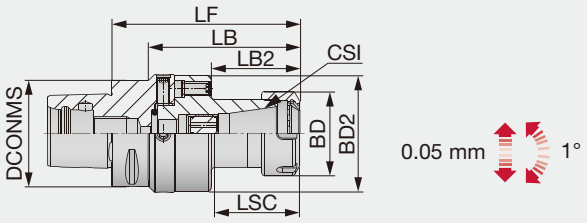
Metric	Range min	Range max	DCONMS	CSI	BD	LF	LB	J	LSC
C4ER16X70M	0.5	10	40	ER16	22	70	50	M10	41
C5ER16X100M	0.5	10	50	ER16	22	100	80	M10	46
C5ER16X130M	0.5	10	50	ER16	22	130	110	M10	46
C6ER16X100M	0.5	10	63	ER16	22	100	78	M10	46
C6ER16X130M	0.5	10	63	ER16	22	130	108	M10	46
C6ER16X160M	0.5	10	63	ER16	22	160	138	M10	46

Applicable for 10 MPa coolant

Option: Wrench for ER collet

ADJ C-ER

ER collet chuck with center alignment



Metric	DCONMS	CSI	Range min	Range max	BD2	BD	LF	LB	LB2	LSC
ADJC5ER32	50	ER32	2	20	70	50	115	95	52.5	57
ADJC6ER32	63	ER32	2	20	70	50	111.5	89.5	52.5	57

Applicable for 10 MPa coolant

Option: Wrench for ER collet

WRENCH-ER / ER DIN 6499

Fig. 1

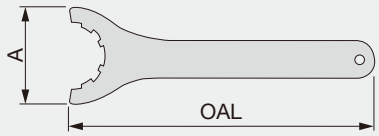


Fig. 2

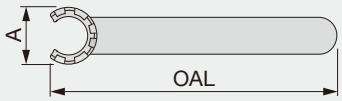
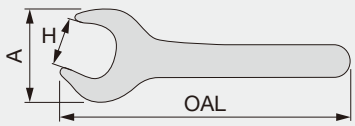


Fig. 3



Metric	A	H	OAL	Fig.
WRENCHER11MINI	16.8	-	95	2
WRENCHER11	32	17	95	3
WRENCHER16MINI	22.5	-	117	2
WRENCHER16	42.8	25	143	3
WRENCHER20MINI	28	-	128	2
WRENCHER20	53.5	30	172	3
WRENCHER25MINI	29	-	120	2
WRENCHER25	70	-	207	1
WRENCHER32	78	-	255	1
WRENCHER40	95	-	285	1
WRENCHER50	110	-	350	1
WRENCHER20SHORTRING22	48	22	260	3
WRENCHER32SHORT	75	36	303	3
WRENCHER40SHORT	94	46	378	3

PRESET ER-JET (Preset screw)

Fig. 1

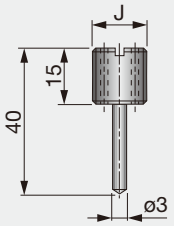
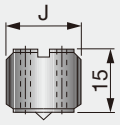


Fig. 2

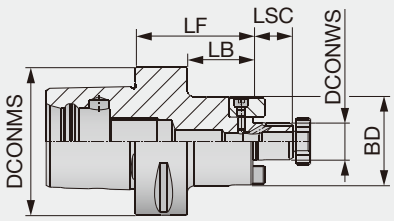


Metric	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGCAP

C-SEM

Shell mill holder with coolant nozzle



Inch	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM3/4X1.377C	2.48	0.75	1.772	1.377	0.669	0.512	8	5
C6SEM3/4X3.937C	2.48	0.75	1.772	3.937	0.669	3.071	8	5
C6SEM1X1.457C	2.48	1.00	2.165	1.457	0.669	0.59	10	5.4

Inch	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM1X3.937C	2.48	1.00	2.165	3.937	0.669	3.071	12	6.3
C6SEM1-1/4X2.362C	2.48	1.25	2.519	2.362	0.669	1.496	12.7	6
C6SEM1-1/2X2.362C	2.48	1.50	3.070	2.362	0.937	1.496	14	7

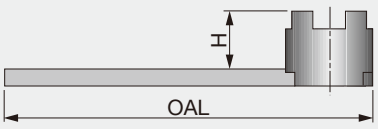
Metric	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C4SEM16X32C	40	16	38	32	17	12	8	5
C4SEM16X55C	40	16	38	55	17	35	8	5
C4SEM22X40C	40	22	47	40	19	20	10	5.4
C4SEM22X55C	40	22	47	55	19	35	10	5.4
C5SEM16X35C	50	16	38	35	17	15	8	5
C5SEM16X70C	50	16	38	70	17	50	8	5
C5SEM22X35C	50	22	47	35	19	15	10	5.4
C5SEM22X70C	50	22	47	70	19	50	10	5.4
C5SEM25.4X37C	50	25.4	55	37	22	-	9.525	4.6
C5SEM27X40C	50	27	58	40	21	20	12	6.3
C5SEM31.75X60C	50	31.75	64	60	30	-	12.7	6
C5SEM32X40C	50	32	63	40	24	20	14	7
C6SEM16X50C	63	16	38	50	17	28	8	5
C6SEM16X100C	63	16	38	100	17	78	8	5
C6SEM22X50C	63	22	47	50	19	28	10	5.4
C6SEM22X100C	63	22	47	100	19	78	10	5.4
C6SEM25.4X37C	63	25.4	55	37	22	15	9.525	4.6
C6SEM27X60C	63	27	58	60	21	38	12	6.3

Metric	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM27X100C	63	27	58	100	21	78	12	6.3
C6SEM31.75X60C	63	31.75	64	60	30	-	12.7	6
C6SEM32X60C	63	32	66	60	24	38	14	7
C6SEM38.1X60C	63	38.1	78	60	34	-	15.875	8
C6SEM40X60C	63	40	82	60	27	38	16	8
C8SEM16X50C	80	16	38	50	17	20	8	5
C8SEM16X100C	80	16	38	100	17	70	8	5
C8SEM22X50C	80	22	47	50	20	19	10	5.4
C8SEM22X100C	80	22	47	100	19	70	10	5.4
C8SEM25.4X50C	80	25.4	50	50	22	20	9.525	4.6
C8SEM27X50C	80	27	58	50	21	20	12	6.3
C8SEM27X100C	80	27	58	100	21	70	12	6.3
C8SEM31.75X50C	80	31.75	60	50	30	20	12.7	7
C8SEM32X50C	80	32	66	50	24	20	14	7
C8SEM32X100C	80	32	66	100	24	70	14	7
C8SEM38.1X50C	80	38.1	80	50	34	-	15.875	8
C8SEM40X60C	80	40	82	60	27	30	16	8

Applicable for 7 MPa coolant

Option: Wrench for lock screw

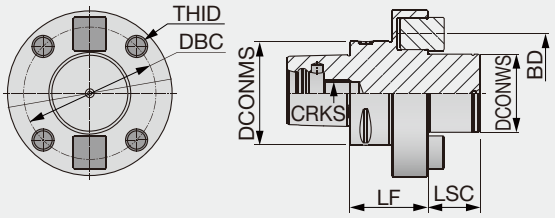
WRENCH SEMC / DIN6368



Metric	Inner diameter of cutter body	Screw size	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4 / 27	M12	32	225
WRENCHM16SEMC32	31.75 / 32	M16	36	250
WRENCHM20SEMC40	38.1 / 40	M20	40	280
WRENCHM24SEMC50	50	M24	50	315

C-FM

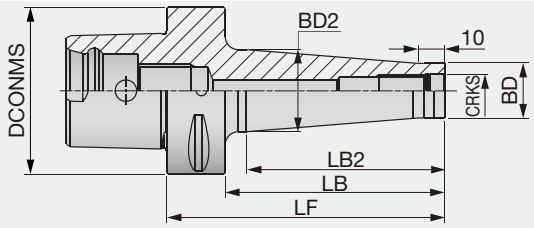
Arbor for face mill



Metric	DCONMS	DCONWS	LSC	LF	BD	DBC	THID	CRKS	Width of key	Height of key
C8FM60X60	80	60	40	60	128	101.6	M16	M20	25.4	12.4

C-ODP

Screw-clamp holder for modular heads

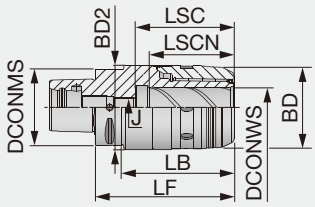


Metric	CRKS	DCONMS	BD	BD2	LF	LB	LB2
C4ODP10X53	M10	40	18	23	53	33	23
C4ODP12X53	M12	40	21	26	53	33	23
C4ODP16X53	M16	40	29	34	53	33	23
C5ODP10X53	M10	50	18	19.5	53	33	25
C5ODP10X103	M10	50	18	28	103	83	75
C5ODP12X53	M12	50	21	23.5	53	33	25
C5ODP12X103	M12	50	21	31	103	83	75
C5ODP16X53	M16	50	29	34	53	33	25
C5ODP16X103	M16	50	29	36	103	83	75
C6ODP10X55	M10	63	18	19.5	55	33	25
C6ODP10X105	M10	63	18	28	105	83	75
C6ODP10X130	M10	63	18	32	130	108	100
C6ODP12X55	M12	63	21	23.5	55	33	25
C6ODP12X105	M12	63	21	31	105	83	75
C6ODP12X130	M12	63	21	36	130	108	100
C6ODP16X55	M16	63	29	34	55	33	25
C6ODP16X105	M16	63	29	34	105	83	75
C6ODP16X130	M16	63	29	41	130	108	100

Applicable for 10 MPa coolant

TUNGCAP
C-TUNGMAX

Power chuck holder



Inch	DCONMS	Range min	Range max	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J
C6MAXIN3/4X3.74	2.48	0.250	0.750	0.750	2.000	2.087	3.780	2.913	2.15	2.64	M16
C6MAXIN1-1/4X4.448	2.48	0.250	1.250	1.250	2.717	2.756	4.528	3.622	2.76	3.23	M16

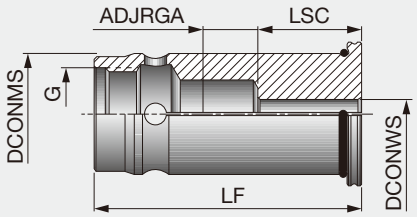
Metric	DCONMS	Range	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J
C5MAXIN20X100	50	6-20	20	51	53	95.5	75	55	67	M16
C6MAXIN20X95	63	6-20	20	51	53	95	73	55	67	M16
C6MAXIN32X115	63	6-32	32	69	70	115	93	70	82	M16
C8MAXIN20X95	80	6-20	20	51	53	95	65	55	67	M16
C8MAXIN32X115	80	6-32	32	69	70	115	85	70	82	M16

Applicable for 10 MPa coolant

Option : Wrench for TungMax collet

SC-SEAL

SC sealed straight collet



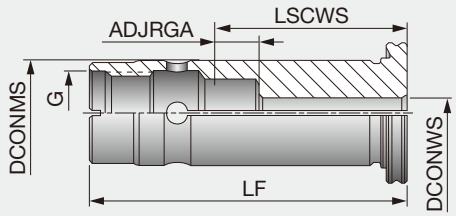
Inch	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC 3/4 SEAL 1/4	0.250	0.750	2.362	1.102	0.276	M16
SC 3/4 SEAL 5/16	0.313	0.750	2.362	1.102	0.276	M16
SC 3/4 SEAL 3/8	0.375	0.750	2.362	1.378	0.512	M16
SC 3/4 SEAL 7/16	0.438	0.750	2.362	1.575	0.315	M16
SC 3/4 SEAL 1/2	0.500	0.750	2.362	1.575	0.315	M16
SC 3/4 SEAL 5/8	0.625	0.750	2.362	1.543	0.354	M16
SC 1-1/4 SEAL 1/4	0.250	1.250	2.835	1.102	0.689	M2.4X1.5
SC 1-1/4 SEAL 5/16	0.313	1.250	2.835	1.102	0.689	M2.4X1.5
SC 1-1/4 SEAL 3/8	0.375	1.250	2.835	1.378	0.413	M2.4X1.5
SC 1-1/4 SEAL 1/2	0.500	1.250	2.835	1.575	0.217	M2.4X1.5
SC 1-1/4 SEAL 5/8	0.625	1.250	2.835	1.732	0.709	M2.4X1.5
SC 1-1/4 SEAL 3/4	0.750	1.250	2.835	1.811	0.630	M2.4X1.5
SC 1-1/4 SEAL 7/8	0.875	1.250	2.835	1.969	0.453	M2.4X1.5
SC 1-1/4 SEAL 1	1.000	1.250	2.835	2.008	0.453	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC20SEAL6	6	20	60	28	7	M16
SC20SEAL8	8	20	60	28	7	M16
SC20SEAL10	10	20	60	35	13	M16
SC20SEAL12	12	20	60	40	8	M16
SC20SEAL14	14	20	60	40	8	M16
SC20SEAL15	15	20	60	40	8	M16
SC20SEAL16	16	20	60	39	9	M16
SC32SEAL6	6	32	72	28	17	M24x1.5
SC32SEAL8	8	32	72	28	17	M24x1.5
SC32SEAL10	10	32	72	35	13	M24x1.5
SC32SEAL12	12	32	72	40	5	M24x1.5
SC32SEAL14	14	32	72	40	5	M24x1.5
SC32SEAL15	15	32	72	40	5	M24x1.5
SC32SEAL16	16	32	72	44	17.5	M24x1.5
SC32SEAL18	18	32	72	44	17.5	M24x1.5
SC32SEAL19	19	32	72	44	17.5	M24x1.5
SC32SEAL20	20	32	72	46	15.5	M24x1.5
SC32SEAL24	24	32	72	46	15.5	M24x1.5
SC32SEAL25	25	32	72	51	10.5	M24x1.5

Applicable for 10 MPa coolant

SC-SPR

SC straight collet



Inch	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC 3/4 SPR 1/4	0.250	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 5/16	0.313	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 3/8	0.375	0.750	2.362	1.890	0.512	M16
SC 3/4 SPR 7/16	0.438	0.750	2.362	1.417	0.315	M16
SC 3/4 SPR 1/2	0.500	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 5/8	0.625	0.750	2.362	1.897	0.354	M16
SC 1-1/4 SPR 1/4	0.250	1.250	2.835	1.791	0.689	M2.4X1.5
SC 1-1/4 SPR 5/16	0.313	1.250	2.835	1.791	0.689	M2.4X1.5
SC 1-1/4 SPR 3/8	0.375	1.250	2.835	1.791	0.413	M2.4X1.5
SC 1-1/4 SPR 1/2	0.500	1.250	2.835	1.792	0.217	M2.4X1.5
SC 1-1/4 SPR 5/8	0.625	1.250	2.835	2.441	0.709	M2.4X1.5
SC 1-1/4 SPR 3/4	0.750	1.250	2.835	2.441	0.630	M2.4X1.5
SC 1-1/4 SPR 7/8	0.875	1.250	2.835	2.422	0.453	M2.4X1.5
SC 1-1/4 SPR 1	1.000	1.250	2.835	2.417	0.409	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC20SPR6	6	20	60	35	7	M16
SC20SPR8	8	20	60	35	7	M16
SC20SPR10	10	20	60	48	13	M16
SC20SPR12	12	20	60	48	8	M16
SC20SPR14	14	20	60	48	8	M16
SC20SPR15	15	20	60	48	8	M16
SC20SPR16	16	20	60	48	9	M16
SC32SPR6	6	32	72	45	17	M24x1.5
SC32SPR8	8	32	72	45	17	M24x1.5
SC32SPR10	10	32	72	48	13	M24x1.5
SC32SPR12	12	32	72	45	5	M24x1.5
SC32SPR14	14	32	72	45	5	M24x1.5
SC32SPR15	15	32	72	59.5	19.5	M24x1.5
SC32SPR16	16	32	72	61.5	17.5	M24x1.5
SC32SPR18	18	32	72	61.5	17.5	M24x1.5
SC32SPR19	19	32	72	61.5	17.5	M24x1.5
SC32SPR20	20	32	72	61.5	15.5	M24x1.5
SC32SPR24	84	32	72	55.5	10.5	M24x1.5
SC32SPR25	25	32	72	61.5	10.5	M24x1.5

PRESET SC CAP

Preset screw for SC collets

Fig. 1

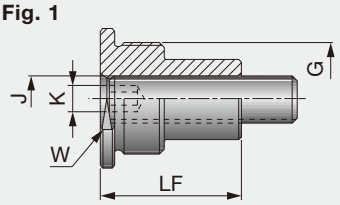
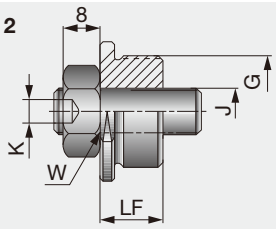
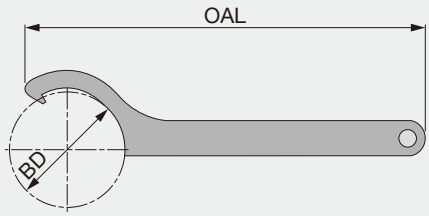


Fig. 2



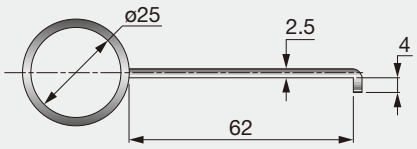
Metric	LF	W	J	G	Range	Key	Collet size	Fig.
PRESETSCCAP8X1.25L	28	16	M8x25	M16	6-8	4	SC20	1
PRESETSCCAP8X1.25	15	16	M8x25	M16	10-16	4	SC20	2
PRESETSCCAP10X1.5L	30	27	M10x30	M24x1.5	6-14	5	SC32	1
PRESETSCCAP10X1.5	13.5	27	M10x30	M24x1.5	16-25	5	SC32	2

Wrench



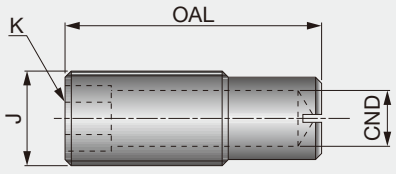
Metric	BD	OAL
WRENCHMAXIN20HOOK	26	205
WRENCHMAXIN32HOOK	68	240

SC collet extracting hook



Metric
EXTRACTORSCCOLLETS

Preset screw

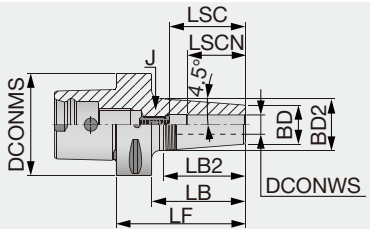


Metric	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

TUNGCAP

C-SRKIN

Shrink holder



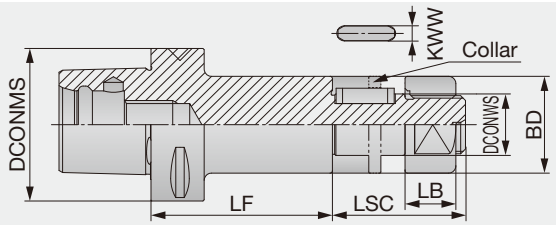
Inch	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J
C6SRKIN1/4X3.150	2.48	0.25	0.827	1.063	3.15	2.363	1.5	0.98	1.42	M5
C6SRKIN5/16X3.150	2.48	0.312	0.827	1.063	3.15	2.363	1.5	0.98	1.42	M6
C6SRKIN3/8X3.150	2.48	0.375	0.945	1.26	3.15	2.363	2	1.22	1.65	M8
C6SRKIN1/2X3.150	2.48	0.5	0.945	1.26	3.15	2.363	2	1.42	1.85	M10
C6SRKIN5/8X3.35	2.48	0.625	1.063	1.339	3.35	2.563	1.75	1.54	1.97	M12
C6SRKIN3/4X3.35	2.48	0.75	1.299	1.654	3.35	2.563	2.25	1.61	2.05	M16
C6SRKIN1X3.55	2.48	1	1.732	2.087	3.55	2.763	2.25	1.85	2.28	M16
C6SRKIN11/4X3.75	2.48	1.25	1.732	2.087	3.75	2.963	2.25	1.85	2.28	M16

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J
C4SRKIN6X75	40	6	21	27	75	55	38.1	25	36	M5
C4SRKIN8X75	40	8	21	27	75	55	38.1	25	36	M6
C4SRKIN10X75	40	10	24	32	75	55	50.8	31	42	M8
C4SRKIN12X75	40	12	24	32	75	55	50.8	36	47	M10
C4SRKIN14X80	40	14	27	34	80	60	44.5	36	47	M10
C4SRKIN16X80	40	16	27	34	80	60	44.5	39	50	M12
C4SRKIN18X80	40	18	33	42	80	60	57.2	39	50	M12
C4SRKIN20X85	40	20	33	42	85	65	57.2	41	52	M16
C5SRKIN6X75	50	6	21	27	75	55	38.1	25	36	M5
C5SRKIN8X75	50	8	21	27	75	55	38.1	25	36	M6
C5SRKIN10X75	50	10	24	32	75	55	51.3	31	42	M8
C5SRKIN12X75	50	12	24	32	75	55	51.3	36	47	M10
C5SRKIN14X80	50	14	27	34	80	60	44.5	36	47	M10
C5SRKIN16X80	50	16	27	34	80	60	44.5	39	50	M12
C5SRKIN18X80	50	18	33	42	80	60	57.2	39	50	M12
C5SRKIN20X85	50	20	33	42	85	65	57.2	41	52	M16
C5SRKIN25X90	50	25	44	53	90	70	57.2	47	58	M16
C6SRKIN6X80	63	6	21	27	80	58	38.1	25	36	M5
C6SRKIN8X80	63	8	21	27	80	58	38.1	25	36	M6
C6SRKIN10X80	63	10	24	32	80	58	50.8	31	42	M8
C6SRKIN12X80	63	12	24	32	80	58	50.8	36	47	M10
C6SRKIN14X85	63	14	27	34	85	63	44.5	36	47	M10
C6SRKIN16X85	63	16	27	34	85	63	44.5	39	50	M12
C6SRKIN18X85	63	18	33	42	85	63	57.2	39	50	M12
C6SRKIN20X85	63	20	33	42	85	63	57.2	41	52	M16
C6SRKIN25X90	63	25	44	53	90	68	57.2	47	58	M16
C6SRKIN32X95	63	32	44	53	95	73	57.2	47	58	M16

Applicable for 10 MPa coolant

C-SCA

Slot milling holder

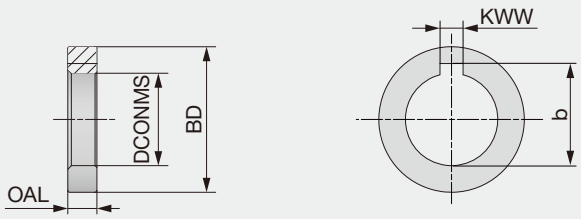


Metric	DCONMS	DCONWS	LF	BD	LSC	LB	Width of key KWM	Height of key
C6SCA25.4-075	63	25.4	75	40	55	21	6.35	2.38
C6SCA31.75-075	63	31.75	75	46	60	26	7.92	3.17
C8SCA25.4-090	80	25.4	90	40	55	21	6.35	2.38
C8SCA31.75-090	80	31.75	90	46	60	26	7.92	3.17

Collars for slot mills are not included

SCA

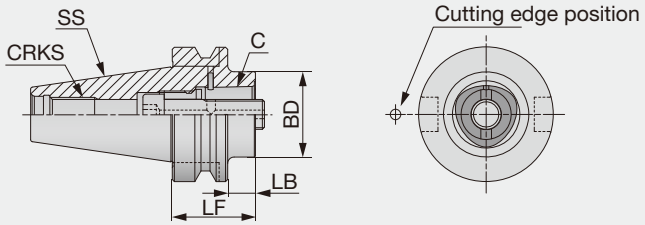
Collar for slot milling holders



Metric	BD	DCONMS	b	KWW	OAL
SCA25.4-02	40	25.4	28.1	6.35	3, 5, 7, 8, 10, 12, 14
SCA31.75-02	46	31.75	35.2	7.92	3, 5, 7, 8, 10, 12, 14

BT-FC

Basic holder for BT shank with dual contact



Metric	C	SS	BD	LF	LB	CRKS	Nm(1)	Wrench size
BT40FC-C4-040	C4	40	40	40	13	M16	55	8
BT40FC-C5-050	C5	40	50	50	23	M16	95	10
BT40FC-C6-075	C6	40	63	75	48	M16	170	10
BT50FC-C4-040	C4	50	40	40	2	M24	55	8
BT50FC-C4-070	C4	50	40	70	32	M24	55	8
BT50FC-C5-040	C5	50	50	40	2	M24	95	10
BT50FC-C5-080	C5	50	50	80	42	M24	95	10
BT50FC-C6-050	C6	50	63	50	12	M24	170	14
BT50FC-C6-100	C6	50	63	100	62	M24	170	14
BT50FC-C8-070	C8	50	80	70	32	M24	170	14
BT50FC-C8-120	C8	50	80	120	82	M24	170	14

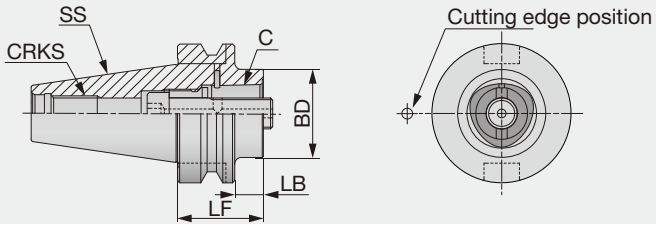
Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

TUNGCAP

BT-FC-T

Basic holder for BT shank with dual contact (for turning on multi task machines)



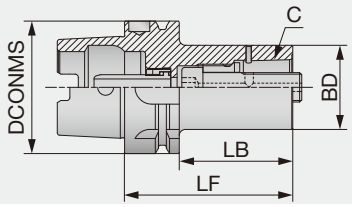
Metric	C	SS	BD	LF	LB	CRKS	Nm(1)	Wrench size
BT40FC-C4-040T	C4	40	40	40	13	M16	55	8
BT40FC-C5-050T	C5	40	50	50	23	M16	95	10
BT50FC-C6-050T	C6	50	63	50	12	M24	170	14
BT50FC-C8-070T	C8	50	80	70	32	M24	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

HSK-A-C/-T

Basic holder for HSK shank



Metric	DCONMS	C	BD	LF	LB	Nm(1)	Wrench size
HSK63A-C4-080T*	63	C4	40	80	54	55	8
HSK63A-C5-090T*	63	C5	50	90	64	95	10
C5ADHSKA100WHX100	100	C5	50	100	71	95	10
HSK63A-C6-110T*	63	C6	63	110	74	170	14
C6ADHSKA100WHX110	100	C6	63	110	81	170	14
HSK100A-C6-110	100	C6	63	110	81	170	14
C8ADHSKA100WHX120	100	C8	80	120	91	170	14
HSK100A-C8-120	100	C8	80	120	91	170	14

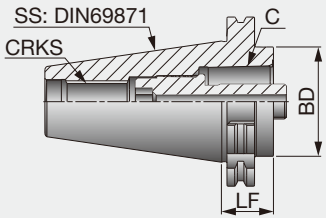
* HSK Standards ICTM with ISO 12164-3

(1) Recommended clamping torque (N·m)

Applicable for 7 MPa coolant. To enable clamping the part to be attached, first remove the cooling tube. Option: Cooling tube wrench

C-ADSKA

Basic holder for DIN69871 Form AD/ADB tapered shank



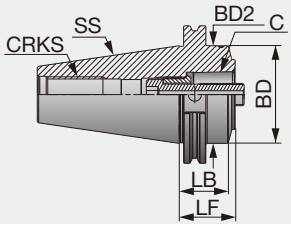
Metric	C	SS	BD	LF	CRKS	Nm(1)	Wrench size
C4ADSKA40X30	C4	40	40	30	M16	55	8
C5ADSKA40X30	C5	40	50	30	M16	95	10
C5ADSKA50X30ADB	C5	50	50	30	M24	95	10
C6ADSKA50X30	C6	50	63	30	M24	170	14
C8ADSKA50X70ADB	C8	50	80	70	M24	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-ADCAT

Basic holder for caterpillar AD/ADB tapered shank



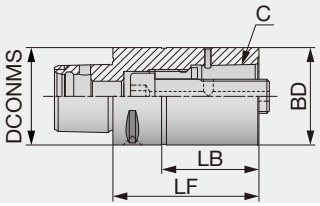
Metric	C	SS	BD	BD2	LF	LB	CRKS	Nm(1)	Wrench size
C4ADCATI40X40	C4	40	40	44.5	40	35	5/8-11	55	8
C5ADCATI40X90	C5	40	50	45.2	90	35	5/8-11	95	10
C5ADCATI50X40	C5	50	50	69.9	40	35	1-8	95	10
C6ADCATI50X50	C6	50	63	69.85	50	37	1-8	170	14
C8ADCATI50X100	C8	50	80	70.1	100	35	1-8	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-EX

Extension adapter



Metric	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C3EXC3X060	C3	32	32	60	-	45	7
C3EXC3X080	C3	32	32	80	-	45	7
C4EX-060	C4	40	40	60	40	65	8
C4EX-080	C4	40	40	80	60	65	8
C5EX-080	C5	50	50	80	60	95	10
C5EX-100	C5	50	50	100	80	95	10
C6EX-100	C6	63	63	100	78	170	14
C6EX-140	C6	63	63	140	118	170	14
C8EX-100	C8	80	80	100	70	170	14
C8EX-160	C8	80	80	160	130	170	14

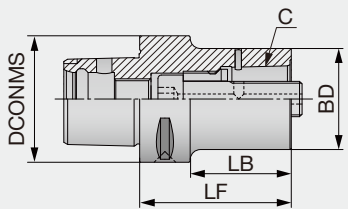
Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

TUNGCAP

C-RE

Reduction adapter



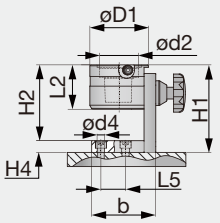
Metric	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C5-C4RE-060	C4	50	40	60	40	55	8
C5-C4RE-080	C4	50	40	80	60	55	8
C6-C4RE-080	C4	63	40	80	58	55	8
C6-C5RE-080	C5	63	50	80	58	95	10
C6-C5RE-120	C5	63	50	120	98	95	10
C8-C4RE-070	C4	80	40	70	40	55	8
C8-C5RE-080	C5	80	50	80	50	95	10
C8-C6RE-080	C6	80	63	80	50	170	14
C8-C6RE-120	C6	80	63	120	90	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

MULTI CLAMP (TungCap)

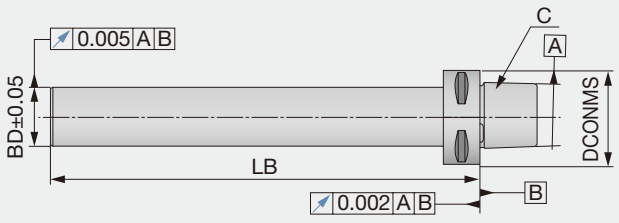
Multi-clamp fixture for TungCap



Metric	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	ød4
MULTICLAMPC3	C3	32	70	64	128	109	19	104	40	12.5
MULTICLAMPC4	C4	40	78	67	137	118	19	104	40	12.5
MULTICLAMPC5	C5	50	85	72	142	123	19	104	40	12.5
MULTICLAMPC6	C6	63	95	72	142	123	19	104	40	12.5
MULTICLAMPC8	C8	80	130	90	178	159	19	144	85	12.5

TungCap Test bar

Test bar

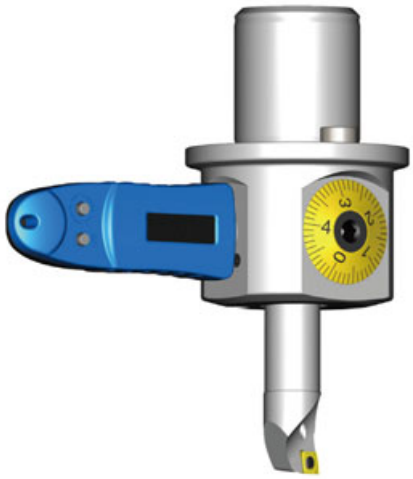


Metric	C	DCONMS	BD	LB
C3-TB-160	C3	32	25	160
C4-TB-160	C4	40	25	160
C5-TB-160	C5	50	30	180
C6-TB-220	C6	63	35	220
C8-TB-250	C8	80	40	250

SWISS TOOLS

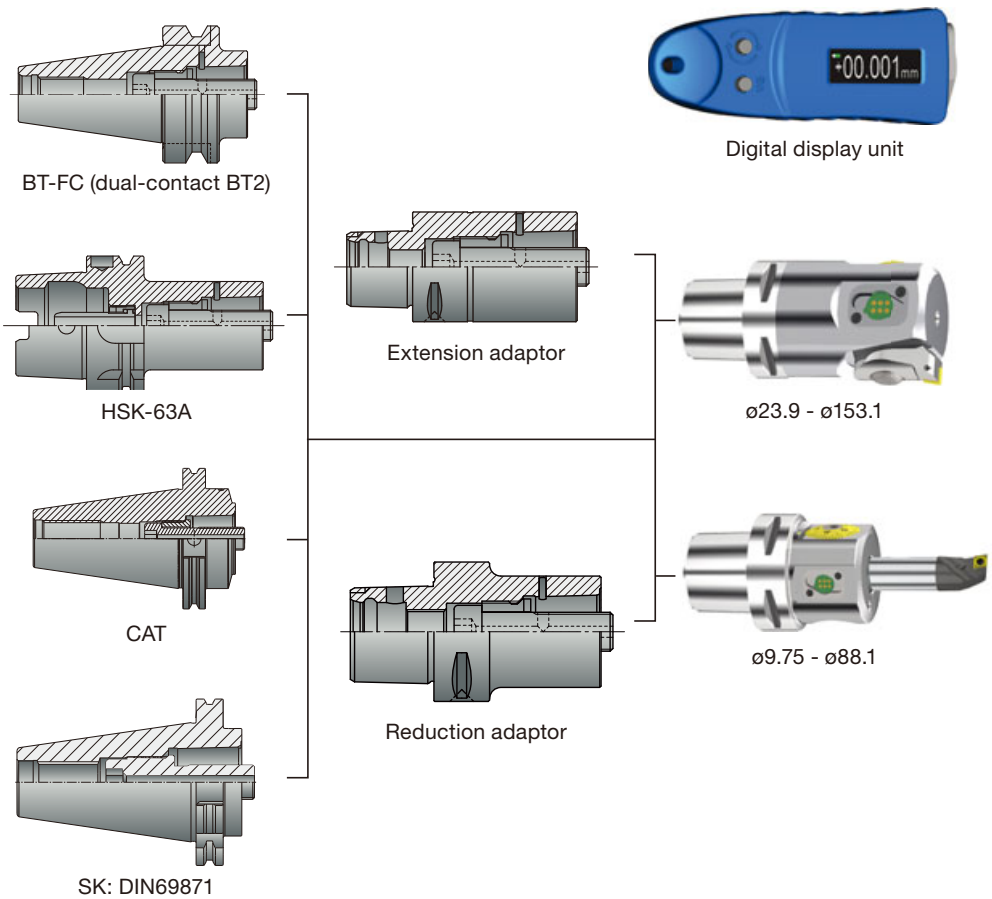
Fine boring heads with digital display





Fine boring head system makes **micron adjustment easy and simple in the machine**

- Easy but accurate adjustment: 1 µm accuracy is possible on the machine
- Digital display: the display unit is docked on the boring head for micron adjustment
- Economy: One digital unit can be used with all fine boring heads
- Internal coolant for smooth chip control
- Also available with TungCap connection, allowing it for use in multi-tasking machines

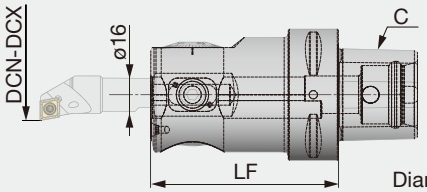


Reference pages: K056 - K057

TUNGCAP

TungCap FBHO-DE

Fine boring head for digital display ø9.75 mm - ø88.1 mm



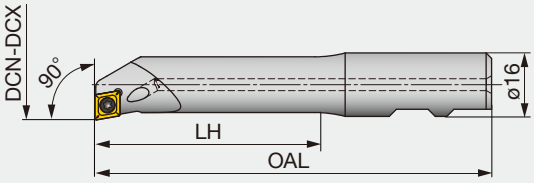
Diameter adjustment range 2.7mm

Metric	C	DCN	DCX	LF	Boring bar
BT4-FBHO-DE-1690	BT40	9.75	88.1	90	254.0**.006... / 256...
HA6-FBHO-DE-1695	HSK-A63	9.75	88.1	95	254.0**.006... / 256...
PSC63-FBHO-DE-1690	C6	9.75	88.1	90	254.0**.006... / 256...
PSC50-FBHO-DE-1670	C5	9.75	88.1	70	254.0**.006... / 256...
PSC40-FBHO-DE-1665	C4	9.75	88.1	65	254.0**.006... / 256...

Applicable for 7 MPa coolant

TungCap 254.0**.006.**

Boring bar



Metric	DCN	DCX	LH	OAL	Insert
254.010.006.075	9.75	15.1	30	75	CC**0602...
254.015.006.090	14.75	20.1	51	90	CC**0602...
254.020.006.105	19.75	25.1	72	105	CC**0602...
254.025.006.115	24.75	30.1	82	115	CC**0602...

Applicable for 7 MPa coolant

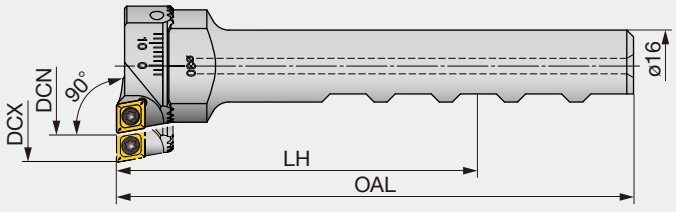
SPARE PARTS




Designation	Clamping screw	Wrench
254.0**.006.**	CSTB-2.5S	T-8F

TungCap 256.0**.0**.115

Boring bar



Metric (Shank)	Metric (Insert holder)	DCN	DCX	LH	OAL	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**0602...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**0602...

Applicable for 7 MPa coolant

SPARE PARTS




Designation	Clamping screw	Wrench
256.0**.006.0**	CSTB-2.5S	T-8F

Reference pages: 254.0**.006.**: Inserts → B112 -, CBN → B190, PCD → B213
256.0**.0**.115: Inserts → B112 -, CBN → B190, PCD → B213

TungCap FBHS-DE

Fine boring head for digital display ø23.9 mm - ø153.1 mm

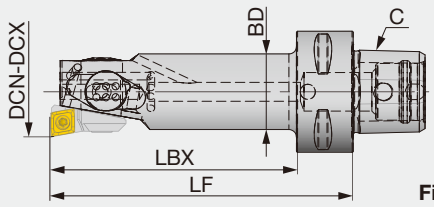


Fig. 1

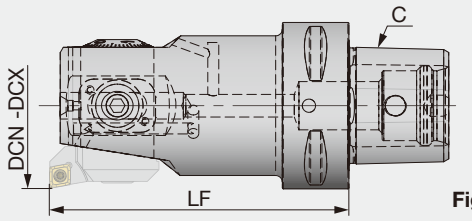


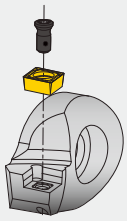
Fig. 2

Metric	C	DCN	DCX	LF	LBX	BD	Fig.	Insert holder
PSC32-FBHS-DE-24	C3	23.9	31.1	80	65	20	1	314.011.024.006/007
PSC32-FBHS-DE-24	C3	29.9	37.1	80	65	20	1	314.011.030.006/007
PSC32-FBHS-DE-31	C3	30.9	40.1	90	75	25	1	314.013.031.006/007
PSC32-FBHS-DE-31	C3	37.5	47.1	90	75	25	1	314.013.038.006/007
PSC40-FBHS-DE-40	C4	39.9	51.1	90	70	32	1	314.017.040.006/007
PSC40-FBHS-DE-40	C4	47.5	59.1	90	70	32	1	314.017.048.006/007
PSC50-FBHS-DE-51	C5	50.9	67.1	90	-	-	2	314.022.051.006/007
PSC50-FBHS-DE-51	C5	64.9	81.1	90	-	-	2	314.022.065.006/007
PSC50-FBHS-DE-67	C5	66.9	87.1	100	-	-	2	314.030.067.009/011
PSC50-FBHS-DE-67	C5	84.9	105.1	100	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-87	C6	86.9	116.1	120	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-87	C6	104.9	134.1	120	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-116	C6	115.9	153.1	150	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-116	C6	133.9	171.1	150	-	-	2	314.030.085.009/011

Insert holders are sold separately.
Applicable for 7 MPa coolant

TungCap 314.0**.0**.0**

Insert holder of fine boring head for digital display ø23.9 mm - ø153.1 mm



Metric (Insert holder)	Insert
314.011.024.006	CC**0602...
314.013.031.006	CC**0602...
314.017.040.006	CC**0602...
314.022.051.006	CC**0602...
314.030.067.009	CC**08T3..

SPARE PARTS





Designation	Clamping screw	Wrench
314.0**.0**.0**	CSTB-2.5S	T-8F

TungCap GH1-DA

Digital display unit



Metric
GH1-DA2.BG0.077

Reference pages: 314.0**.0**.0**: Inserts → B112 -, CBN → B190, PCD → B213

Nomenclature for clamping units

Clamping units

Clamping units for non-rotating and rotating tools, designed for turret lathes

- Clamping units for standard square and round shanks
- Clamping units for PSC Bolt-on clamp interface
- Clamping units for Vertical Disc Interface (VDI DIN69880)



Standard interface



PBI



VDI (DIN69880)

Clamping units

	For external (Tool setting direction cross X)	For internal (Tool setting direction straight Z)
Turning clamping unit	C*-DTO-*C-***-R/L	C*-DTI-*C-****-R/L
		
Driven clamping unit	C*-DDC-*C-****	C*-DDS-*C-****
		

Nomenclature for clamping units

Nomenclature for static clamping unit

C4 - DT I - IC - ABC401 - R

① ② ③ ④ ⑤ ⑥ ⑦

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number	⑦ Hand
C3	D	T Static (turning tool)	O For external turning	IC Internal	Manufacturer's symbol	R Right
C4			I For internal turning	OC External		L Left
C5			S Others			
C6						
C8						

Nomenclature for driven clamping unit

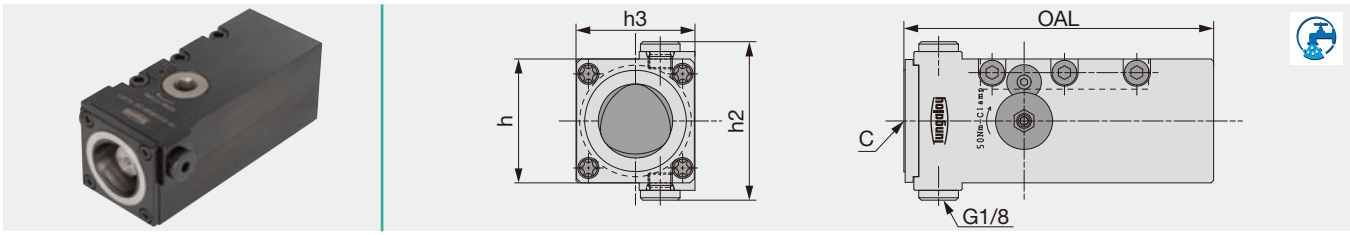
C5 - DDC - OC - ABC501

① ② ③ ④ ⑤ ⑥

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number
C3	D	D Driven (rotating tool)	S Straight: Z	OC External	Manufacturer's symbol
C4			C Cross: X	WC Internal / External	
C5			X Others		
C6					
C8					

C-DTOSR/L

Manual clamping unit, square shank



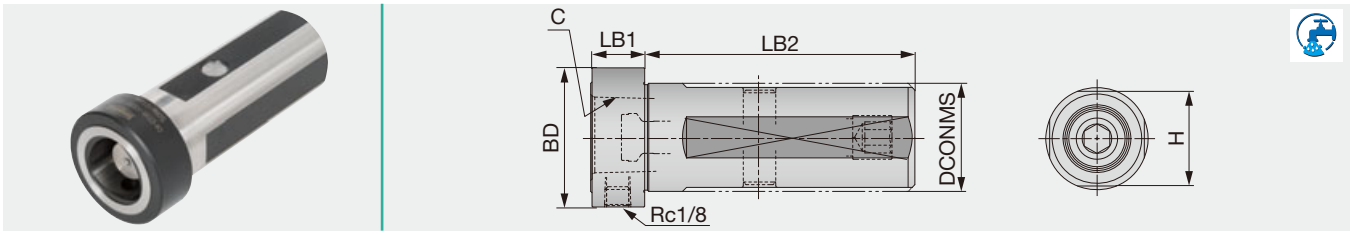
Metric	C	Turret size h	h3	h2	OAL	Torque(1)
C3-DTOS4038R/L	C3	40	38	62	95	35
C4-DTOS5048R/L	C4	50	48	64	125	50
C5-DTOS6464R/L	C5	60	64	68	145	70

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-DTIR

Manual clamping unit, round shank



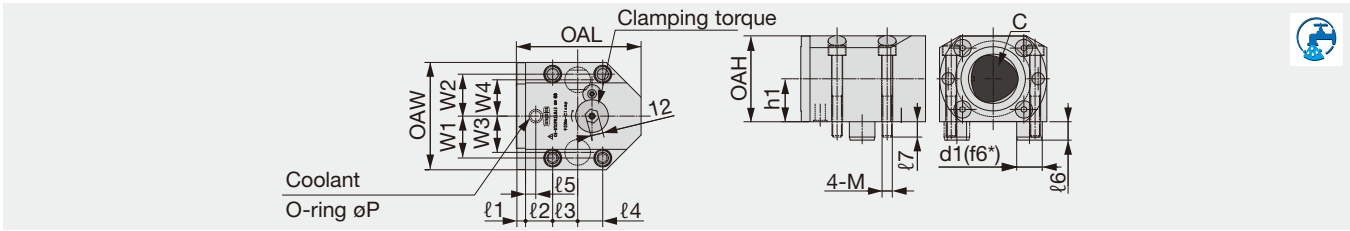
Metric	C	DCONMS	BD	H	LB2	LB1	Torque(1)
C3-DTIR-08018-D32	C3	32	41.5	30	80	18	35
C4-DTIR-10020-D40	C4	40	51.5	37	100	20	50
C4-DTIR-12020-D50	C4	50	51.5	47	120	20	50
C5-DTIR-12024-D50	C5	50	61.5	47	120	24	70

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-DTOFR/L

Manual clamping unit, fixed type



Metric	C	OAH	h1	OAL	OAW	W1 W2	W3 W4	ℓ1	ℓ2	ℓ3 ℓ4	ℓ5	ℓ6	ℓ7	d1(f6*)	P	M	Torque(1)
C5-DTOFR/L32048	C5	64	32	100	92	35	31	8	19	21	7	11	15	20	P8	M10	70
C6-DTOFR/L42060	C6	84	42	122	105	41	35.5	9	26.5	24.5	10	18	15	25	P10	M10	90
C8-DTOFR/L50088	C8	100	50	146	133	55	46	12	33	43	13	19	20	32	P11	M12	130

Applicable for 7 MPa coolant

*f6 tolerance: *d*20 & 25 = -0.022 / -0.033, *d*32 = -0.025 / -0.041

(1) Recommended clamping torque (N·m)

Clamping units & tools for CNC lathes

Selection for External turning

Fig. 1

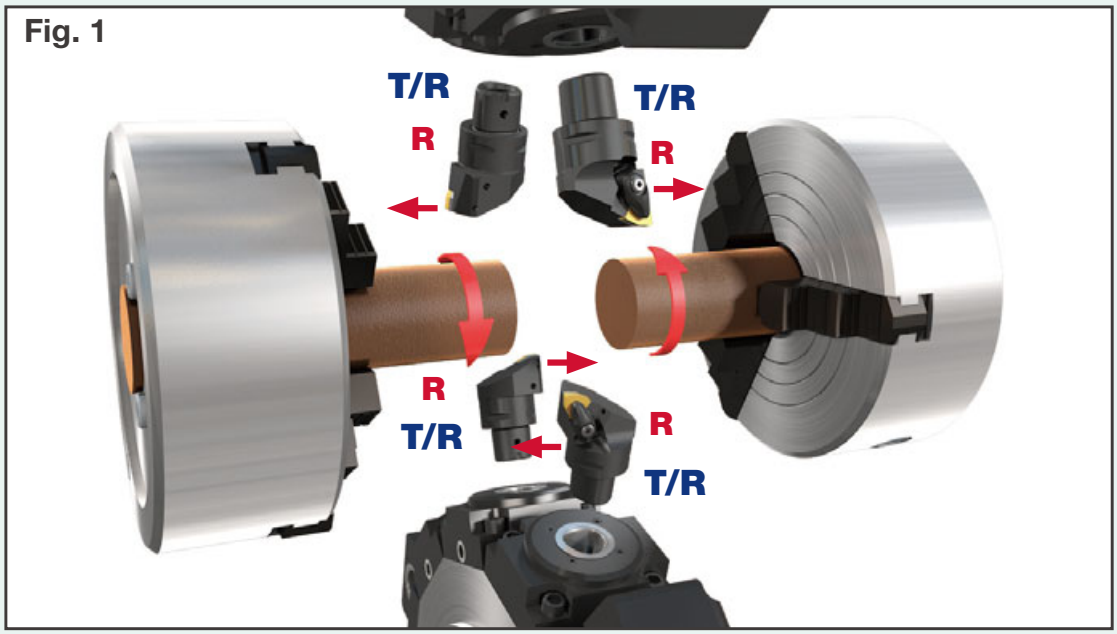
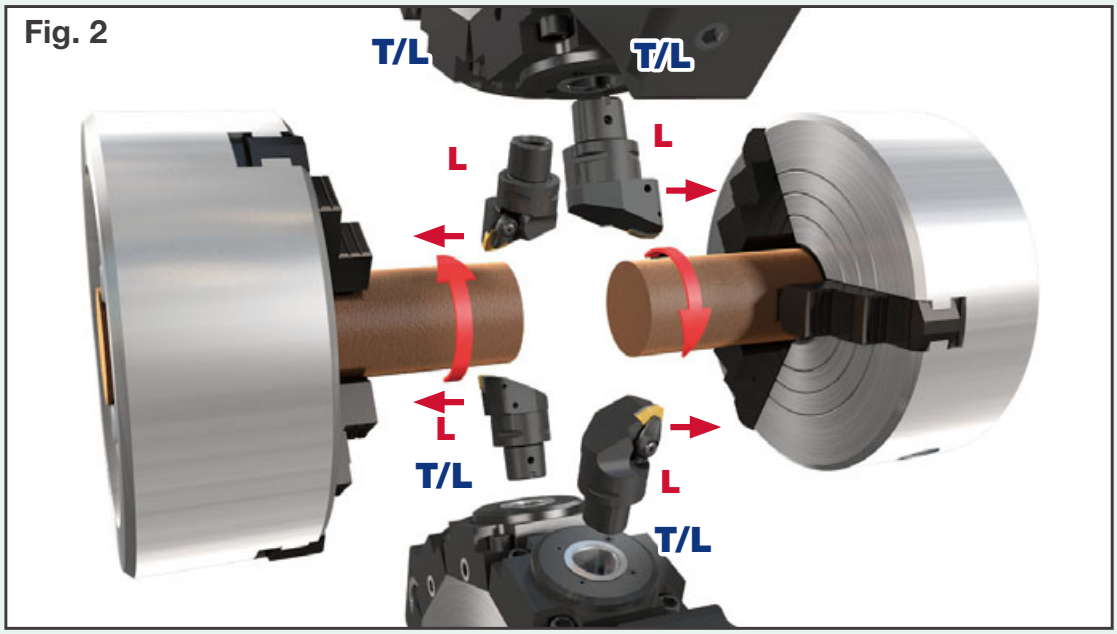


Fig. 2



R: Right hand cutting tool L: Left hand cutting tool
T/R: Right hand clamping unit T/L: Left hand clamping unit

Clamping units & tools for CNC lathes

Selection for Internal turning

Fig. 1

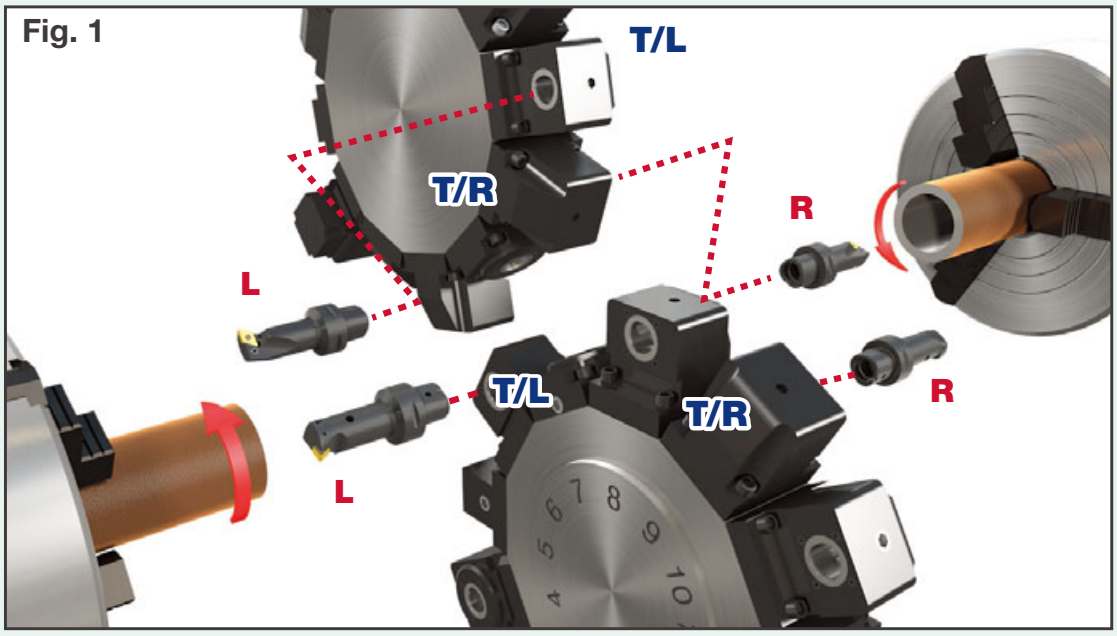
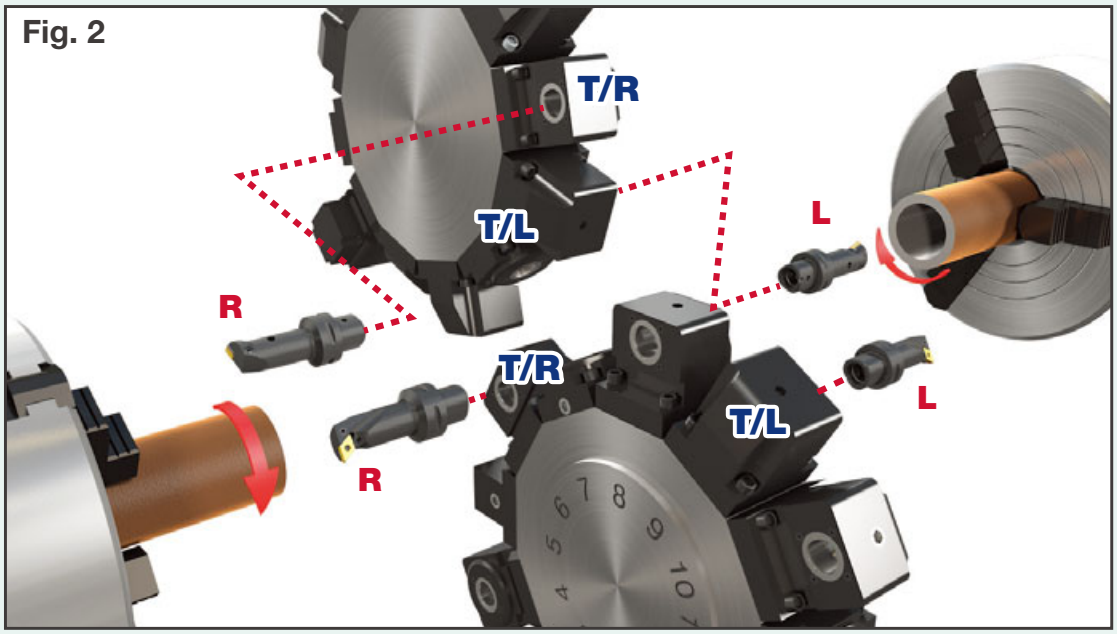


Fig. 2



R: Right hand cutting tool L: Left hand cutting tool
T/R: Right hand clamping unit T/L: Left hand clamping unit

Clamping torque

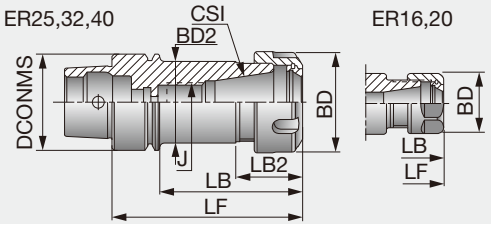


PSC size	Tightening torque recommendation (N·m)	Clamping force (KN)	Torque wrench size	
			Static tool unit	Driven tool unit
C3	35	15	8	6
C4	50	20	10	8
C5	70 (75*)	25	12	10
C6	90 (110*)	30	12	12
C8	130	40	12	12

* Torque value for driven tool unit

HSK E-ER

ER collet chuck holder (HSK-E)



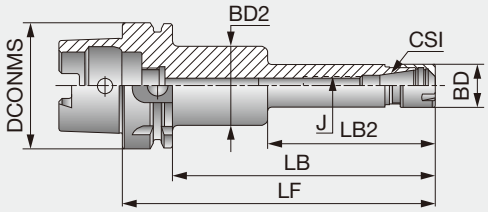
Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKE32ER16X60	32	ER16	0.5-10	60	40	21.5	28	22.4	-
HSKE32ER20X60	32	ER20	1-13	6	40	26	34	25.4	-
HSKE32ER25X65	32	ER25	1-16	65	45	30	42	25.8	-
HSKE40ER16X60	40	ER16	0.5-10	60	40	-	28	-	-
HSKE40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10
HSKE40ER20X80	40	ER20	1-13	80	60	-	34	-	M12
HSKE40ER25X80	40	ER25	1-16	80	60	28	42	34	M18X1.5
HSKE40ER32X80	40	ER32	2-20	80	60	31	50	40.1	M22X1.5
HSKE50ER16X100 (1)	50	ER16	0.5-10	100	74	-	28	-	M10
HSKE50ER16X100M (1)(3)	50	ER16	0.5-10	100	74	-	22	-	M10
HSKE50ER16X80 (1)	50	ER16	0.5-10	80	54	-	28	-	M10
HSKE50ER20X80 (1)	50	ER20	1-13	80	54	-	34	-	M10
HSKE50ER25X80 (1)	50	ER25	1-16	80	54	28	42	32.4	-
HSKE50ER32X80 (1)	50	ER32	2-20	80	54	31	50	40.4	-
HSKE50ER32X100 (1)	50	ER32	2-20	100	74	31	50	40.4	M22X1.5
HSKE63ER16X80 (2)	63	ER16	0.5-10	80	54	-	28	-	M10
HSKE63ER16X100 (2)	63	ER16	0.5-10	100	74	-	28	-	M10
HSKE63ER20X75 (2)	63	ER20	1-13	75	49	-	34	-	-
HSKE63ER32X100 (2)	63	ER32	2-20	100	75	-	50	-	M22X1.5

• Applicable for 10 MPa coolant
• Equipped with nut ER 16 MINI
(1) Balanced to G2.5 max.n: 35,000 min^{-1}
(2) Balanced to G2.5 max.n: 35,000 min^{-1}
(3) Balanced to G2.5 max.n: 30,000 min^{-1}

Option: Wrench for ER collet

HSK A-ER M

ER Mini collet chuck holder (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER16X100M	63	ER16	0.5-10	100	74	-	22	-	M10
HSKA63ER16X120M	63	ER16	0.5-10	120	94	78	22	40	M10
HSKA63ER16X160M	63	ER16	0.5-10	160	134	85	22	40	M10
HSKA63ER20X100M	63	ER20	1-13	100	74	-	28	-	M12
HSKA63ER20X120M	63	ER20	1-13	120	94	-	28	-	M12
HSKA63ER20X160M	63	ER20	1-13	160	134	85	28	45	M12
HSKA100ER16X100M (1)	100	ER16	0.5-10	100	71	-	22	-	M10
HSKA100ER16X160M (1)	100	ER16	0.5-10	160	131	85	22	40	M10
HSKA100ER20X100M (1)	100	ER20	1-13	100	71	-	28	-	M12
HSKA100ER20X160M (1)	100	ER20	1-13	160	131	85	28	45	M12

• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min^{-1}

Option: Wrench for ER collet

Reference pages


ER collet K118 -


Nut K142, K143

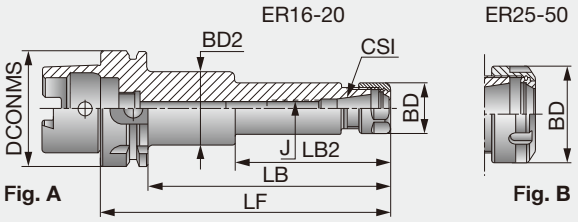

Preset screw K145


Wrench K144, K149


Cooling tube K148

HSK A-ER

ER collet chuck holder (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKA40ER16X60	40	ER16	0.5-10	60	40	-	28	-	M10	A
HSKA40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10	A
HSKA50ER20X100	50	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKA63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKA63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKA63ER20X100	63	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER20X120	63	ER20	1-13	120	94	-	34	-	M12	A
HSKA63ER20X160	63	ER20	1-13	160	134	85.0	34	45	M12	A
HSKA100ER16X100 (1)	100	ER16	0.5-10	100	71	-	28	-	M10	A
HSKA100ER16X160 (1)	100	ER16	0.5-10	160	131	85	28	40	M10	A
HSKA100ER20X100 (1)	100	ER20	1-13	100	71	-	34	-	M12	A
HSKA100ER20X160 (1)	100	ER20	1-13	160	131	85	34	45	M12	A
HSKA40ER25X80	40	ER25	1-16	80	60	28	42	32.4	M18x1.5	B
HSKA40ER25X100	40	ER25	1-16	100	80	28	42	32.4	M16	B
HSKA40ER32X100	40	ER32	2-20	100	80	31	50	40.4	M22x1.5	B
HSKA63ER25X80	63	ER25	1-16	80	54	-	42	-	M16	B
HSKA63ER25X100	63	ER25	1-16	100	74	-	42	-	M16	B
HSKA63ER25X120	63	ER25	1-16	120	94	-	42	-	M16	B
HSKA63ER25X160	63	ER25	1-16	160	134	-	42	-	M16	B
HSKA63ER32X80	63	ER32	2-20	80	54	31	50	40.4	M22x1.5	B
HSKA63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKA63ER32X120	63	ER32	2-20	120	94	-	50	-	M22x1.5	B
HSKA63ER32X140	63	ER32	2-20	140	114	-	50	-	M22x1.5	B
HSKA63ER32X160	63	ER32	2-20	160	134	-	50	-	M22x1.5	B
HSKA63ER40X80	63	ER40	3-26	80	54	34	63	50.4	-	B
HSKA63ER40X100	63	ER40	3-26	100	74	34	63	50.4	M28x1.5	B
HSKA63ER40X120	63	ER40	3-26	120	94	34	63	50.4	M28x1.5	B
HSKA100ER25X100	100	ER25	1-16	100	71	-	42	-	M16	B
HSKA100ER25X120	100	ER25	1-16	120	91	-	42	-	M16	B
HSKA100ER25X160	100	ER25	1-16	160	134	-	42	-	M16	B
HSKA100ER32X100	100	ER32	2-20	100	71	-	50	-	M22x1.5	B
HSKA100ER32X120	100	ER32	2-20	120	91	-	50	-	M22x1.5	B
HSKA100ER32X160	100	ER32	2-20	160	131	-	50	-	M22x1.5	B
HSKA100ER40X100	100	ER40	3-26	100	71	-	63	-	M28x1.5	B
HSKA100ER40X120	100	ER40	3-26	120	91	-	63	-	M28x1.5	B
HSKA100ER40X160	100	ER40	3-26	160	131	-	63	-	M28x1.5	B
HSKA100ER50X100	100	ER50	10-34	100	71	-	78	-	-	B

• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min^{-1}

Option: Wrench for ER collet

Reference pages


ER collet K118 -

Nut K142, K143

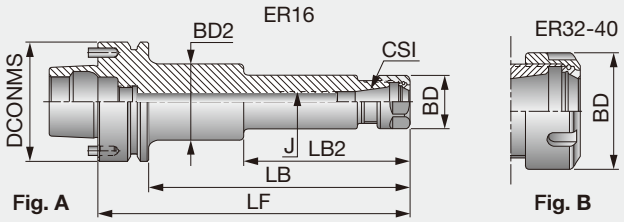
Preset screw K145

Wrench K144, K149

Cooling tube K148

HSK FM-ER

ER collet chuck holder (HSK-FM)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKFM63ER16X80	63	ER16	0.5-10	80	54	-	28	-	M10	A
HSKFM63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKFM63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKFM63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKFM63ER32X80	63	ER32	2-20	80	54	-	50	-	-	B
HSKFM63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKFM63ER40X80	63	ER40	3-26	80	54	32	63	50	-	B
HSKFM63ER40X100	63	ER40	3-26	100	74	32	63	50	M28x1.5	B

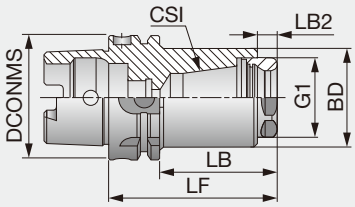
- Applicable for 10 MPa coolant
- The driving pins can be removed, turning the toolholder into a standard HSK F63 type.

Option: Wrench for ER collet

TUNGSHORT

HSK A-SHORT

ER collet chuck holder, short type (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	G1
HSKA63ER32SHORT	63	ER32	2-20	84.5	56.1	9.5	50	M40x1.5
HSKA100ER32SHORT	100	ER32	2-20	89.5	60.5	9.5	50	M40x1.5
HSKA100ER40SHORT	100	ER40	3-26	104.5	75.5	9.5	70	M50x1.5

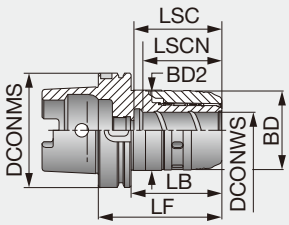
- Applicable for 10 MPa coolant
- Balanced to G6.3 max.n: 8,000 min^{-1}

Option: Wrench for ER collet

TUNGMAX

HSK A-TUNGMAX

Power chuck holder (HSK-A)



Metric	DCONMS	DCONWS	Range	LF	LB	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95	63	20	6-20	95	69	56	66	51	53
HSKA63MAXIN32X113	63	32	6-32	113	87	70	85	69	70
HSKA100MAXIN20X115 (1)	100	20	6-20	115	86	56	69	51	53
HSKA100MAXIN32X135 (1)	100	32	6-32	135	106	71	87	69	70

- Applicable for 10 MPa coolant

(1) Balanced to G6.3 max.n: 8,000 min^{-1}

Option: Wrench for TungMax collet

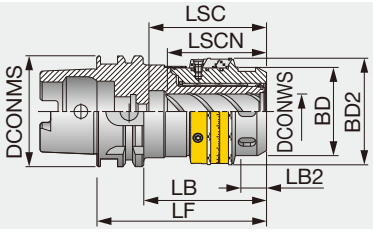
Reference pages

ER collet	Nut	Preset screw	Wrench	Cooling tube	Straight collet
K118 -	K142, K143	K145	K144, K149	K148	K127, K128

TUNGBALANCE

HSK A-TUNGMAX BIN

Power chuck holder with adjustable dynamic balance (HSK-A)



Metric	DCONMS	DCONWS	Range	LF	LB	LB2	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95BIN (1)	63	20	6-20	95	69	17.5	56	66	51	61
HSKA63MAXIN32X113BIN (1)	63	32	6-32	113	87	24.9	70	85	69	80

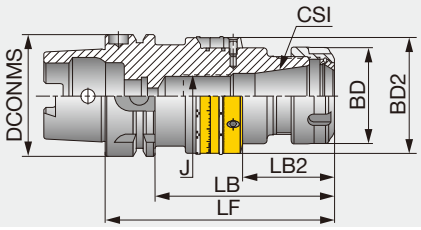
• Applicable for 10 MPa coolant

Option: Wrench for TungMax collet

(1) Chucks with taper size HSK A63 can be balanced by the balancing ring up to G2.5 at 20,000 min^{-1}.
(2) Chucks with taper size HSK A100 can be balanced by the balancing ring up to G2.5 at 18,000 min^{-1}.

HSK A-ER BIN

ER collet chuck holder with adjustable dynamic balance (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER32X120BIN	63	ER32	2-20	120	94	48	50	60	M22x1.5

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

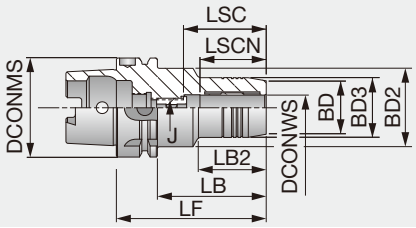
(1) Balanced to G2.5 max.n: 20,000 min^{-1}

Reference pages

ER collet K118 -
Nut K142, K143
Preset screw K145
Wrench K144, K149
Cooling tube K148
Straight collet K127, K128

HSK A-HYDRO

Hydraulic endmill chuck holder (HSK-A)



Metric	DCONMS	DCONWS	BD3	BD	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA50HYDRO6X80	50	6	26	23	42	80	54	35	27	37	M5
HSKA50HYDRO8X80	50	8	28	25	42	80	54	36	27	37	M6
HSKA50HYDRO16X95	50	16	38	34	42	95	69	52	42	52	M12x1
HSKA50HYDRO20X100	50	20	42	38	42	100	74	74	42	52	M16x1
HSKA63HYDRO6X80	63	6	26	23	50	80	54	33	27	37	M5
HSKA63HYDRO8X80	63	8	28	25	50	80	54	33	27	37	M6
HSKA63HYDRO10X85	63	10	30	27	50	85	59	39	32	42	M8x1
HSKA63HYDRO12X90	63	12	32	29	50	90	64	44	37	47	M10x1
HSKA63HYDRO14X90	63	14	34	30	50	90	64	46	37	47	M10x1
HSKA63HYDRO16X95	63	16	38	34	50	95	69	52	42	52	M12x1
HSKA63HYDRO18X95	63	18	40	36	50	95	69	52	42	52	M12x1
HSKA63HYDRO20X100	63	20	42	38	50	100	74	58	42	52	M16x1
HSKA63HYDRO25X120	63	25	50	46	50	120	94	94	48	58	M16x1
HSKA63HYDRO32X125	63	32	60	56	53	125	99	83	52	62	M16x1
HSKA80HYDRO6X85	80	6	26	23	50	85	59	37	27	37	M5
HSKA80HYDRO14X95	80	14	34	30	50	95	69	47	37	47	M10x1
HSKA80HYDRO16X100	80	16	38	34	50	100	74	52	42	52	M12x1
HSKA80HYDRO18X100	80	18	40	36	50	100	74	52	42	52	M12x1
HSKA80HYDRO20X105	80	20	42	38	50	105	79	52	42	52	M16x1
HSKA80HYDRO25X115	80	25	50	46	50	115	89	58	48	58	M16x1
HSKA100HYDRO6X85	100	6	26	23	63	85	56	29	27	37	M5
HSKA100HYDRO8X85	100	8	28	25	63	85	56	29	27	37	M6
HSKA100HYDRO10X90	100	10	30	27	63	90	61	35	32	42	M8x1
HSKA100HYDRO12X95	100	12	32	29	63	95	66	40	37	47	M10x1
HSKA100HYDRO14X95	100	14	34	30	63	95	66	42	37	47	M10x1
HSKA100HYDRO16X100	100	16	38	34	63	100	71	47	42	52	M12x1
HSKA100HYDRO18X100	100	18	40	36	63	100	71	48	42	52	M12x1
HSKA100HYDRO20X105	100	20	42	38	63	105	76	54	42	52	M16x1
HSKA100HYDRO25X115	100	25	50	46	63	115	86	51	48	58	M16x1
HSKA100HYDRO32X120	100	32	60	56	63	120	91	59	52	62	M16x1

- Applicable for 10 MPa coolant
- Reduction sleeves are available for d = 12, 20, 25, and 32mm.
- Chucking force will reduce when using a reduction sleeve.

Option: Clamping wrench

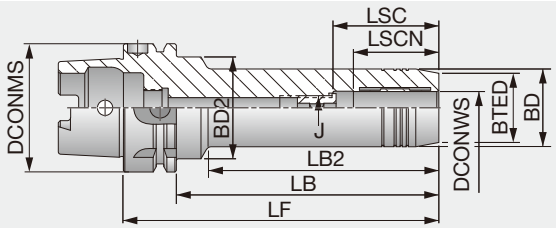
Reference pages

Straight collet K130
Cooling tube K148
Wrench K149

TUNGHYDRO

HSK A-HYDRO

Hydraulic endmill chuck holder, long type (HSK-A)



Metric	DCONMS	DCONWS	BD	BTED	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA63HYDRO6X150	63	6	26	23	50	150	124	103	27	37	M5
HSKA63HYDRO6X200	63	6	26	23	50	200	174	153	27	37	M5
HSKA63HYDRO8X150	63	8	28	25	50	150	124	104	27	37	M6
HSKA63HYDRO10X150	63	10	30	27	50	150	124	104	32	42	M8x1
HSKA63HYDRO10X200	63	10	30	27	50	200	174	154	32	42	M8x1
HSKA63HYDRO12X150	63	12	32	29	50	150	124	105	37	47	M10x1
HSKA63HYDRO12X200	63	12	32	29	50	200	174	155	37	47	M10x1
HSKA63HYDRO14X150	63	14	34	30	50	150	124	105	37	47	M10x1
HSKA63HYDRO16X150	63	16	38	34	50	150	124	106.5	42	52	M12x1
HSKA63HYDRO16X200	63	16	38	34	50	200	174	156.5	42	52	M12x1
HSKA63HYDRO20X150	63	20	42	38	50	150	124	108	42	52	M12x1
HSKA63HYDRO20X200	63	20	42	38	50	200	174	158	42	52	M12x1
HSKA63HYDRO25X150	63	25	50	46	50	150	124	-	48	58	M16x1
HSKA63HYDRO25X200	63	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO6X150	100	6	26	23	50	150	124	94	27	37	M6
HSKA100HYDRO6X200	100	6	26	23	50	200	174	144	27	37	M6
HSKA100HYDRO8X150	100	8	28	25	50	150	124	94.5	27	37	M6
HSKA100HYDRO8X200	100	8	28	25	50	200	174	144.5	27	37	M6
HSKA100HYDRO10X150	100	10	30	27	50	150	124	95	32	42	M8x1
HSKA100HYDRO10X200	100	10	30	27	50	200	174	145	32	42	M8x1
HSKA100HYDRO12X150	100	12	32	29	50	150	124	95.5	37	47	M10x1
HSKA100HYDRO12X200	100	12	32	29	50	200	174	145.5	37	47	M10x1
HSKA100HYDRO14X150	100	14	34	30	50	150	124	97	37	47	M10x1
HSKA100HYDRO14X200	100	14	34	30	50	200	174	147	37	47	M10x1
HSKA100HYDRO16X150	100	16	38	34	50	150	124	97.5	42	52	M12x1
HSKA100HYDRO16X200	100	16	38	34	50	200	174	147.5	42	52	M12x1
HSKA100HYDRO18X150	100	18	40	36	50	150	124	98	42	52	M12x1
HSKA100HYDRO18X200	100	18	40	36	50	200	174	148	42	52	M12x1
HSKA100HYDRO20X150	100	20	42	38	50	150	124	99	42	52	M12x1
HSKA100HYDRO20X200	100	20	42	38	50	200	174	149	42	52	M12x1
HSKA100HYDRO25X200	100	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO32X200	100	32	60	56	60	200	174	-	52	62	M16x1

- Applicable for 10 MPa coolant
- Reduction sleeves are available for d = 12, 20, 25, and 32mm.
- Chucking force will reduce when using a reduction sleeve.

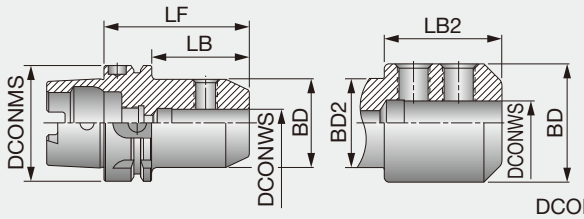
Option: Clamping wrench

Reference pages

Straight collet K130
Cooling tube K148
Wrench K149

HSK A-EM

Side lock holder for weldon endmills (HSK-A)



DCONWS ≥ 0.875", 25 mm

Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2
HSKA50EM3/8X2.562	50	0.375	1.380	-	2.562	1.530	-
HSKA50EM1/2X3.125	50	0.500	1.610	-	3.125	2.100	-
HSKA50EM5/8X3.125	50	0.625	1.752	-	3.125	2.101	-
HSKA50EM3/4X3.125	50	0.750	1.937	-	3.125	2.101	-
HSKA50EM7/8X4.000	50	0.875	2.205	-	4.000	2.976	-
HSKA50EM1X4.250	50	1.000	2.563	-	4.250	3.226	-
HSKA63EM3/16X2.562	63	0.188	0.870	-	2.562	1.530	-
HSKA63EM1/4X2.562	63	0.250	1.000	-	2.562	1.530	-
HSKA63EM3/8X2.562	63	0.375	1.380	-	2.562	1.530	-
HSKA63EM1/2X3.125	63	0.500	1.610	-	3.125	2.100	-
HSKA63EM5/8X3.125	63	0.625	1.750	-	3.125	2.100	-
HSKA63EM3/4X3.150	63	0.750	1.940	-	3.150	2.100	-
HSKA63EM1X4.250	63	1.000	2.560	2.080	4.250	3.220	2.590
HSKA63EM1-1/4X4.250	63	1.250	2.810	2.080	4.250	3.220	2.590
HSKA100EM1/4X3.125	100	0.250	1.100	-	3.125	1.250	-
HSKA100EM3/8X3.125	100	0.375	1.380	-	3.125	1.980	-
HSKA100EM1/2X3.125	100	0.500	1.630	-	3.125	1.980	-
HSKA100EM5/8X4.000	100	0.625	1.750	-	4.000	2.850	-
HSKA100EM3/4X4.000	100	0.750	1.940	-	4.000	2.850	-
HSKA100EM7/8X4.000	100	0.875	2.210	-	4.000	2.850	-
HSKA100EM1X4.000	100	1.000	2.560	-	4.000	2.850	-
HSKA100EM1-1/4X4.000	100	1.250	2.810	-	4.000	2.850	-
HSKA100EM1-1/2X4.000	100	1.500	3.000	-	4.000	2.850	-

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2
HSKA63EM6X65	63	6	25	-	65	39	-
HSKA63EM8X65	63	8	28	-	65	39	-
HSKA63EM10X65	63	10	35	-	65	39	-
HSKA63EM12X80	63	12	42	-	80	54	-
HSKA63EM14X80	63	14	44	-	80	54	-
HSKA63EM16X80	63	16	48	-	80	54	-
HSKA63EM18X80	63	18	50	-	80	54	-
HSKA63EM20X80	63	20	52	-	80	54	-
HSKA63EM25X110	63	25	65	52	110	84	65.5
HSKA63EM32X110	63	32	72	52	110	84	65.5
HSKA100EM6X80	100	6	25	-	80	51	-
HSKA100EM8X80	100	8	28	-	80	51	-
HSKA100EM10X80	100	10	35	-	80	51	-
HSKA100EM12X80	100	12	42	-	80	51	-
HSKA100EM14X80	100	14	44	-	80	51	-
HSKA100EM16X100	100	16	48	-	100	71	-
HSKA100EM18X100	100	18	50	-	100	71	-
HSKA100EM20X100	100	20	52	-	100	71	-
HSKA100EM25X100	100	25	65	-	100	71	-
HSKA100EM32X100	100	32	72	-	100	71	-

A cooling tube must be used with all coolant through HSK spindles (should be ordered separately).
Applicable for 7 MPa pressure coolant.

Reference pages


Wrench K149

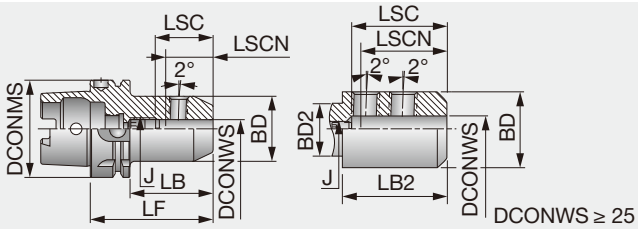

Cooling tube K148


Clamping screw K147


Preset screw K147

HSK A-EM E

Side lock holder for whistle notch (HSK-A)



Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63EM6X80E	63	6	25	-	80	54	-	32	40	M5	2
HSKA63EM8X80E	63	8	28	-	80	54	-	35	40	M6	3
HSKA63EM10X80E	63	10	35	-	80	54	-	39	44	M8	4
HSKA63EM12X90E	63	12	42	-	90	64	-	44	49	M10	5
HSKA63EM14X90E	63	14	44	-	90	64	-	44	49	M10	5
HSKA63EM16X100E	63	16	48	-	100	74	-	47	52	M12	6
HSKA63EM18X100E	63	18	50	-	100	74	-	47	55	M12	6
HSKA63EM20X100E	63	20	52	-	100	74	-	49	54	M16	8
HSKA63EM25X110E	63	25	65	52	110	84	65.5	54	61	M16	8
HSKA63EM32X110E	63	32	72	52	110	84	65.5	58	63	M20X1.5	10
HSKA100EM8X90E	100	8	28	-	90	61	-	35	40	M6	3
HSKA100EM12X100E	100	12	42	-	100	71	-	44	54	M10	5
HSKA100EM14X100E	100	14	44	-	100	71	-	44	54	M10	5
HSKA100EM16X100E	100	16	48	-	100	71	-	47	52	M12	6
HSKA100EM18X100E	100	18	50	-	100	71	-	47	52	M12	6
HSKA100EM20X110E	100	20	52	-	110	81	-	49	54	M16	8
HSKA100EM25X120E	100	25	65	-	120	91	-	54	61	M20X1.5	10
HSKA100EM32X120E	100	32	72	-	120	91	-	58	63	M20X1.5	10

• Applicable for 7 MPa coolant
The adjustment screw has an internal coolant hole.

Reference pages

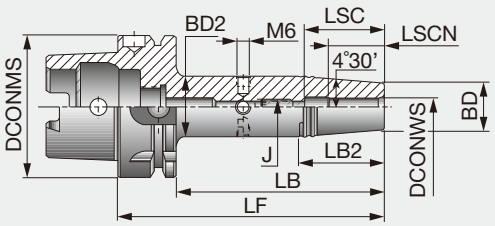
Wrench K149
Cooling tube K148
Clamping screw K147
Preset screw K147

MEMO

TUNGSHRINK

HSK A-SRKIN

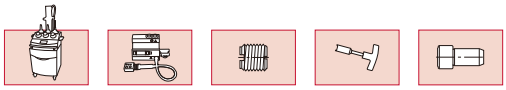
Thermal shrinking holder for carbide and HSS shanks (HSK-A)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKA63SRKIN1/4X3.150	63	0.250	0.827	1.060	3.150	2.126	1.500	0.980	1.420	M5	2.5
HSKA63SRKIN1/4X6.30	63	0.250	0.827	1.060	6.300	5.276	1.500	0.980	1.420	M5	2.5
HSKA63SRKIN5/16X3.150	63	0.313	0.827	1.060	3.150	2.217	1.500	0.980	1.420	M6	3
HSKA63SRKIN3/8X3.346	63	0.375	0.940	1.260	3.346	2.320	2.000	1.220	1.650	M8	4
HSKA63SRKIN3/8X6.30	63	0.375	0.940	1.260	6.300	5.276	2.000	1.220	1.650	M8	4
HSKA63SRKIN7/16X3.543	63	0.437	0.940	1.260	3.543	2.519	2.000	1.420	1.850	M10	5
HSKA63SRKIN1/2X3.543	63	0.500	0.940	1.260	3.543	2.519	2.000	1.420	1.850	M10	5
HSKA63SRKIN5/8X3.740	63	0.625	1.060	1.340	3.740	2.716	1.750	1.540	1.970	M12	6
HSKA63SRKIN5/8X6.30	63	0.625	1.060	1.340	6.300	5.276	1.750	1.540	1.970	M12	6
HSKA63SRKIN3/4X3.937	63	0.750	1.300	1.650	3.937	2.913	2.250	1.610	2.050	M16	8
HSKA63SRKIN3/4X6.30	63	0.750	1.300	1.650	6.300	5.276	2.250	1.610	2.050	M16	8
HSKA63SRKIN7/8X3.937	63	0.875	1.730	2.074	3.937	2.913	2.170	1.610	2.050	M16	8
HSKA63SRKIN1X4.528	63	1.000	1.730	2.074	4.528	3.504	2.170	1.850	2.280	M16	8
HSKA63SRKIN1-1/4X4.72	63	1.250	1.730	2.074	4.725	3.700	2.170	1.850	2.280	M16	8
HSKA100SRKIN1/4X3.500	100	0.250	0.827	1.060	3.500	2.358	1.500	0.980	1.420	M5	2.5
HSKA100SRKIN1/4X6.250	100	0.250	0.827	1.060	6.250	5.108	1.500	0.980	1.420	M5	2.5
HSKA100SRKIN5/16X3.500	100	0.313	0.827	1.060	3.500	2.358	1.500	0.980	1.420	M6	3
HSKA100SRKIN5/16X4.750	100	0.313	0.827	1.060	4.750	3.608	1.500	0.980	1.420	M6	3
HSKA100SRKIN5/16X6.250	100	0.313	0.827	1.060	6.250	5.108	1.500	0.980	1.420	M6	3
HSKA100SRKIN3/8X3.625	100	0.375	0.940	1.260	3.625	2.483	2.000	1.220	1.650	M8	4
HSKA100SRKIN3/8X6.250	100	0.375	0.940	1.260	6.250	5.108	2.000	1.220	1.650	M8	4
HSKA100SRKIN7/16X3.750	100	0.437	0.940	0.126	3.750	2.608	2.000	1.420	1.850	M10	5
HSKA100SRKIN7/16X6.250	100	0.437	0.940	1.260	6.250	5.108	2.000	1.420	1.850	M10	5
HSKA100SRKIN1/2X3.750	100	0.500	0.940	1.260	3.750	2.608	2.000	1.420	1.850	M10	5
HSKA100SRKIN1/2X5.000	100	0.500	0.940	1.260	5.000	3.858	2.000	1.420	1.850	M10	5
HSKA100SRKIN5/8X4.000	100	0.625	1.060	1.340	4.000	2.858	1.750	1.540	1.970	M12	6
HSKA100SRKIN5/8X5.000	100	0.625	1.060	1.340	5.000	3.858	1.750	1.540	1.970	M12	6
HSKA100SRKIN3/4X4.125	100	0.750	1.300	1.654	4.125	3.102	2.250	1.610	2.050	M12	6
HSKA100SRKIN3/4X6.250	100	0.750	1.300	1.650	6.250	5.108	2.250	1.610	2.050	M16	8
HSKA100SRKIN7/8X4.125	100	0.875	1.730	2.090	4.125	2.983	2.250	1.610	2.050	M12	6
HSKA100SRKIN1X4.500	100	1.000	1.730	2.090	4.500	3.358	2.250	1.850	2.280	M12	6
HSKA100SRKIN1-1/4X4.75	100	1.250	1.730	2.090	4.750	3.608	2.250	1.850	2.280	M12	6

* Wrench (metric size) for the rear stopper screw.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Please use an induction heating unit for SRKIN holder
Applicable for 10 MPa coolant

Reference pages

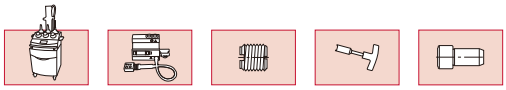


K137 K137 K147 K149 K148

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRKIN6X80	63	6	21	27	80	54	38	25	36	M5	2.5
HSKA63SRKIN6X120	63	6	21	27	120	94	38	25	36	M5	2.5
HSKA63SRKIN6X160	63	6	21	27	160	134	38	25	36	M5	2.5
HSKA63SRKIN8X80	63	8	21	27	80	54	38	25	36	M6	3
HSKA63SRKIN8X120	63	8	21	27	120	94	38	25	36	M6	3
HSKA63SRKIN8X160	63	8	21	27	160	134	38	25	36	M6	3
HSKA63SRKIN10X85	63	10	24	32	85	59	51	31	42	M8	4
HSKA63SRKIN10X120	63	10	24	32	120	94	51	31	42	M8	4
HSKA63SRKIN10X160	63	10	24	32	160	134	51	31	42	M8	4
HSKA63SRKIN12X90	63	12	24	32	90	64	51	36	42	M8	4
HSKA63SRKIN12X120	63	12	24	32	120	94	51	36	47	M10	5
HSKA63SRKIN12X160	63	12	24	32	160	134	51	36	47	M10	5
HSKA63SRKIN14X90	63	14	27	34	90	64	45	36	47	M10	5
HSKA63SRKIN14X120	63	14	27	34	120	94	45	36	47	M10	5
HSKA63SRKIN14X160	63	14	27	34	160	134	45	36	47	M10	5
HSKA63SRKIN16X75	63	16	27	34	75	49	-	39	50	-	-
HSKA63SRKIN16X95	63	16	27	34	95	69	44	39	50	M12	6
HSKA63SRKIN16X120	63	16	27	34	120	94	44	39	50	M12	6
HSKA63SRKIN16X160	63	16	27	34	160	134	44	39	50	M12	6
HSKA63SRKIN18X95	63	18	33	42	95	69	57	39	50	M12	6
HSKA63SRKIN18X120	63	18	33	42	120	94	57	39	50	M12	6
HSKA63SRKIN18X160	63	18	33	42	160	134	57	39	50	M12	6
HSKA63SRKIN20X75	63	20	33	41	75	49	-	41	50	-	-
HSKA63SRKIN20X100	63	20	33	42	100	74	57	41	52	M16	8
HSKA63SRKIN20X120	63	20	33	42	120	94	57	41	52	M16	8
HSKA63SRKIN20X160	63	20	33	42	160	134	57	41	52	M16	8
HSKA63SRKIN25X85	63	25	44	53	85	59	-	47	58	-	-
HSKA63SRKIN25X115	63	25	44	53	115	89	55	47	58	M16	8
HSKA63SRKIN32X85	63	32	44	53	85	59	-	47	58	-	-
HSKA63SRKIN32X120	63	32	44	53	120	94	55	47	58	M16	8
HSKA100SRKIN6X85	100	6	21	27	85	56	38	25	36	M5	2.5
HSKA100SRKIN6X120	100	6	21	27	120	91	38	25	36	M5	2.5
HSKA100SRKIN6X160	100	6	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN8X85	100	8	21	27	85	56	38	25	36	M6	3
HSKA100SRKIN8X120	100	8	21	27	120	91	38	25	36	M6	3
HSKA100SRKIN8X160	100	8	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN10X90	100	10	24	32	90	61	51	31	42	M8	4
HSKA100SRKIN10X120	100	10	24	32	120	91	51	31	42	M8	4
HSKA100SRKIN10X160	100	10	24	32	160	131	51	31	42	M8	4
HSKA100SRKIN12X95	100	12	24	32	95	66	51	36	47	M10	5
HSKA100SRKIN12X120	100	12	24	32	120	91	51	36	47	M10	5
HSKA100SRKIN12X160	100	12	24	32	160	131	51	36	47	M10	5
HSKA100SRKIN14X95	100	14	27	34	95	66	45	36	47	M10	5
HSKA100SRKIN14X120	100	14	27	34	120	91	45	36	47	M10	5
HSKA100SRKIN14X160	100	14	27	34	160	131	45	36	47	M10	5
HSKA100SRKIN16X100	100	16	27	34	100	71	45	39	50	M12	6
HSKA100SRKIN16X120	100	16	27	34	120	91	45	39	50	M12	6
HSKA100SRKIN16X160	100	16	27	34	160	131	45	39	50	M12	6
HSKA100SRKIN18X100	100	18	33	42	100	71	57	39	50	M12	6
HSKA100SRKIN18X160	100	18	33	42	160	131	57	39	50	M12	6
HSKA100SRKIN20X105	100	20	33	42	105	76	57	41	52	M16	8
HSKA100SRKIN20X160	100	20	33	42	160	131	57	41	52	M16	8
HSKA100SRKIN25X115	100	25	44	53	115	86	57	47	58	M16	8
HSKA100SRKIN32X120	100	32	44	53	120	91	57	47	58	M16	8

When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Please use an induction heating unit for SRKIN holder
Applicable for 10 MPa coolant

Reference pages

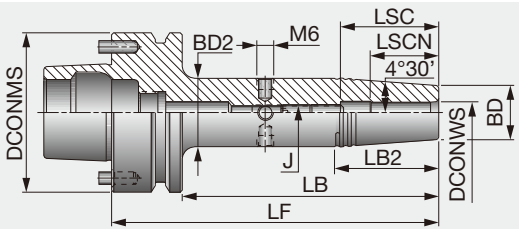


K137 K137 K147 K149 K148

TUNGSHRINK

HSK FM-SRKIN

Thermal shrinking holder for carbide and HSS shanks (DIN69871)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKFM63SRKIN1/4X3.13	63	0.250	0.827	1.063	3.130	2.106	1.500	0.980	1.420	M5	2.5
HSKFM63SRKIN5/16X3.13	63	0.313	0.827	1.063	3.130	2.106	1.500	0.980	1.420	M6	3
HSKFM63SRKIN3/8X3.50	63	0.375	0.945	1.260	3.500	2.476	2.000	1.220	1.650	M8	4
HSKFM63SRKIN1/2X3.50	63	0.500	0.945	1.260	3.500	2.476	2.000	1.420	1.850	M8	4
HSKFM63SRKIN5/8X3.50	63	0.625	1.063	1.339	3.500	2.476	1.752	1.540	1.970	M8	4
HSKFM63SRKIN3/4X3.00	63	0.750	1.299	1.610	3.000	2.976	-	1.610	2.050	-	-
HSKFM63SRKIN3/4X3.75	63	0.750	1.299	1.654	3.750	2.726	2.250	1.610	2.050	M12	6
HSKFM63SRKIN1X3.00	63	1.000	1.732	2.075	3.000	2.976	-	1.850	2.130	-	-
HSKFM63SRKIN1X4.00	63	1.000	1.732	2.075	4.000	2.976	2.252	1.850	2.280	M16	8
HSKFM80SRKIN1/4X3.25	80	0.250	0.827	1.063	3.250	2.226	1.500	0.960	1.420	M5	2.5
HSKFM80SRKIN3/8X3.25	80	0.375	0.945	1.260	3.250	2.226	2.000	1.200	1.650	M8	4
HSKFM80SRKIN1/2X3.25	80	0.500	0.945	1.260	3.250	2.226	2.000	1.400	1.850	M10	5
HSKFM80SRKIN5/8X3.25	80	0.625	1.063	1.340	3.250	2.266	1.752	1.510	1.970	M12	6
HSKFM80SRKIN1X3.50	80	1.000	1.732	2.075	3.500	2.476	2.252	1.830	2.280	M16	8

* Wrench (metric size) for the rear stopper screw.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)
Please use an induction heating unit for SRKIN holder
The driving pins can be removed, turning the toolholder into a standard HSK F63 type.
Applicable for 10 MPa coolant

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKFM63SRKIN25X115	63	25	44	52.7	115	89	55	47	58	M16	8

When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)
Please use an induction heating unit for SRKIN holder
The driving pins can be removed, turning the toolholder into a standard HSK F63 type.
Applicable for 10 MPa coolant

Reference pages

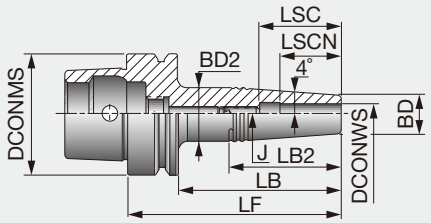
Induction heating unit K137
Heating unit K137
Preset screw K147
Wrench K149
Cooling tube K148

MEMO

TUNGSHRINK

HSK E-SRK

Thermal shrinking holder for carbide shank (HSK-E)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKE32SRK1/8X2.000	32	0.125	0.394	0.591	2.787	2.000	1.407	0.390	0.790	M4	2
HSKE32SRK3/16X2.000	32	0.187	0.394	0.591	2.787	2.000	1.407	0.590	0.980	M4	2
HSKE32SRK1/4X2.000	32	0.250	0.433	0.630	2.787	2.000	1.406	0.710	1.100	M4	2
HSKE32SRK5/16X2.000	32	0.312	0.551	0.787	2.787	2.000	1.406	0.980	1.380	M4	2
HSKE32SRK3/8X2.000	32	0.375	0.630	0.866	2.787	2.000	1.677	1.180	1.580	M4	2
HSKE32SRK1/2X2.000	32	0.500	0.787	0.984	2.787	2.000	1.392	1.260	1.580	M4	2
HSKE40SRK1/8X1.750	40	0.125	0.390	0.590	2.537	1.750	1.400	0.390	0.630	M5	2.5
HSKE40SRK1/8X3.000	40	0.125	0.390	0.748	3.787	3.000	2.526	0.390	0.630	M5	2.5
HSKE40SRK3/16X1.750	40	0.187	0.390	0.590	2.537	1.750	1.400	0.590	0.980	M4	2
HSKE40SRK3/16X3.000	40	0.187	0.390	0.748	3.787	3.000	2.526	0.590	0.980	M4	2
HSKE40SRK1/4X1.750	40	0.250	0.430	0.630	2.537	1.750	1.400	0.710	1.100	M5	2.5
HSKE40SRK1/4X3.000	40	0.250	0.430	0.787	3.787	3.000	2.524	0.710	1.100	M5	2.5
HSKE40SRK5/16X1.750	40	0.312	0.550	0.550	2.537	1.750	1.637	0.980	1.380	M5	2.5
HSKE40SRK5/16X3.000	40	0.312	0.550	0.905	3.787	3.000	2.518	0.980	1.380	M6	3
HSKE40SRK3/8X1.750	40	0.375	0.630	0.866	2.537	1.750	1.670	1.180	1.580	M5	2.5
HSKE40SRK3/8X3.000	40	0.375	0.630	0.965	3.787	3.000	2.373	1.180	1.580	M8	4
HSKE40SRK7/16X1.750	40	0.437	0.790	1.024	2.537	1.750	1.665	1.220	1.610	M5	2.5
HSKE40SRK7/16X3.000	40	0.437	0.790	1.102	3.787	3.000	2.229	1.220	1.610	M10	3
HSKE40SRK1/2X1.750	40	0.500	0.790	1.024	2.537	1.750	1.665	1.260	1.650	M5	2.5
HSKE40SRK1/2X3.000	40	0.500	0.790	1.102	3.787	3.000	2.229	1.260	1.650	M10	5
HSKE50SRK1/8X1.750	50	0.125	0.390	0.590	2.774	1.750	1.400	0.390	0.630	M5	2.5
HSKE50SRK1/8X3.000	50	0.125	0.390	0.748	4.024	3.000	2.526	0.390	0.630	M5	2.5
HSKE50SRK3/16X1.750	50	0.187	0.390	0.590	2.774	1.750	1.400	0.590	0.830	M6	3
HSKE50SRK3/16X3.000	50	0.187	0.390	0.748	4.024	3.000	2.526	0.590	0.830	M6	3
HSKE50SRK1/4X1.750	50	0.250	0.430	0.630	2.774	1.750	1.400	0.710	1.100	M5	2.5
HSKE50SRK1/4X3.000	50	0.250	0.430	0.787	4.024	3.000	2.524	0.710	1.100	M5	2.5
HSKE50SRK5/16X1.750	50	0.312	0.550	0.787	2.774	1.750	1.673	0.980	1.380	M6	3
HSKE50SRK5/16X3.000	50	0.312	0.550	0.905	4.024	3.000	2.518	0.980	1.380	M6	3
HSKE50SRK3/8X1.750	50	0.375	0.630	0.866	2.774	1.750	1.670	1.180	1.580	M6	3
HSKE50SRK3/8X3.000	50	0.375	0.630	0.965	4.024	3.000	2.373	1.180	1.580	M8	4
HSKE50SRK7/16X1.750	50	0.437	0.790	1.024	2.774	1.750	1.665	1.220	1.610	M6	3
HSKE50SRK1/2X1.750	50	0.500	0.790	1.024	2.774	1.750	1.665	1.260	1.650	M6	3
HSKE50SRK1/2X3.000	50	0.500	0.790	1.102	4.024	3.000	2.229	1.260	1.650	M10	5
HSKE63SRK1/8X2.000	63	0.125	0.390	0.669	3.024	2.000	1.927	0.390	0.630	M6	3
HSKE63SRK3/16X2.000	63	0.187	0.390	0.669	3.024	2.000	1.927	0.590	0.830	M6	3
HSKE63SRK3/16X3.000	63	0.187	0.390	0.748	4.024	3.000	2.526	0.590	0.830	M6	3
HSKE63SRK1/4X2.000	63	0.250	0.430	0.709	3.024	2.000	1.927	0.710	0.950	M8	4
HSKE63SRK1/4X3.000	63	0.250	0.430	0.787	4.024	3.000	2.524	0.710	0.950	M8	4
HSKE63SRK5/16X2.000	63	0.312	0.550	0.827	3.024	2.000	1.927	0.980	1.380	M6	3
HSKE63SRK5/16X3.000	63	0.312	0.550	0.905	4.024	3.000	2.518	0.980	1.380	M6	3
HSKE63SRK3/8X2.000	63	0.375	0.630	0.906	3.024	2.000	1.927	1.180	1.580	M8	4
HSKE63SRK3/8X3.000	63	0.375	0.630	1.000	4.024	3.000	2.373	1.180	1.580	M8	4
HSKE63SRK7/16X2.000	63	0.437	0.790	1.063	3.024	2.000	1.927	1.220	1.610	M8	4
HSKE63SRK7/16X3.000	63	0.437	0.790	1.102	4.024	3.000	2.229	1.220	1.610	M10	5
HSKE63SRK1/2X2.000	63	0.500	0.790	1.063	3.024	2.000	1.927	1.260	1.650	M8	4

* Wrench (metric size) for the rear stopper screw.
(1) Balanced to G2.5 max.n: 35,000 min^{-1}
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Applicable for 10 MPa coolant

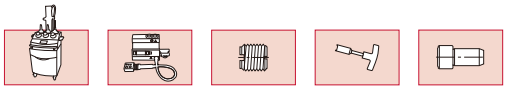
Reference pages

Induction heating unit K137
Heating unit K137
Preset screw K147
Wrench K149
Cooling tube K148

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKE32SRK3X45	32	3	10	13	65	45	30	10	16	M4	2
HSKE32SRK4X45	32	4	10	15	65	45	35	12	18	M4	2
HSKE32SRK5X45	32	5	10	15	65	45	35	15	25	M4	2
HSKE32SRK6X45	32	6	11	16	65	45	35	18	28	M4	2
HSKE32SRK10X45	32	10	16	22	65	45	42	30	40	M4	2
HSKE32SRK12X45	32	12	20	25	65	45	35.6	32	40	M4	2
HSKE40SRK3X45	40	3	10	13	65	45	30	10	16	M5	2.5
HSKE40SRK3X80	40	3	10	19	100	80	64	10	16	M5	2.5
HSKE40SRK4X45	40	4	10	15	65	45	35	12	18	M5	2.5
HSKE40SRK4X80	40	4	10	19	100	80	64	12	18	M5	2.5
HSKE40SRK5X45	40	5	10	15	65	45	35	15	25	M4	2
HSKE40SRK5X80	40	5	10	19	100	80	64	15	25	M4	2
HSKE40SRK6X45	40	6	11	16	65	45	35	18	28	M5	2.5
HSKE40SRK6X80	40	6	11	20	100	80	64	18	28	M5	2.5
HSKE40SRK8X45	40	8	14	20	65	45	42	25	35	M5	2.5
HSKE40SRK8X80	40	8	14	23	100	80	64	25	35	M6	3
HSKE40SRK10X45	40	10	16	22	65	45	42	30	40	M5	2.5
HSKE40SRK10X80	40	10	16	24.5	100	80	60	30	40	M8	4
HSKE40SRK12X45	40	12	20	26	65	45	42	32	42	M5	2.5
HSKE40SRK12X80	40	12	20	28	100	80	56	32	42	M10	5
HSKE50SRK3X45 (1)	50	3	10	15	71	45	36	10	16	M5	2.5
HSKE50SRK3X80 (1)	50	3	10	19	106	80	64	10	16	M5	2.5
HSKE50SRK4X45 (1)	50	4	10	15	71	45	36	12	18	M5	2.5
HSKE50SRK4X80 (1)	50	4	10	19	106	80	64	12	18	M5	2.5
HSKE50SRK6X45 (1)	50	6	11	16	71	45	36	18	28	M5	2.5
HSKE50SRK6X80 (1)	50	6	11	20	106	80	64	18	28	M5	2.5
HSKE50SRK8X45 (1)	50	8	14	20	71	45	43	25	35	M6	3
HSKE50SRK8X80 (1)	50	8	14	23	106	80	64	25	35	M6	3
HSKE50SRK10X45 (1)	50	10	16	22	71	45	42	30	37	M6	3
HSKE50SRK10X80 (1)	50	10	16	24.5	106	80	60	30	40	M8	4
HSKE50SRK12X45 (1)	50	12	20	26	71	45	42	32	39	M6	3

(1) Balanced to G2.5 max.n: 35,000 min^{-1}
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Applicable for 10 MPa coolant

Reference pages

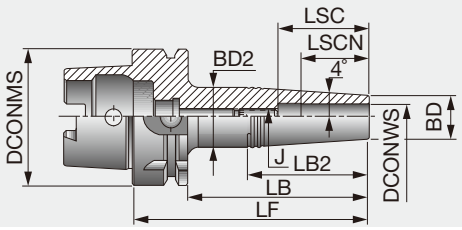


K137 K137 K147 K149 K148

TUNGSHRINK

HSK A-SRK

Thermal shrinking holder for carbide shank (HSK-A)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKA63SRK1/8X2.000	63	0.125	0.390	0.699	3.024	2.000	-	0.390	0.630	M6	3
HSKA63SRK1/8X3.250	63	0.125	0.390	0.823	4.274	3.250	3.098	0.390	0.630	M6	3
HSKA63SRK3/16X2.000	63	0.187	0.390	0.699	3.024	2.000	-	0.590	0.830	M6	3
HSKA63SRK3/16X3.250	63	0.187	0.390	0.823	4.274	3.250	3.098	0.590	0.830	M6	3
HSKA63SRK1/4X2.000	63	0.250	0.430	0.699	3.024	2.000	-	0.590	0.950	M8	4
HSKA63SRK1/4X3.250	63	0.250	0.430	0.866	4.274	3.250	3.098	0.710	0.950	M8	4
HSKA63SRK5/16X3.250	63	0.312	0.550	0.906	4.274	3.250	3.098	0.980	1.420	M6	3
HSKA63SRK3/8X2.000	63	0.375	0.630	0.787	3.024	2.000	1.693	1.180	1.610	M8	4
HSKA63SRK3/8X3.250	63	0.375	0.630	1.024	4.274	3.250	2.535	1.180	1.610	M8	4
HSKA63SRK7/16X2.000	63	0.437	0.790	1.067	3.024	2.000	-	1.220	1.650	M8	4
HSKA63SRK7/16X3.250	63	0.437	0.790	1.181	4.274	3.250	2.815	1.220	1.650	M10	5
HSKA63SRK1/2X2.000	63	0.500	0.790	1.063	3.024	2.000	-	1.260	1.690	M8	4
HSKA63SRK1/2X3.250	63	0.500	0.790	1.181	4.274	3.250	2.815	1.260	1.690	M10	5

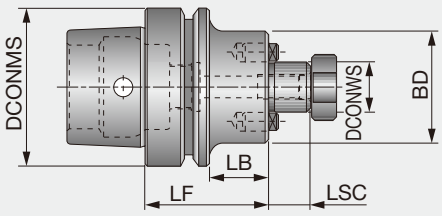
* Wrench (metric size) for the rear stopper screw.
Applicable for 10 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRK3X50	63	3	10	17	76	50	-	10	16	M6	3
HSKA63SRK3X85	63	3	10	21	111	85	79	10	16	M6	3
HSKA63SRK4X50	63	4	10	17	76	50	-	12	18	M6	3
HSKA63SRK4X85	63	4	10	21	111	85	79	12	18	M6	3
HSKA63SRK5X50	63	5	10	17	76	50	-	15	21	M6	3
HSKA63SRK5X85	63	5	10	21	111	85	79	15	21	M6	3
HSKA63SRK6X50	63	6	11	18	76	50	-	18	24	M8	4
HSKA63SRK6X85	63	6	11	22	111	85	79	18	24	M8	4
HSKA63SRK8X50	63	8	14	20	76	50	43	25	36	M6	3
HSKA63SRK8X85	63	8	14	23	111	85	64	25	36	M6	3
HSKA63SRK10X50	63	10	16	23	76	50	-	30	41	M8	4
HSKA63SRK10X85	63	10	16	26	111	85	72	30	41	M8	4
HSKA63SRK12X50	63	12	20	27	76	50	-	32	43	M8	4
HSKA63SRK12X85	63	12	20	30	111	85	72	32	43	M8	4

Applicable for 10 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

HSK E-SEM

Shell mill holder (HSK-E)



Metric	DCONMS	DCONWS	LSC	BD	LF	LB
HSKE40SEM3/4X2.000	40	19.05	17	45	50.8	30.8
HSKE63SEM1X2.375	63	25.4	17	52.8	60.3	34.3

- Applicable for 7 MPa coolant
- When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

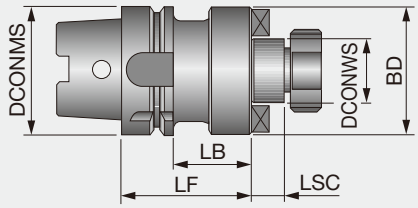
Option: Wrench for center bolt

Reference pages

Induction heating unit K137
Heating unit K137
Preset screw K147
Clamping screw K146
Wrench K148, K149
Cooling tube K148

HSK A-SEM

Shell mill holder (HSK-A)



Inch	DCONMS (mm)	DCONWS	LB	BD	LF	LSC
HSKA50SEM3/4X2.375*	50	0.750	0.669	1.770	2.375	1.351
HSKA63SEM3/4X2.375	63	0.750	0.669	1.770	2.375	1.351
HSKA63SEM1X1.750	63	1.000	0.669	2.086	1.750	0.726
HSKA63SEM1X4.000	63	1.000	0.669	2.086	4.000	2.984
HSKA63SEM1-1/4X2.375	63	1.250	0.669	2.510	2.375	1.351
HSKA63SEM1-1/2X2.375	63	1.500	0.940	3.070	2.375	1.351
HSKA100SEM3/4X3.000	100	0.750	0.669	1.770	3.000	1.858
HSKA100SEM1X2.375	100	1.000	0.669	2.165	2.375	1.233
HSKA100SEM1-1/4X1.875	100	1.250	0.669	2.500	1.875	0.733
HSKA100SEM1-1/2X1.875	100	1.500	0.940	3.071	1.875	0.733
HSKA100SEM2X2.375	100	2.000	0.940	3.881	2.375	1.233

* Requires a price and delivery time quotation.
Applicable for 7 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)

Option: Wrench for lock screw

Metric	DCONMS	DCONWS	LB	BD	LF	LSC
HSKA63SEM16X50	63	16	24	38	50	17
HSKA63SEM22X50	63	22	24	47	50	19
HSKA63SEM27X60	63	27	34	58	60	21
HSKA63SEM32X60	63	32	34	66	60	24
HSKA63SEM40X60	63	40	34	82	60	27
HSKA100SEM22X50 (1)	100	22	21	47	50	19
HSKA100SEM27X50 (1)	100	27	21	58	50	21
HSKA100SEM32X50 (1)	100	32	21	66	50	24
HSKA100SEM40X60 (1)	100	40	31	82	60	27
HSKA100SEM50X70 (1)	100	50	41	95	70	30

(1) Balanced to G6.3 max.n: 12,000 min^{-1}
Applicable for 7 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)

Option: Wrench for lock screw

Reference pages


Clamping screw K146

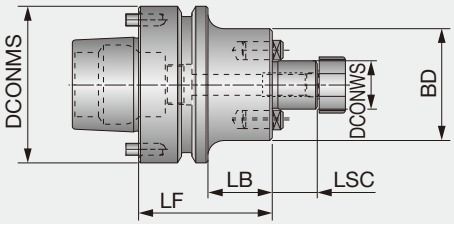

Wrench K148


Wrench K149


Cooling tube K148

HSK FM-SEM

Shell mill holder (HSK-FM)



Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	LB
HSKFM63SEM3/4X3.00	63	0.750	0.669	1.772	3.000	1.976
HSKFM63SEM3/4X4.50	63	0.750	0.669	1.772	4.500	3.476
HSKFM63SEM1X2.375	63	1.000	0.669	2.079	2.375	1.351
HSKFM80SEM3/4X2.00	80	0.750	0.669	1.772	2.000	0.976
HSKFM80SEM3/4X4.00	80	0.750	0.669	1.772	4.000	2.976
HSKFM80SEM1X2.00	80	1.000	0.669	2.165	2.000	0.976
HSKFM80SEM1X4.00	80	1.000	0.669	2.165	4.000	2.976

Metric	DCONMS	DCONWS	LSC	BD	LF	LB
HSKFM63SEM22X60	63	22	19	47	60	34
HSKFM63SEM32X60	63	32	24	66	60	34
HSKFM63SEM3/4X3.00	63	19.05	17	45	76.2	50.2
HSKFM63SEM3/4X4.50	63	19.05	17	45	114.3	88.3
HSKFM63SEM1X2.375	63	25.4	17	52.8	60.3	34.3

Applicable for 7 MPa coolant
The specification is based on HSK63F type.
This item improves torque transmission with two drive pins.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

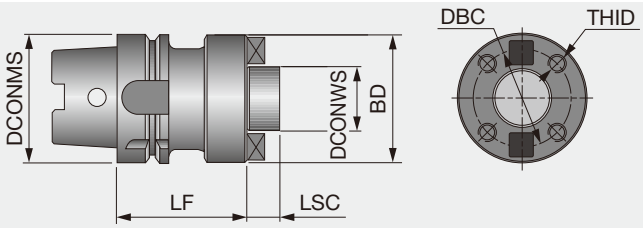
Option: Wrench for lock screw

Reference pages

Clamping screw K146
Wrench K148
Wrench K149
Cooling tube K148

HSK A-FM

Face mill holder (HSK-A)



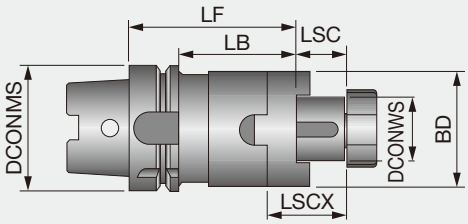
Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	DBC	THID
HSKA100FM2-1/2X2.875	100	2.500	1.122	4.881	2.875	4.000	5/8-11

Metric	DCONMS	DCONWS	LSC	BD	LF	DBC	THID
HSKA100FM60X70	100	60	40	128	70	101.6	M16

Option: Wrench for lock screw

HSK A-SEMC

Combination holder for slot mill and shell mill (HSK-A)



Metric	DCONMS	DCONWS	LSC	BD	LF	LB	LSCX
HSKA63SEMC16X60	63	16	17	32	60	34	21
HSKA63SEMC22X60	63	22	19	40	60	34	31
HSKA63SEMC27X60	63	27	21	48	60	34	33
HSKA63SEMC32X60	63	32	24	58	60	34	38
HSKA63SEMC40X70	63	40	27	70	70	44	41
HSKA100SEMC16X60	100	16	17	32	60	31	27
HSKA100SEMC22X60	100	22	19	40	60	31	31
HSKA100SEMC27X60	100	27	21	48	60	31	33
HSKA100SEMC32X60	100	32	24	58	60	31	38
HSKA100SEMC40X70	100	40	27	70	70	41	41
HSKA100SEMC50X80	100	50	30	90	80	51	46

• Applicable for 7 MPa coolant

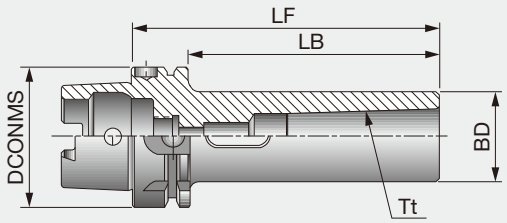
Option: Wrench for lock screw

Reference pages

Clamping screw K146
Wrench K148
Wrench K149
Cooling tube K148

HSK A-MT

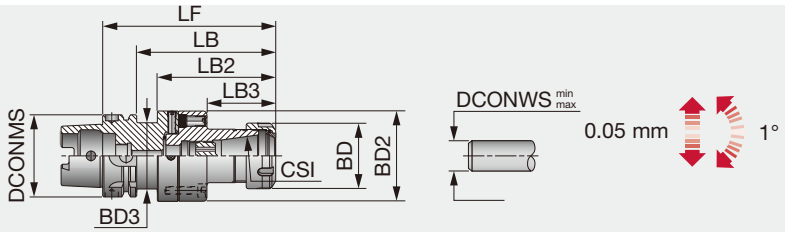
Morse taper holder (HSK-A)



Metric	DCONMS	Tt	LF	BD	LB
HSKA63MT1X110	63	MT1	110	25	84
HSKA63MT2X120	63	MT2	120	32	94
HSKA63MT3X140	63	MT3	140	40	114
HSKA63MT4X160	63	MT4	160	48	134
HSKA100MT1X110	100	MT1	110	25	81
HSKA100MT2X120	100	MT2	120	32	91
HSKA100MT3X150	100	MT3	150	40	121
HSKA100MT4X170	100	MT4	170	48	141
HSKA100MT5X200	100	MT5	200	63	171

ADJ HSK A-ER

ER collet chuck holder with center alignment (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3
ADJHSKA63D70ER32	63	ER32	2-20	134.5	108.5	92.5	52.5	50	70	46
ADJHSKA100D70ER32	100	ER32	2-20	130	101	-	53	50	70	-

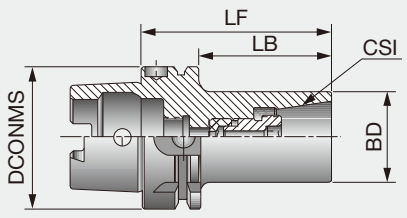
• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGCLICK

HSK A-CLICKIN

Quick change holder (HSK-A)



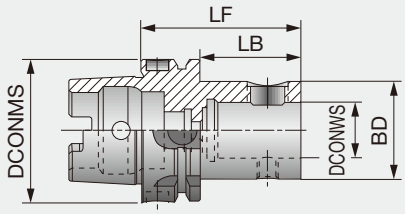
Metric	DCONMS	CSI	BD	LF	LB
HSKA63ER32CLICK-IN	63	32SRF	41	85	59

• Applicable for 10 MPa coolant • Clamping torque: 235 N·m

Reference pages

ER collet K118 -
Nut K142, K143
Preset screw K145
Wrench K144, K149
Cooling tube K148

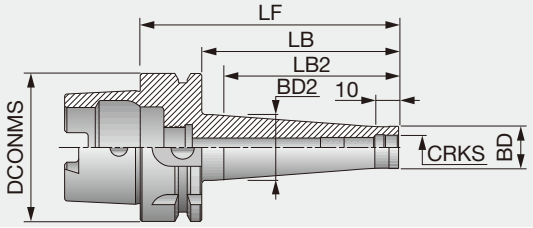
TUNGFIT
HSK A-CF
Quick change holder (HSK-A)



Metric	DCONMS	DCONWS	BD	LF	LB
HSKA63CF4-S	63	25	44.5	70	44
HSKA80CF4-S	80	25	44.5	73	47
HSKA100CF4-S	100	25	44.5	76	47

• Applicable for 7 MPa coolant • Clamping torque: 58.8 N·m

TUNGFLEX
HSK A-ODP
Screw-clamp holder for modular heads (HSK-A)



Metric	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKA63ODP6X59	63	M6	9.7	10	59	33	25
HSKA63ODP6X109	63	M6	9.8	23	109	83	75
HSKA63ODP8X59	63	M8	13.1	15	59	33	25
HSKA63ODP8X109	63	M8	13.1	23	109	83	75
HSKA63ODP10X59	63	M10	18	20	59	33	25
HSKA63ODP10X109	63	M10	18	28	109	83	75
HSKA63ODP12X59	63	M12	21	24	59	33	25
HSKA63ODP12X109	63	M12	21	31	109	83	75
HSKA63ODP16X59	63	M16	29	34	59	33	25
HSKA63ODP16X109	63	M16	29	34	109	83	75
HSKA100ODP12X87 (1)	100	M12	23	30	87	58	50
HSKA100ODP12X137 (1)	100	M12	23	30	137	108	100
HSKA100ODP12X187 (1)	100	M12	23	40	187	158	150
HSKA100ODP12X237 (1)	100	M12	23	46	237	208	200
HSKA100ODP16X87 (1)	100	M16	29	31.5	87	58	50
HSKA100ODP16X137 (1)	100	M16	29	41.5	137	108	100
HSKA100ODP16X187 (1)	100	M16	29	55	187	158	150
HSKA100ODP16X237 (1)	100	M16	29	55	237	208	200

• Applicable for 10 MPa coolant
(1) Balanced to G6.5 max.n:12,000 min^{-1}

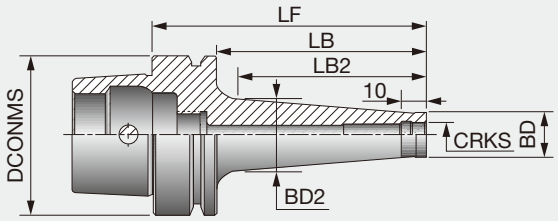
Reference pages

Wrench K149
Cooling tube K148

TUNGFLEX

HSK E-ODP

Screw-clamp holder for modular heads (HSK-E)

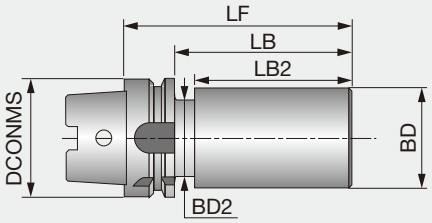


Metric	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKE40ODP10X53	40	M10	18	20	53	33	25
HSKE40ODP10X103	40	M10	18	28	103	83	75
HSKE40ODP12X53	40	M12	21	24	53	33	25
HSKE40ODP12X103	40	M12	21	31	103	83	75
HSKE50ODP10X59 (1)	50	M10	18	20	59	33	25
HSKE50ODP10X109 (1)	50	M10	18	28	109	83	75
HSKE50ODP12X59 (1)	50	M12	21	24	59	33	25
HSKE50ODP16X59 (1)	50	M16	29	34	59	33	25
HSKE50ODP16X109 (1)	50	M16	29	34	109	83	75
HSKE63ODP10X59 (2)	63	M10	18	20	59	33	25
HSKE63ODP10X109 (2)	63	M10	18	28	109	83	75
HSKE63ODP12X59 (2)	63	M12	21	24	59	33	25
HSKE63ODP12X109 (2)	63	M12	21	31	109	83	75

• Applicable for 10 MPa coolant
(1) Balanced to G2.5 max.n: 35,000 min^{-1}. (2) Balanced to G2.5 max.n: 30,000 min^{-1}.

HSK Blanks

Blank for holders (HSK)



Metric	DCONMS	BD	BD2	LF	LB	LB2
HSKA63B16MN100	63	63	52.8	100	74	55.5
HSKA63B16MN200	63	63	52.8	200	174	155.5
HSKA100B16MN100	100	102	85	100	71	54.8
HSKA100B16MN200	100	102	85	200	171	154.8

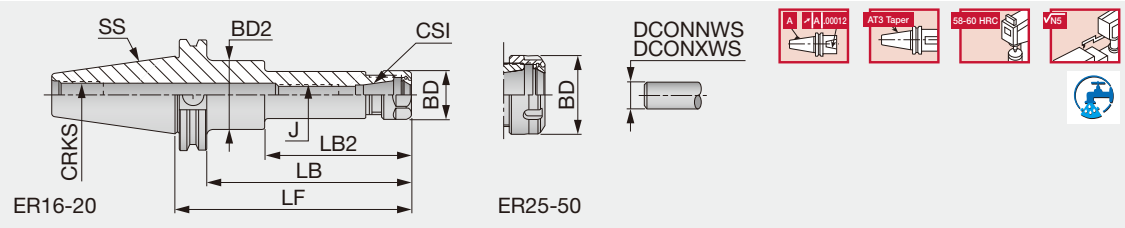
• Material: Case hardened alloy steel
• Shank hardness: 58 HRC minimum
• Nose hardness: 35-37 HRC

Reference pages

Wrench K149
Cooling tube K148

CAT-FC-ER

ER collet chuck holders with Caterpillar face contact AD tapered shanks



Inch	SS	CSI	BD	BD2	LF	LB	LB2	J	CRKS
CAT40FCER16X2.750	40	ER16	1.102	1.752	2.750	2.000	1.370	M12	5/8-11
CAT40FCER16X3.937	40	ER16	1.102	1.752	3.937	3.187	2.560	M12	5/8-11
CAT40FCER32X2.562	40	ER32	1.968	1.752	2.562	1.812	-	M22	5/8-11
CAT40FCER32X4.000	40	ER32	1.968	1.752	4.000	3.250	-	M22	5/8-11
CAT40FCER40X3.359	40	ER40	2.480	1.752	3.359	2.609	-	M28	5/8-11
CAT50FCER16X3.937	50	ER16	1.102	2.752	3.937	3.187	2.560	M12	1-8
CAT50FCER16X5.906	50	ER16	1.102	2.752	5.906	5.156	3.490	M12	1-8
CAT50FCER32X4.000	50	ER32	1.968	2.752	4.000	3.250	2.620	M22	1-8
CAT50FCER32X6.000	50	ER32	1.968	2.752	6.000	5.250	4.620	M22	1-8
CAT50FCER40X4.000	50	ER40	2.480	2.752	4.000	3.250	2.700	M28	1-8

Balanced to G2.5 max.n: 20,000 min^{-1}
Applicable for 10 MPa coolant.

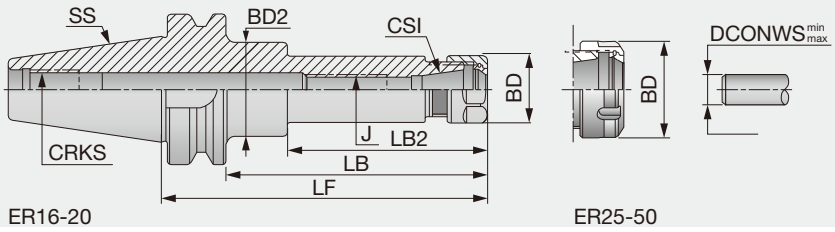
Option: Wrench for ER collet

Reference pages

ER collet K118 -
Pull stud K140 -
Nut K142, K143
Wrench K144
Preset screw K145

CAT-ER collet chuck

ER collet chucks with CAT shank



Inch	SS	CSI	Range	LF	LB	LB2	BD	BD2	J	CRKS
CAT30ER16X2.750 (1)	30	ER16	0.022 - 0.396	2.75	1.37	-	1.102	1.248	M10	1/2-13
CAT30ER20X2.562 (1)	30	ER20	0.041 - 0.514	2.562	1.102	-	1.248	1.248	M12	1/2-13
CAT30ER32X3.268 (1)	30	ER32	0.08 - 0.789	3.268	1.89	-	1.968	1.248	M18X1.5	1/2-13
CAT40ER16X3.937	40	ER16	0.022 - 0.396	3.937	1.37	-	1.102	1.752	M12	5/8-11
CAT40ER16X5.906	40	ER16	0.022 - 0.396	5.906	3.35	-	1.102	1.752	M12	5/8-11
CAT40ER20X3.937	40	ER20	0.041 - 0.514	3.937	2.56	-	1.339	1.752	M12	5/8-11
CAT40ER20X5.906	40	ER20	0.041 - 0.514	5.906	3.78	110	1.339	1.752	M12	5/8-11
CAT40ER25X2.562	40	ER25	0.041 - 0.632	2.562	1.18	-	1.654	1.752	M16	5/8-11
CAT40ER25X4.000	40	ER25	0.041 - 0.632	4	2.62	-	1.654	1.752	M16	5/8-11
CAT40ER25X6.000	40	ER25	0.041 - 0.632	6	4.62	-	1.654	1.752	M16	5/8-11
CAT40ER32X2.562	40	ER32	0.08 - 0.789	2.562	-	85	1.968	1.752	M22X1.5	5/8-11
CAT40ER32X4.000	40	ER32	0.08 - 0.789	4	-	-	1.968	1.752	M22X1.5	5/8-11
CAT40ER32X6.000	40	ER32	0.08 - 0.789	6	-	-	1.968	1.752	M22X1.5	5/8-11
CAT40ER40X3.359	40	ER40	0.12 - 1.025	3.359	-	-	2.48	1.752	M28X1.5	5/8-11
CAT40ER40X4.000	40	ER40	0.12 - 1.025	4	-	85	2.48	1.752	M28X1.5	5/8-11
CAT50ER16X3.937 (1)	50	ER16	0.022 - 0.396	3.937	2.56	85	1.102	2.752	M12	1-8
CAT50ER16X5.906 (1)	50	ER16	0.022 - 0.396	5.906	3.49	-	1.102	2.752	M12	1-8
CAT50ER16X8.000 (1)	50	ER16	0.022 - 0.396	8	2.98	-	1.102	2.752	M12	1-8
CAT50ER20X3.937 (1)	50	ER20	0.041 - 0.514	3.937	2.56	-	1.349	2.752	M16	1-8
CAT50ER20X5.906 (1)	50	ER20	0.041 - 0.514	5.906	4.53	-	1.349	2.752	M16	1-8
CAT50ER20X8.000 (1)	50	ER20	0.041 - 0.514	8	4.62	-	1.349	2.752	M16	1-8
CAT50ER25X4.000 (1)	50	ER25	0.041 - 0.632	4	2.58	-	1.654	2.752	M16	1-8
CAT50ER25X6.000 (1)	50	ER25	0.041 - 0.632	6	4.62	-	1.654	2.752	M16	1-8
CAT50ER25X8.000 (1)	50	ER25	0.041 - 0.632	8	6.58	-	1.654	2.752	M16	1-8
CAT50ER32X4.000 (1)	50	ER32	0.08 - 0.789	4	2.54	-	1.968	2.752	M22X1.5	1-8
CAT50ER32X6.000 (1)	50	ER32	0.08 - 0.789	6	4.58	-	1.968	2.752	M22X1.5	1-8
CAT50ER32X8.000 (1)	50	ER32	0.08 - 0.789	8	6.58	-	1.968	2.752	M22X1.5	1-8
CAT50ER40X4.000 (1)	50	ER40	0.12 - 1.025	4	2.62	-	2.48	2.752	M28X1.5	1-8
CAT50ER40X6.000 (1)	50	ER40	0.12 - 1.025	6	4.62	-	2.48	2.752	M28X1.5	1-8
CAT50ER40X8.000 (1)	50	ER40	0.12 - 1.025	8	6.58	-	2.48	2.752	M28X1.5	1-8
CAT50ER50X4.000 (1)	50	ER50	0.396 - 1.338	4	-	-	3.07	2.752	M36X1.5	1-8
CAT50ER50X6.000 (1)	50	ER50	0.396 - 1.338	6	-	-	3.07	2.752	M36X1.5	1-8

(1) Balanced to G6.3 at 12,000 min^{-1}.
(2) ER11 MINI Collet Chuck Spec.
Add B for coolant through the flange.
Wrench is not included.
Applicable for 10 MPa pressure coolant.

Option: Wrench for ER Collet

Reference pages

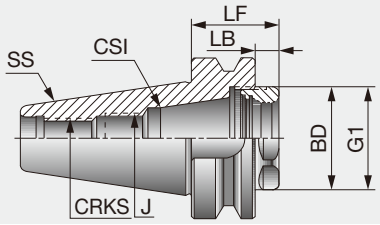


K118 - K140 - K142, K143 K144 K145

TUNGSHORT

CAT-ER collet

TungShort collet chucks with CAT shank



Inch	SS	CSI	Range	LF	LB	BD	J	CRKS	G1
CAT40ER32SHORT	40	ER20	0.08 - 0.789	1.124	0.374	1.575	5/8X1 1	5/8X11	M40X1.5
CAT40ER32SHORTM	40	ER32	0.08 - 0.789	1.754	1	1.575	5/8X11	5/8X11	M40X1.5
CAT40ER40SHORT	40	ER32	0.12 - 1.025	2.124	1.37	1.969	5/8X11	5/8X11	M50X1.5
CAT50ER32SHORT	50	ER32	0.08 - 0.789	1.124	0.374	1.575	M22X1.5	1-8	M40X1.5
CAT50ER32SHORTM	50	ER32	0.08 - 0.789	1.754	1	1.575	M22X1.5	1-8	M40X1.5
CAT50ER40SHORT	50	ER40	0.12 - 1.025	1.124	0.374	1.969	M28X1.5	1-8	M50X1.5
CAT50ER40SHORTM	50	ER40	0.12 - 1.025	1.754	1	1.969	M28X1.5	1-8	M50X1.5

Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

Option: Wrench for ER Collet

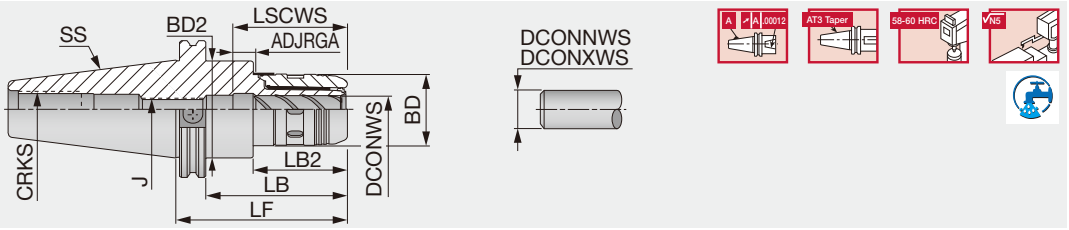
Reference pages

ER collet K118 -
Pull stud K140 -
Nut K143
Wrench K144
Preset screw K145

TUNGMAX

CAT-FC-TUNGMAX

Power chuck holders with Caterpillar face contact AD tapered shanks



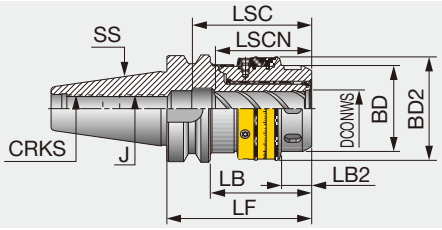
Inch	SS	DCONWS	DCONNWS	DCONXWS	BD	BD2	LF	LB	LB2	ADJRGA	LSCWS	J	CRKS
CAT40FCMAXIN3/4X3.75	40	0.725	0.250	0.725	2.000	1.752	3.750	3.000	2.370	0.530	2.720	M16	5/8-11
CAT40FCMAXIN1-1/4X4.16	40	1.250	0.250	1.250	2.716	1.752	4.160	3.410	2.780	0.470	3.230	M16	5/8-11
CAT50FCMAXIN3/4X4.13	50	0.725	0.250	0.725	2.000	2.752	4.130	3.380	2.750	0.530	2.720	M16	1-8
CAT50FCMAXIN1-1/4X4.05	50	1.250	0.250	1.250	2.716	2.752	4.050	3.300	-	0.550	3.310	M20	1-8

Applicable for 10 MPa coolant.

Option: Wrench for TungMax collet

CAT-TUNGMAX BIN

TungMax adjustable dynamic balanceable endmill chuck holders with CAT shank



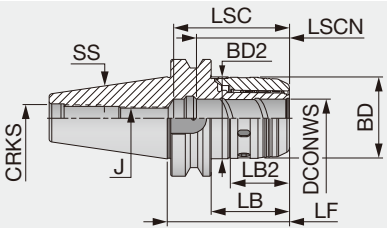
Inch	SS	DCONWS	Range	LF	LB	LB2	BD	BD2	LSCN	LSC	J	CRKS
CAT50TUNGMAX3/4X4.13BIN (1)	50	0.75	0.25 - 0.75	4.138	3.386	0.689	1.988	2.394	2.19	2.72	M16	1-8

(1) Balanced to G6.3 at 8,000 min^{-1}.
Applicable for 10 MPa pressure coolant.

Option: Wrench for TungMax collet

CAT-MAXIN

TungMax endmill chuck holders with CAT shank



Inch	SS	DCONWS	Range	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
CAT40MAXIN1-1/4X4.16	40	1.25	0.25 - 1.25	2.717	2.756	4.16	3.41	-	2.76	3.23	M16	5/8-11
CAT40MAXIN3/4X3.75	40	0.75	0.25 - 0.75	2	2.087	3.744	2.992	2.362	2.19	2.72	M16	5/8-11
CAT50MAXIN1-1/4X4.05	50	1.25	0.25 - 1.25	2.717	2.752	4.05	3.3	-	2.76	3.31	M20X2	1-8
CAT50MAXIN1-1/4X5.314	50	1.25	0.25 - 1.25	2.717	2.752	5.315	4.565	-	2.78	3.34	M20X2	1-8
CAT50MAXIN3/4X4.13	50	0.75	0.25 - 0.75	2	2.087	4.138	3.386	2.244	2.19	2.72	M16	1-8

(1) Chucks with taper size 40 can be balanced by the balancing ring up to G2.5 at 20,000 min^{-1}.
(2) Chucks with taper size 50 can be balanced by the balancing ring up to G2.5 at 18,000 min^{-1}.
Applicable for 10 MPa pressure coolant.

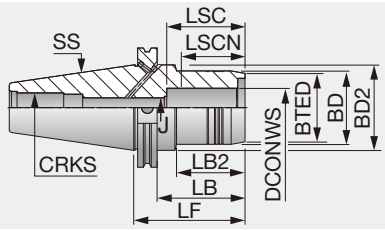
Option: Wrench for TungMax collet

Reference pages

Pull stud K140 -
Straight collet K127, K128
Wrench K144

TUNGHYDRO
CAT-HYDRO

TungHydro hydraulic endmill chuck holders with CAT shank



Inch	SS	DCONWS	BTED	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
CAT40HYDRO1/4X2.677	40	0.25	0.906	1.023	1.75	2.677	1.927	1.299	1.06	1.46	M5	5/8"-11UNC
CAT40HYDRO3/8X2.835	40	0.375	1.063	1.181	1.75	2.834	2.083	1.456	1.26	1.65	M6	5/8"-11UNC
CAT40HYDRO1/2X3.031	40	0.5	1.142	1.259	1.75	3.031	2.279	1.653	1.46	1.85	M8X1	5/8"-11UNC
CAT40HYDRO5/8X3.149	40	0.625	1.339	1.496	1.75	3.149	2.397	1.692	1.65	2.05	M8X1	5/8"-11UNC
CAT40HYDRO3/4X3.228	40	0.75	1.496	1.653	1.75	3.228	2.476	1.85	1.65	2.05	M12X1	5/8"-11UNC
CAT40HYDRO1X3.228	40	1	1.811	1.968	1.75	3.228	2.476	2.007	1.89	2.28	M16X1	5/8"-11UNC
CAT40HYDRO1-1/4X4.331	40	1.25	2.205	2.559	1.75	4.331	2.832	2.204	2.05	2.44	M16X1	5/8"-11UNC
CAT50HYDRO1/4X2.677	50	0.25	0.906	1.023	2.75	2.667	1.925	1.299	1.06	1.46	M5	1"-8 UNC
CAT50HYDRO3/8X2.834	50	0.375	1.063	1.181	2.75	2.834	2.083	1.456	1.26	1.65	M6	1"-8 UNC
CAT50HYDRO1/2X3.228	50	0.5	1.142	1.259	2.75	3.228	2.476	1.653	1.46	1.85	M10	1"-8 UNC
CAT50HYDRO5/8X3.149	50	0.625	1.339	1.496	2.75	3.149	2.397	1.574	1.65	2.05	M8X1	1"-8 UNC
CAT50HYDRO3/4X3.228	50	0.75	1.496	1.653	2.75	3.228	2.476	1.79	1.65	2.05	M12X1	1"-8 UNC
CAT50HYDRO1X3.228	50	1	1.811	1.968	2.75	3.228	2.476	1.771	1.65	2.28	M16X1	1"-8 UNC
CAT50HYDRO1-1/4X3.583	50	1.25	2.205	2.362	2.75	3.583	2.83	2.204	2.05	2.52	M16X1	1"-8 UNC

Chucking forces will be reduced by 25% if reduction sleeves are used.
Reduction sleeves are available for 3/4 and 1-1/4 " bore diameters (ordered separately).
The coolant passages in the B type flange are blocked with screws which can be removed when required.
Clamping wrench (WRENCH HYDRO HEX 4) and test bar should be ordered separately.
Applicable for 10 MPa pressure coolant.

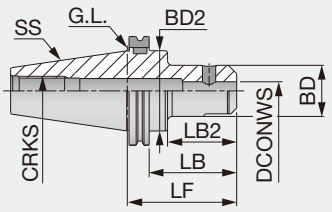
Reference pages

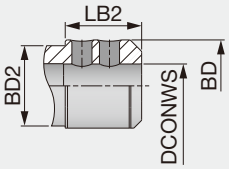

Pull stud
K140 -


Straight collet
K130

CAT-FC-EM

DIN1835 Form B endmill holders with Caterpillar face contact AD tapered shanks





For DCONWS ≥ 0.875

Inch	SS	DCONWS	BD	BD2	LF	LB	LB2	CRKS
CAT40FCEM3/8X2.500	40	0.375	1.248	1.752	2.500	1.750	1.120	5/8-11
CAT40FCEM1/2X2.625	40	0.500	1.380	1.752	2.625	1.875	1.245	5/8-11
CAT40FCEM5/8X1.750	40	0.625	1.500	1.500	1.750	1.000	-	5/8-11
CAT40FCEM3/4X1.750	40	0.750	1.750	1.750	1.750	1.000	-	5/8-11
CAT40FCEM1X1.750	40	1.000	2.000	2.000	1.750	1.000	-	5/8-11
CAT40FCEM1-1/4X2.000	40	1.250	2.250	2.250	2.000	1.250	-	5/8-11
CAT50FCEM1/2X4.625	50	0.500	1.380	2.752	4.625	3.875	3.246	1-8
CAT50FCEM5/8X3.750	50	0.625	1.650	2.752	3.750	3.000	2.370	1-8
CAT50FCEM3/4X3.750	50	0.750	1.752	2.752	3.750	3.000	2.370	1-8
CAT50FCEM1X4.000	50	1.000	2.358	2.752	4.000	3.250	2.620	1-8
CAT50FCEM1-1/4X4.000	50	1.250	2.500	2.752	4.000	3.250	2.620	1-8
CAT50FCEM1-1/2X4.000	50	1.500	2.990	2.752	4.000	3.250	2.620	1-8

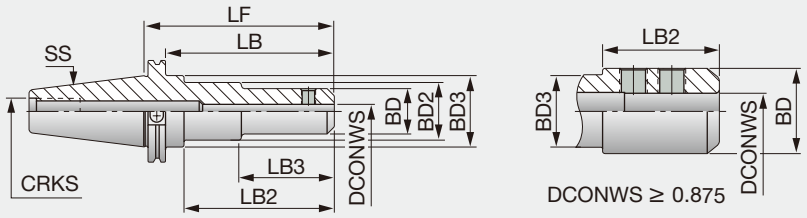
Applicable for 7 MPa coolant.

Reference pages

Pull stud K140 -
Clamping screw K147

CAT-EM

Screw locking endmill holders with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKS
CAT40EM3/16X2.500	40	0.187	0.866	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM1/4X2.500	40	0.25	1	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM3/8X1.750 (1)	40	0.375	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM3/8X2.500	40	0.375	1.248	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM3/8X2.500B (1)	40	0.375	1.248	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM1/2X1.750 (1)	40	0.5	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1/2X2.625	40	0.5	1.752	-	1.752	2.625	1.875	-	-	5/8-11
CAT40EM1/2X2.625B (1)	40	0.5	1.752	-	1.752	2.625	1.875	-	-	5/8-11
CAT40EM5/8X1.750 (1)	40	0.625	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM5/8X3.750	40	0.625	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM5/8X3.750B (1)	40	0.625	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM3/4X1.750	40	0.75	1.75	-	1.752	1.75	1	-	-	5/8-11
CAT40EM3/4X3.750	40	0.75	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM3/4X3.750B (1)	40	0.75	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM7/8X4.000	40	0.875	2.047	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1X1.750 (1)	40	1	2	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1X1.750B (1)	40	1	2	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1X4.000	40	1	2.559	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1X4.000B (1)	40	1	2.559	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1-1/4X2.000 (1)	40	1.25	2.25	-	1.752	2	1.25	-	-	5/8-11
CAT40EM1-1/4X4.250	40	1.25	2.752	-	1.752	4.25	3.5	2.87	-	5/8-11
CAT40EM1-1/4X4.250B (1)	40	1.25	2.752	-	1.752	4.25	3.5	2.87	-	5/8-11
CAT40EM1-1/2X4.625	40	1.5	3.15	-	1.752	4.625	3.875	3.245	-	5/8-11
CAT40EM1-1/2X4.625B (1)	40	1.5	3.15	-	1.752	4.625	3.875	3.245	-	5/8-11
CAT50EM1/4X2.500	50	0.25	1	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM1/4X4.500	50	0.25	1	-	2.752	4.5	3.75	3.15	-	1-8
CAT50EM1/4X6.250	50	0.25	1	1.969	2.752	6.25	5.5	4.87	2.756	1-8
CAT50EM3/8X2.500	50	0.375	1.248	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM3/8X2.500B (1)	50	0.375	1.248	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM3/8X4.500	50	0.375	1.248	-	2.752	4.5	3.75	3.12	-	1-8
CAT50EM3/8X6.500	50	0.375	1.248	1.969	2.753	6.5	5.5	5.12	3.13	1-8
CAT50EM3/8X6.500B (1)	50	0.375	1.248	1.969	2.753	6.5	5.5	5.12	3.13	1-8
CAT50EM1/2X2.625	50	0.5	1.752	-	2.752	2.625	1.875	1.245	-	1-8
CAT50EM1/2X2.625B (1)	50	0.5	1.752	-	2.752	2.625	1.875	1.245	-	1-8
CAT50EM1/2X4.625	50	0.5	1.752	-	2.752	4.625	3.875	3.245	-	1-8
CAT50EM1/2X4.625B (1)	50	0.5	1.752	-	2.752	4.625	3.875	3.245	-	1-8
CAT50EM1/2X6.625	50	0.5	1.752	2.205	2.752	6.625	5.875	5.245	3.248	1-8
CAT50EM1/2X6.625B (1)	50	0.5	1.752	2.205	2.752	6.625	5.875	5.245	3.248	1-8
CAT50EM5/8X3.750	50	0.625	1.752	-	2.752	3.75	3	2.37	-	1-8
CAT50EM5/8X3.750B (1)	50	0.625	1.752	-	2.752	3.75	3	2.37	-	1-8
CAT50EM5/8X5.750	50	0.625	1.752	-	2.752	5.75	5	4.37	-	1-8
CAT50EM5/8X5.750B (1)	50	0.625	1.752	-	2.752	5.75	5	4.37	-	1-8
CAT50EM5/8X7.750	50	0.625	1.752	2.165	2.753	7.75	7	6.37	4.39	1-8

Add B for coolant through the flange.
These tool holders can be used only on vertical machines with an umbrella type ATC. (They cannot be used with arm type ATC.)
Applicable for 7 MPa pressure coolant.

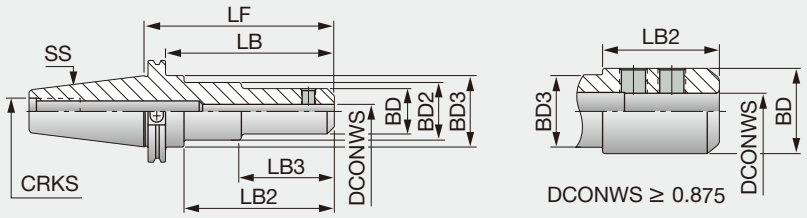
Reference pages


Pull stud K140 -


Clamping screw K147

CAT-EM

Screw locking endmill holders with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKS
CAT50EM3/4X3.750	50	0.75	1.772	-	2.752	3.75	3	2.37	-	1-8
CAT50EM3/4X3.750B (1)	50	0.75	1.772	-	2.752	3.75	3	2.37	-	1-8
CAT50EM3/4X5.750	50	0.75	1.772	-	2.752	5.75	5	3.15	-	1-8
CAT50EM3/4X5.750B (1)	50	0.75	1.772	-	2.752	5.75	5	3.15	-	1-8
CAT50EM3/4X7.750	50	0.75	1.772	2.264	2.753	7.75	7	6.37	3.15	1-8
CAT50EM3/4X7.750B (1)	50	0.75	1.772	2.264	2.753	7.75	7	6.37	3.15	1-8
CAT50EM7/8X7.750	50	0.75	2.047	-	2.752	7.75	7	3.15	-	1-8
CAT50EM7/8X3.750	50	0.875	2.047	-	2.752	3.75	3	2.37	-	1-8
CAT50EM1X4.000	50	1	2.559	-	2.753	4	3.25	2.62	-	1-8
CAT50EM1X4.000B (1)	50	1	2.559	-	2.753	4	3.25	2.62	-	1-8
CAT50EM1X6.000	50	1	2.559	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1X6.000B (1)	50	1	2.559	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1X8.000	50	1	2.559	-	2.752	8	7.25	4.625	-	1-8
CAT50EM1-1/4X4.000	50	1.25	2.752	-	2.752	4	3.25	-	-	1-8
CAT50EM1-1/4X4.000B (1)	50	1.25	2.752	-	2.752	4	3.25	-	-	1-8
CAT50EM1-1/4X6.000	50	1.25	2.752	-	2.752	6	5.25	-	-	1-8
CAT50EM1-1/4X8.000	50	1.25	2.752	-	2.752	8	7.25	-	-	1-8
CAT50EM1-1/2X4.000	50	1.5	3.15	-	2.752	4	3.25	2.62	-	1-8
CAT50EM1-1/2X4.000B (1)	50	1.5	3.15	-	2.752	4	3.25	2.62	-	1-8
CAT50EM1-1/2X6.000	50	1.5	3.15	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1-1/2X8.000	50	1.5	3.15	-	2.752	8	7.25	6.62	-	1-8
CAT50EM2X5.625	50	2	3.74	-	2.752	5.625	4.875	4.245	-	1-8

(1) Add B for coolant through the flange.
These tool holders can be used only on vertical machines with an umbrella type ATC. (They cannot be used with arm type ATC.)
Applicable for 7 MPa pressure coolant.

Reference pages

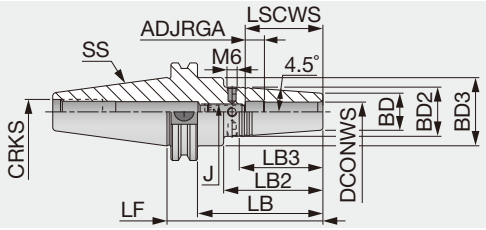

Pull stud
K140 -


Clamping screw
K147

TUNGSHRINK

CAT-FC-SRKIN

Thermal shrinking holders with Caterpillar face contact AD tapered shanks, for carbide, HSS and steel shanks

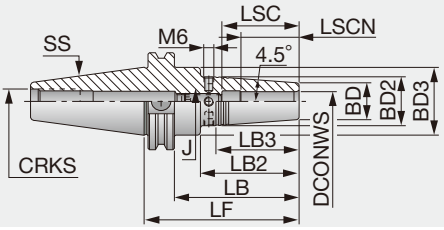


Inch	SS	DCONWS	BD	BD3	BD2	LF	LB	LB3	LB2	ADJRGA	LSCWS	J	CRKS
CAT40FCSRKIN1/4X3.50 (1)	40	0.250	0.827	1.752	1.063	3.500	2.750	1.500	2.120	0.457	1.417	M5	5/8-11
CAT40FCSRKIN3/8X3.75 (1)	40	0.375	0.945	1.752	1.260	3.750	3.000	2.000	2.370	0.453	1.653	M8	5/8-11
CAT40FCSRKIN1/2X3.75 (1)	40	0.500	0.945	1.752	1.260	3.750	3.000	2.000	2.370	0.450	1.850	M10	5/8-11
CAT40FCSRKIN5/8X3.75 (1)	40	0.625	1.063	1.752	1.338	3.750	3.000	1.752	2.370	0.448	1.968	M12	5/8-11
CAT40FCSRKIN3/4X3.00 (1)	40	0.750	1.299	1.752	1.550	3.000	2.250	-	1.620	0.457	2.047	M16	5/8-11
CAT40FCSRKIN1X4.000 (1)	40	1.000	1.732	1.752	2.087	4.000	3.250	2.252	2.620	0.453	2.283	M16	5/8-11
CAT50FCSRKIN1/2X3.75 (2)	50	0.500	0.945	2.752	1.260	3.750	3.000	2.000	2.370	0.450	1.850	M10	1-8
CAT50FCSRKIN5/8X3.75 (2)	50	0.625	1.063	2.752	1.338	3.750	3.000	1.752	2.370	0.458	1.968	M12	1-8
CAT50FCSRKIN3/4X4.00 (2)	50	0.750	1.299	2.752	1.653	4.000	3.250	2.252	2.620	0.457	2.047	M16	1-8
CAT50FCSRKIN1X4.000 (2)	50	1.000	1.732	2.752	2.087	4.000	3.250	2.252	2.620	0.453	2.283	M16	1-8
CAT50FCSRKIN1-1/4X4.0 (2)	50	1.250	1.732	2.752	2.087	4.000	3.250	2.252	2.620	0.457	2.047	M16	1-8

Please use an induction heating unit for SRKIN holder.
(1) Balanced to G2.5 max.n: 25,000 min^{-1}
(2) Balanced to G2.5 max.n: 20,000 min^{-1}
Applicable for 10 MPa coolant.

CAT-SRKIN

TungShrink thermal shrinking holder for carbide and HSS with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSCN	LSC	J	CRKS	Wrench
CAT40SRKIN1/4X3.500	40	0.25	0.827	1.063	1.752	3.5	2.75	2.12	1.501	0.98	1.42	M5	5/8-11	0.098
CAT40SRKIN5/16X3.500	40	0.313	0.827	1.063	1.752	3.5	2.75	2.12	1.501	0.98	1.42	M6	5/8-11	0.118
CAT40SRKIN3/8X3.750	40	0.375	0.945	1.26	1.752	3.75	3	2.37	2	1.22	1.65	M8	5/8-11	0.157
CAT40SRKIN7/16X3.750	40	0.438	0.945	1.26	1.752	3.75	3	2.37	2.001	1.42	1.85	M10	5/8-11	0.197
CAT40SRKIN1/2X3.750	40	0.5	0.945	1.26	1.752	3.75	3	2.37	2.001	1.42	1.85	M10	5/8-11	0.197
CAT40SRKIN5/8X3.750	40	0.625	1.063	1.339	1.752	3.75	3	2.37	1.751	1.54	1.97	M12	5/8-11	0.236
CAT40SRKIN3/4X4.000	40	0.75	1.299	1.654	1.752	4	3.25	2.62	2.251	1.61	2.05	M16	5/8-11	0.315
CAT40SRKIN7/8X4.000	40	0.875	1.732	2.087	1.752	4	3.25	2.62	2.251	1.61	2.05	M16	5/8-11	0.315
CAT40SRKIN1X4.000	40	1	1.732	2.087	1.752	4	3.25	2.62	2.251	1.85	2.28	M16	5/8-11	0.315
CAT40SRKIN1-1/4X4.000	40	1.25	1.732	2.087	1.752	4	3.25	2.62	2.251	1.85	2.28	M16	5/8-11	0.315
CAT50SRKIN1/4X3.500 (1)	50	0.25	0.827	1.063	2.752	3.5	2.75	2.12	1.501	0.98	1.42	M5	1-8	0.098
CAT50SRKIN5/16X3.500 (1)	50	0.313	0.827	1.063	2.752	3.5	2.7	2.12	1.501	0.98	1.42	M6	1-8	0.118
CAT50SRKIN3/8X3.750 (1)	50	0.375	0.945	1.26	2.752	3.75	3	2.37	2	1.22	1.65	M8	1-8	0.157
CAT50SRKIN7/16X3.750 (1)	50	0.438	0.945	1.26	2.752	3.75	3	2.37	2.001	1.42	1.85	M10	1-8	0.197
CAT50SRKIN1/2X3.750 (1)	50	0.5	0.945	1.26	2.752	3.75	3	2.37	2.001	1.42	1.85	M10	1-8	0.197
CAT50SRKIN5/8X3.750 (1)	50	0.625	1.063	1.339	2.752	3.75	3	2.62	1.751	1.54	1.97	M12	1-8	0.236
CAT50SRKIN3/4X4.000 (1)	50	0.75	1.299	1.654	2.752	4	3.25	2.62	2.251	1.61	2.05	M16	1-8	0.315
CAT50SRKIN7/8X4.000 (1)	50	0.875	1.732	2.087	2.752	4	3.25	2.62	2.251	1.61	2.05	M16	1-8	0.315
CAT50SRKIN1X4.000 (1)	50	1	1.732	2.087	2.752	4	3.25	2.62	2.251	1.85	2.28	M16	1-8	0.315
CAT50SRKIN1-1/4X4.000 (1)	50	1.25	1.732	2.087	2.752	4	3.25	2.62	2.251	1.85	2.28	M16	1-8	0.315

(1) Balanced to G2.5 20.000 min^{-1}
Use only inductive heating device for SRKIN holders.
Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

Reference pages


Pull stud K140 -


Induction heating unit K137

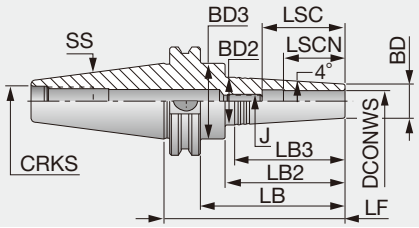

Heating unit K137


Preset screw K147

TUNGSHRINK

CAT-SRK

TungShrink thermal shrinking holder for carbide shank with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSCN	LSC	J	CRKS	Wrench
CAT40SRK1/8X2.000	40	0.125	0.394	0.591	1.752	3.38	2.63	2	1.4	0.39	0.63	M6	5/8-11	0.118
CAT40SRK1/8X3.250	40	0.125	0.394	0.748	1.752	4.63	2.88	3.25	2.526	0.39	0.63	M6	5/8-11	0.118
CAT40SRK3/16X2.000	40	0.188	0.394	0.591	1.752	3.38	2.63	2	1.4	0.59	0.83	M6	5/8-11	0.118
CAT40SRK3/16X3.250	40	0.188	0.394	0.748	1.752	4.963	2.88	3.25	2.526	0.59	0.83	M6	5/8-11	0.118
CAT40SRK1/4X2.000	40	0.25	0.433	0.63	1.752	3.38	2.63	2	1.398	0.71	0.95	M8	5/8-11	0.157
CAT40SRK1/4X3.250	40	0.25	0.433	0.787	1.752	4.63	2.88	3.25	2.524	0.71	0.95	M8	5/8-11	0.157
CAT40SRK5/16X2.000	40	0.313	0.551	0.787	1.752	3.38	2.63	2	1.673	0.98	1.22	M10	5/8-11	0.197
CAT40SRK5/16X3.250	40	0.313	0.551	0.906	1.752	4.63	2.88	3.25	2.518	0.98	1.22	M10	5/8-11	0.197
CAT40SRK3/8X2.000	40	0.375	0.63	0.866	1.752	3.38	2.63	2	1.669	1.18	1.42	M12	5/8-11	0.236
CAT40SRK3/8X3.250	40	0.375	0.63	0.965	1.752	4.63	2.88	3.25	2.373	1.18	1.42	M12	5/8-11	0.236
CAT40SRK7/16X2.000	40	0.438	0.787	1.024	1.752	3.38	2.63	2	1.665	1.22	1.61	M10	5/8-11	0.197
CAT40SRK7/16X3.250	40	0.438	0.787	1.102	1.752	4.63	2.88	3.25	2.228	1.22	1.61	M10	5/8-11	0.197
CAT40SRK1/2X2.000	40	0.5	0.787	1.024	1.752	3.38	2.63	2	1.665	1.26	1.65	M10	5/8-11	0.197
CAT40SRK1/2X3.250	40	0.5	0.787	1.102	1.752	4.63	3.25	3.25	2.228	1.26	1.65	M10	5/8-11	0.197

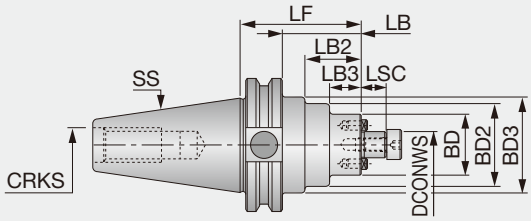
Applicable for 10 MPa pressure coolant.

Reference pages

Pull stud K140 -
Induction heating unit K137
Heating unit K137
Preset screw K147

CAT-SEM

Shell mill holder with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSC	CRKS
CAT40SEM1/2X1.500	40	0.5	-	1.378	1.75	1.5	0.75	0.102	-	0.57	5/8-11
CAT40SEM3/4X1.375	40	0.75	-	-	1.752	1.375	0.625	-	-	0.669	5/8-11
CAT40SEM1X2.062	40	1	-	2.165	1.752	2.062	1.312	0.682	-	0.669	5/8-11
CAT40SEM1-1/4X2.125	40	1.25	-	2.752	1.752	2.125	1.375	0.745	-	0.669	5/8-11
CAT40SEM1-1/2X2.406	40	1.5	-	3.071	1.752	2.406	1.656	1.026	-	0.938	5/8-11
CAT50SEM3/4X1.500	50	0.75	-	1.772	2.752	1.5	0.75	0.12	-	0.669	1-8
CAT50SEM3/4X1.920X8.00	50	0.75	-	1.92	2.752	8	7.25	6.583	-	0.669	1-8
CAT50SEM3/4X3.500	50	0.75	-	1.772	2.752	3.5	0.75	2.102	-	0.669	1-8
CAT50SEM3/4X5.500	50	0.75	1.772	2.362	2.752	5.5	4.75	4.13	2.48	0.669	1-8
CAT50SEM1X2.000	50	1	-	2.165	2.752	2	1.25	0.62	-	0.669	1-8
CAT50SEM1X2.42X12.00	50	1	-	2.42	2.752	12	11.25	10.583	-	0.669	1-8
CAT50SEM1X4.000	50	1	-	2.165	2.752	4	3.25	0.728	-	0.669	1-8
CAT50SEM1X6.000	50	1	-	2.165	2.752	6	5.25	2.657	-	0.669	1-8
CAT50SEM1-1/4X1.500	50	1.25	-	-	1.752	1.5	0.75	-	-	0.669	1-8
CAT50SEM1-1/4X2.92X13.0	50	1.25	-	2.921	2.752	13	12.25	11.62	-	0.669	1-8
CAT50SEM1-1/4X3.500	50	1.25	-	-	2.752	3.5	2.75	-	-	0.669	1-8
CAT50SEM1-1/4X4.000	50	1.25	-	-	2.752	4	-	-	-	0.669	1-8
CAT50SEM1-1/4X6.000	50	1.25	-	-	2.752	6	-	-	-	0.669	1-8
CAT50SEM1-1/2X2.406	50	1.5	-	3.071	2.752	2.406	1.656	1.026	-	0.938	1-8
CAT50SEM1-1/2X4.000	50	1.5	-	3.071	2.752	4	3.25	2.62	-	0.938	1-8
CAT50SEM1-1/2X6.000	50	1.5	-	3.071	2.752	6	5.25	4.62	-	0.938	1-8
CAT50SEM2X2.406	50	2	-	3.858	2.752	2.406	1.656	1.026	-	0.938	1-8
CAT50SEM2X4.000	50	2	-	3.858	2.752	4	3.25	2.62	-	0.938	1-8

CAT40 = Balanced to G2.5 20,000 min^{-1}
CAT50 = Balanced to G2.5 15,000 min^{-1}

Reference pages

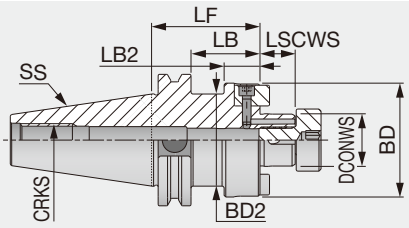

Pull stud K140 -


Clamping screw K146


Wrench K148

CAT-FC-SEM-C

Shell mill holders with coolant holes and Caterpillar face contact AD tapered shanks

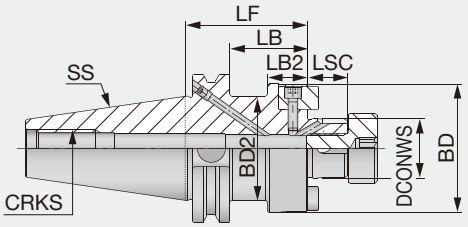


Inch	SS	DCONWS	BD	BD_2	LF	LB	LSCWS	LB2	CRKS
CAT40FCSEM1/2X2.000C	40	0.500	1.378	1.752	2.000	1.250	0.570	0.622	5/8-11
CAT40FCSEM3/4X1.375C	40	0.750	1.752	1.752	1.375	0.625	0.670	-	5/8-11
CAT40FCSEM1X2.062C	40	1.000	2.165	1.752	2.062	1.312	0.670	0.685	5/8-11
CAT40FCSEM1-1/4X2.125C	40	1.250	2.752	1.752	2.125	1.375	0.670	0.748	5/8-11
CAT40FCSEM1-1/2X2.406C	40	1.500	3.071	1.752	2.406	1.656	0.937	1.027	5/8-11
CAT50FCSEM1/2X3.500C	50	0.500	1.378	2.752	3.500	2.750	0.570	2.122	1-8
CAT50FCSEM3/4X3.500C	50	0.750	1.771	2.752	3.500	2.750	0.670	2.122	1-8
CAT50FCSEM1X2.000C	50	1.000	2.165	2.752	2.000	1.250	0.670	0.622	1-8
CAT50FCSEM1-1/4X3.500C	50	1.250	2.752	2.752	3.500	2.750	0.670	-	1-8
CAT50FCSEM1-1/2X2.500C	50	1.500	3.071	2.752	2.500	1.750	0.937	1.122	1-8

Balanced to G2.5 max.n: 20,000 min^{-1}
Applicable for 7 MPa coolant.

CAT-SEM-C

Shell mill holder with coolant hole for CAT shank



Inch	SS	DCONWS	BD	BD2	LF	LB	LB2	LSC	CRKS
CAT40SEM1/2X2.000C	40	0.5	1.475	1.752	2	1.25	-	0.57	5/8-11
CAT40SEM3/4X1.375C	40	0.75	-	1.752	1.375	0.625	-	0.669	5/8-11
CAT40SEM1X2.062C	40	1	2.165	1.752	2.062	1.312	0.682	0.669	5/8-11
CAT40SEM1-1/4X2.125C	40	1.25	2.752	1.752	2.125	1.375	0.745	0.669	5/8-11
CAT40SEM1-1/2X2.406C	40	1.5	3.071	1.752	2.406	1.656	1.026	0.937	5/8-11
CAT50SEM1/2X3.500C	50	0.5	1.475	2.752	3.5	2.75	-	0.57	1-8
CAT50SEM3/4X2.000C	50	0.75	1.772	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM3/4X3.500C	50	0.75	1.772	2.752	3.5	2.75	2.12	0.669	1-8
CAT50SEM3/4X5.500C	50	0.75	1.772	2.752	5.5	4.75	4.12	0.669	1-8
CAT50SEM1X2.000C	50	1	2.165	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM1X4.000C	50	1	2.165	2.752	4	3.25	2.62	0.669	1-8
CAT50SEM1-1/4X2.000C	50	1.25	-	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM1-1/4X3.500C	50	1.25	-	2.752	3.5	2.75	2.12	0.669	1-8
CAT50SEM1-1/2X2.500C	50	1.5	3.071	2.752	2.5	1.75	1.12	0.937	1-8
CAT50SEM1-1/2X4.000C	50	1.5	3.071	2.752	4	3.25	2.62	0.937	1-8

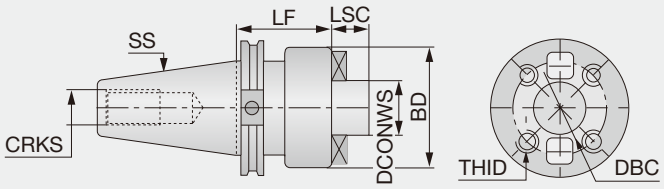
CAT40 = Balanced to G2.5 20,000 min^{-1}
CAT50 = Balanced to G2.5 15,000 min^{-1}
Applicable for 7 MPa pressure coolant.

Reference pages

Pull stud K140 -
Clamping screw K146
Wrench K148

CAT-FM

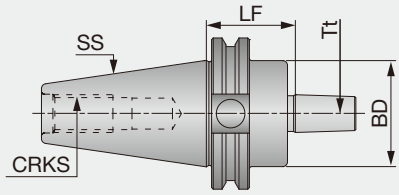
Face mill holder with CAT shank



Inch	SS	DCONWS	BD	DBC	LF	LSC	CRKS	THID
CAT50FM2-1/2X2.875	50	2.500	4.881	4	2.875	1.125	1-8	5/8-11

CAT-DC

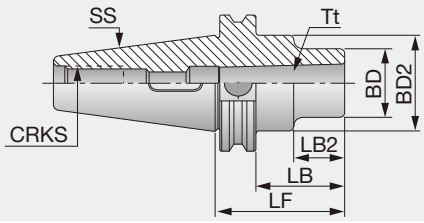
Jacobs taper holder with CAT shank



Inch	SS	Tt	LF	BD	CRKS
CAT40DCJ2X1.500	40	J2	1.5	1.752	5/8-11
CAT40DCJ3X1.500	40	J3	1.5	1.75	5/8-11
CAT40DCJ4X1.500	40	J4	1.5	1.752	5/8-11
CAT40DCJ6X1.500	40	J6	1.5	1.752	5/8-11
CAT40DCJ33X1.500	40	J33	1.5	1.752	5/8-11
CAT50DCJ3X1.656	50	J3	1.656	2.752	1-8
CAT50DCJ4X1.500	50	J4	1.5	2.752	1-8
CAT50DCJ5X1.625	50	J5	1.625	2.752	1-8
CAT50DCJ6X1.500	50	J6	1.5	2.752	1-8
CAT50DCJ33X1.500	50	J33	1.5	2.752	1-8

CAT-MT

Morse taper holder with CAT shank



Inch	SS	Tt	LF	LB	LB2	BD	BD2	CRKS
CAT40MT1X1.750	40	MT1	1.75	1	0.37	1	1.752	5/8-11
CAT40MT2X2.250	40	MT2	2.25	1.5	0.87	1.26	1.752	5/8-11
CAT40MT3X2.765	40	MT3	2.765	2.015	-	-	1.752	5/8-11
CAT40MT4X3.625	40	MT4	3.625	2.875	2.245	2.008	1.752	5/8-11
CAT50MT1X1.500	50	MT1	1.5	0.75	0.12	1	2.752	1-8
CAT50MT2X2.000	50	MT2	2	1.25	0.62	1.26	2.752	1-8
CAT50MT3X2.500	50	MT3	2.5	1.75	1.12	1.575	2.752	1-8
CAT50MT4X3.375	50	MT4	3.375	2.625	1.995	1.969	2.752	1-8
CAT50MT5X3.750	50	MT5	3.75	3	-	-	2.752	1-8

Reference pages


Pull stud K140 -

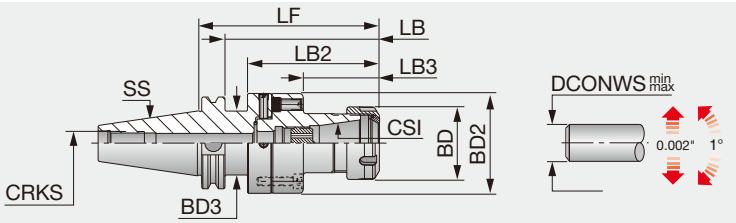

Clamping screw K146


Wrench K148

TUNGFINE

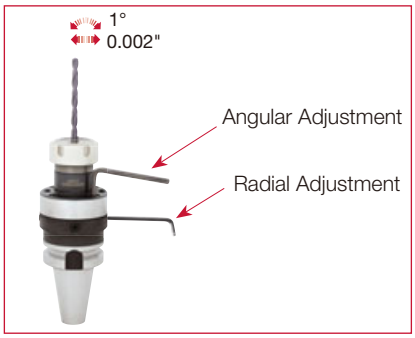
ADJ CAT-ER

ER Collet Chucks with Center Alignment and CAT Shanks



Inch	SS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3	CRKS
ADJCAT40D2.756ER32	40	ER32	0.08 - 0.789	4.902	4.152	3.522	2.067	1.969	2.756	1.752	5/8-11
ADJCAT50D2.756ER32	50	ER32	0.08 - 0.789	4.902	4.152	-	2.067	1.969	2.756	-	1-8

Applicable for 10 MPa pressure coolant.



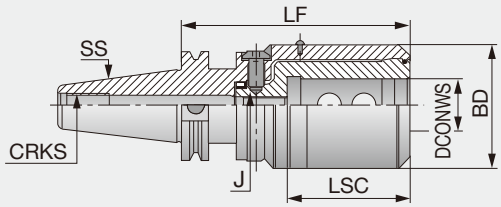
Reference pages

Pull stud K140 -
ER collet K118 -
Nut K142, K143
Wrench K145
Preset screw K144

TUNGBORE

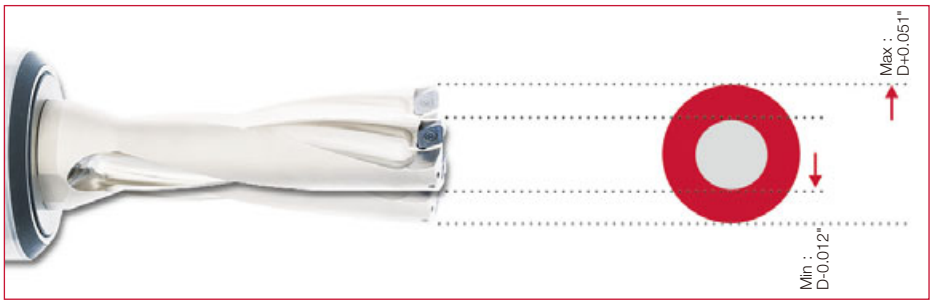
TUNGBORE-CAT

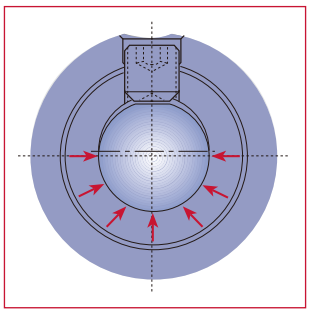
TungBore adjustable drilling dia. holder with CAT shank



Inch	SS	BD	DCONWS	LF	LSC	J	CRKS
TUNGBORE-CAT40EM1ADB	40	2.835	1	5.338	2.795	M10	5/8-11
TUNGBORE-CAT40EM1-1/4ADB	40	2.835	1.25	5.338	2.795	M10	5/8-11
TUNGBORE-CAT40EM1-1/2ADB	40	2.835	1.5	5.338	2.795	M10	5/8-11
TUNGBORE-CAT50EM3/4ADB	50	2.835	0.75	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1ADB	50	2.835	1	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1-1/4ADB	50	2.835	1.25	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1-1/2ADB	50	2.835	1.5	5.177	2.795	M10	1-8

Applicable for 10 MPa pressure coolant.





The bore's section is actually made from two shifted circular sections. The clamping screw pushes the drill shank through a narrowed opening, forcing elastic deformation of the holder. Contact is made around more than 180°, providing a high clamping force.

Reference pages



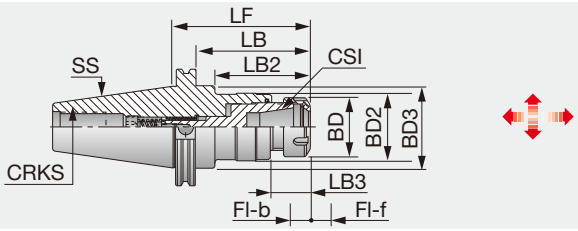
Pull stud

K140 -

TUNGGTI

GTI-CAT

TungGTI tapping attachment with CAT shank



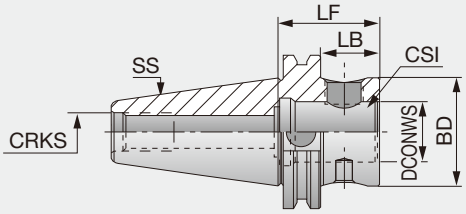
Inch	SS	CSI	Tap min	Tap max	LF	LB	LB2	LB3	BD	BD2	BD3	Fl-f	Fl-b	CRKS
GTICAT40ER16	40	ER16	#6	3/8	3.203	2.453	1.823	0.969	1.102	1.161	1.752	0.32	0.12	5/8-11
GTICAT40ER32	40	ER32	1/4	3/4	4.439	3.689	3.059	1.299	1.969	2.224	1.752	0.36	0.16	5/8-11
GTICAT40ER40	40	ER40	1/4	1-1/8	5.148	4.398	3.768	2.008	2.480	2.224	1.752	0.36	0.16	5/8-11
GTICAT50ER16	50	ER16	#6	3/8	4.213	3.463	2.833	0.969	1.102	1.161	2.752	0.32	0.12	1-8
GTICAT50ER32	50	ER32	1/4	3/4	4.543	3.793	3.163	1.299	1.969	2.224	2.752	0.36	0.16	1-8
GTICAT50ER40	50	ER40	1/4	1-1/8	5.252	4.502	3.872	2.008	2.480	2.224	2.752	0.36	0.16	1-8

Applicable for 10 MPa pressure coolant.

TUNGFIT

CAT-CF

TungFit quick change style modular tooling system with CAT shank



Inch	SS	CSI	LF	LB	DCONWS	BD	CRKS
CAT40CF4-L	40	CF4	4.000	3.252	0.984	1.752	5/8-11
CAT40CF4-S	40	CF4	1.750	1.000	0.984	1.752	5/8-11
CAT50CF4-L	50	CF4	4.000	3.252	0.984	1.752	1-8
CAT50CF4-S	50	CF4	1.750	1.000	0.984	1.752	1-8

Tightening torque: 43.4 lb·ft
Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

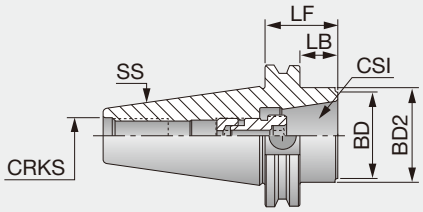
Reference pages

Pull stud K140 - | ER collet K139, K140 | Nut K142, K143 | Wrench K144 | Preset screw K145

TUNGCLICK

CAT-CLICK

TungClick quick change tooling system with CAT shank



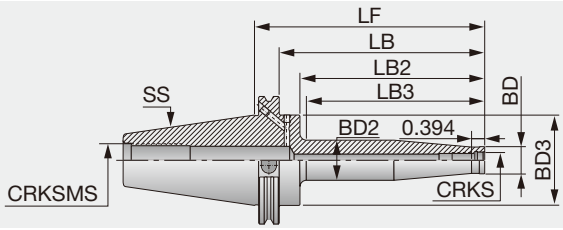
Inch	SS	CSI	LF	LB	BD	BD2	CRKS
CAT40ER32CLICK-IN	40	32SRF	0.789	-	1.614	-	5/8X11
CAT50ER32CLICK-INM	50	32SRF	1.419	0.669	1.614	2.752	1-8

Tightening torque: 235 N·m
Applicable for 10 MPa pressure coolant.

TUNGFLEX

CAT-ODP

TungFlex modular tooling system with CAT shank



Inch	SS	CRKS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKSMS
CAT40ODPM6X2.000	40	M6	0.380	0.511	-	2.000	0.935	-	0.935	5/8-11
CAT40ODPM6X4.000	40	M6	0.380	0.725	-	4.000	2.935	-	2.935	5/8-11
CAT40ODPM8X2.000	40	M8	0.510	0.580	-	2.000	0.944	-	0.944	5/8-11
CAT40ODPM8X4.000	40	M8	0.510	0.790	-	4.000	2.913	-	2.913	5/8-11
CAT40ODPM10X2.000	40	M10	0.710	0.780	-	2.000	1.062	-	1.062	5/8-11
CAT40ODPM10X4.000	40	M10	0.710	0.990	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM12X4.000	40	M12	0.830	1.110	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM12X6.000	40	M12	0.830	1.310	-	6.000	5.118	-	5.118	5/8-11
CAT40ODPM16X4.000	40	M16	1.140	1.420	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM16X6.000	40	M16	1.140	1.620	-	6.000	5.118	-	5.118	5/8-11
CAT50ODPM8X5.000 (1)	50	M8	0.516	0.906	2.752	5.000	4.232	3.602	3.405	1-8
CAT50ODPM10X3.000 (1)	50	M10	0.709	0.693	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM10X7.000 (1)	50	M10	0.709	1.102	2.752	7.000	6.232	5.602	5.405	1-8
CAT50ODPM12X3.000 (1)	50	M12	0.827	0.811	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM12X7.000 (1)	50	M12	0.827	1.220	2.752	7.000	6.232	5.602	5.405	1-8
CAT50ODPM16X3.000 (1)	50	M16	1.142	1.126	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM16X7.000 (1)	50	M16	1.142	1.339	2.752	7.000	6.232	5.602	5.405	1-8

(1) Balanced to G2.5 12,000 min^{-1}
Applicable for 10 MPa pressure coolant.

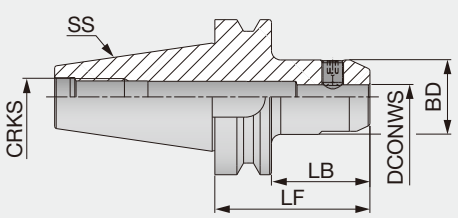
Reference pages

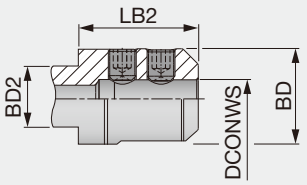

Pull stud
K140 -


ER 32 ODP
K133

BT-FC-EM

DIN1835 Form B endmill holders with BT MAS-403 face contact AD tapered shanks





For DCONWS ≥ 0.875", 25 mm

Inch	SS	DCONWS	BD	BD2	LF	LB	LB2	CRKS
BT30FCEM1/2X2.350	30	0.500	1.752	-	2.350	1.483	-	M12
BT30FCEM5/8X2.350	30	0.625	1.752	-	2.350	1.483	-	M12
BT30FCEM3/4X2.350	30	0.750	1.752	-	2.350	1.483	-	M12
BT30FCEM1X4.000	30	1.000	2.560	1.784	4.000	3.134	2.740	M12

Metric	SS	DCONWS	BD	BD2	LF	LB	LB2	CRKS
BT30FCEM12X60	30	12	42	-	60	38	-	M12
BT30FCEM16X60	30	16	45.9	-	60	38	-	M12
BT30FCEM20X80	30	20	52	44.4	80	58	48	M12
BT40FCEM10X65	40	10	35	-	65	39	-	M16
BT40FCEM12X65	40	12	42	-	65	39	-	M16
BT40FCEM16X65	40	16	48	-	65	39	-	M16
BT40FCEM20X75	40	20	52	-	75	49	-	M16
BT40FCEM25X105	40	25	65	61	105	79	68	M16
BT40FCEM32X110	40	32	71	61	110	83	73	M16
BT50FCEM12X100	50	12	42	-	100	62	-	M24
BT50FCEM16X100	50	16	48	-	100	63.5	-	M24
BT50FCEM20X100	50	20	52	-	100	63.5	-	M24
BT50FCEM25X115	50	25	65	-	115	78.5	-	M24
BT50FCEM32X115	50	32	71	-	115	78.5	-	M24
BT50FCEM40X115	50	40	90	-	115	78.5	-	M24
BT50FCEM50X125	50	50	100	-	125	87	-	M24

Applicable for 10 MPa coolant.

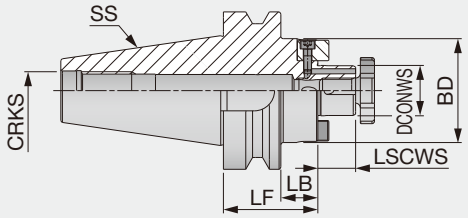
Reference pages


Pull stud K140 -


Clamping screw K147

BT-FC-SEM-C

Shell mill holders with coolant holes and BT MAS-403 face contact AD tapered shanks





Inch	SS	DCONWS	BD	LF	LB	LSCWS	CRKS
BT30FCSEM1/2X2.000C	30	0.500	1.378	2.000	1.134	0.570	M12
BT30FCSEM3/4X2.000C	30	0.750	1.771	2.000	1.134	0.670	M12
BT30FCSEM1.0X2.000C	30	1.000	2.165	2.000	1.134	0.670	M12

Balanced to G2.5 max.n: 20,000 min^{-1}
Applicable for 10 MPa coolant.

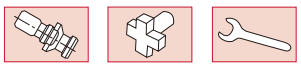
Option: Wrench for lock screw

Metric	SS	DCONWS	BD	LF	LB	LSCWS	CRKS
BT30FCSEM16X50C	30	16	38	50	28	17	M12
BT30FCSEM22X50C	30	22	47	50	28	19	M12
BT30FCSEM27X50C	30	27	58	50	28	21	M12
BT40FCSEM16X60C	40	16	38	60	34	17	M16
BT40FCSEM22X60C	40	22	47	60	34	19	M16
BT40FCSEM22X120C	40	22	47	120	94	19	M16
BT40FCSEM27X45C	40	27	58	45	19	21	M16
BT40FCSEM32X60C	40	32	66	60	34	24	M16
BT50FCSEM16X75C	50	16	38	75	38.5	17	M24
BT50FCSEM16X120C	50	16	38	120	83.5	17	M24
BT50FCSEM22X75C	50	22	47	75	38.5	19	M24
BT50FCSEM22X120C	50	22	47	120	83.5	19	M24
BT50FCSEM27X60C	50	27	58	60	23.5	21	M24
BT50FCSEM27X105C	50	27	58	105	68.5	21	M24
BT50FCSEM32X60C	50	32	66	60	11.5	24	M24
BT50FCSEM40X60C	50	40	82	60	11.5	27	M24

Balanced to G2.5 max.n: 20,000 min^{-1}
Applicable for 10 MPa coolant.

Option: Wrench for lock screw

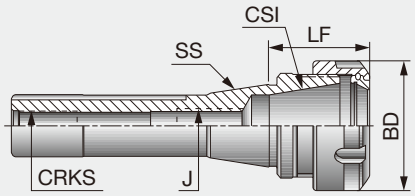
Reference pages



K140 - K146 K148

R-8 ER

ER collet chuck holder (R-8 Bridgeport)



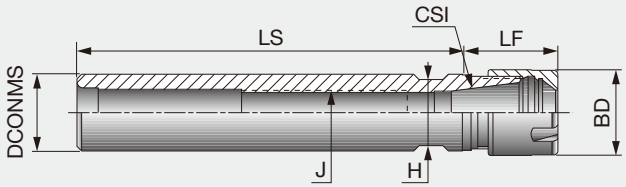
Metric	SS	CSI	Range	LF	BD	J	CRKS
R-8ER16X38	R-8	ER16	0.5-10	38	28	M10	7/16-20
R-8ER32X40	R-8	ER32	2-20	40	50	M12	7/16-20
R-8ER40X72	R-8	ER40	3-26	72	63	M12	7/16-20

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

ST-ER-M

ER Mini collet chuck holder (straight shank)



Metric	DCONMS	CSI	Range	LS	LF	J	BD	H
ST12X80ER11M	12	ER11	0.5-7	80	26.5	-	16	11
ST16X50ER11MF	16	ER11	0.5-7	50	18.5	M8	16	13
ST16X100ER11M	16	ER11	0.5-7	100	18.5	M8	16	13
ST16X150ER11M	16	ER11	0.5-7	150	18.5	M8	16	13
ST12X80ER16M	12	ER16	0.5-10	80	36.5	-	22	17
ST20X100ER16M	20	ER16	0.5-10	100	25	M12	22	17
ST20X150ER16M	20	ER16	0.5-10	150	25	M12	22	17
ST20X100ER20M	20	ER20	1-13	100	40	M12	28	21
ST20X150ER20M	20	ER20	1-13	150	40	M12	28	21

• Applicable for 10 MPa coolant
• F indicates a flat on the shank.

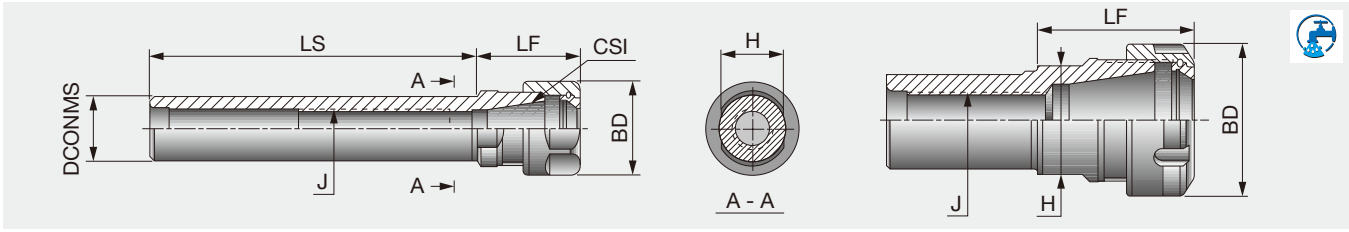
Option: Wrench for ER collet

Reference pages

ER collet K118 -
Nut K142, K143
Wrench K145
Preset screw K144

ST-ER

ER collet chuck holder (Straight shank)



Metric	DCONMS	CSI	Range	LS	LF	J	BD	H
ST16X50ER11F	16	ER11	0.5-7	50	18.5	M8	19	13
ST20X50ER11F	20	ER11	0.5-7	50	18.5	M10	19	17
ST20X100ER11	20	ER11	0.5-7	100	18.5	M10	19	17
ST20X150ER11	20	ER11	0.5-7	150	18.5	M10	19	17
ST20X50ER16F	20	ER16	0.5-10	50	32.3	M12	28	19
ST20X100ER16	20	ER16	0.5-10	100	30	M12	28	19
ST20X150ER16	20	ER16	0.5-10	150	30	M12	28	19
ST20X50ER20F	20	ER20	1-13	50	42.5	M12	34	22
ST25X100ER20	25	ER20	1-13	100	36	M16	34	22
ST25X150ER20	25	ER20	1-13	150	36	M16	34	22
ST20X50ER25F	20	ER25	1-16	50	46	M12	42	28
ST20X100ER25	20	ER25	1-16	100	46	M12	42	28
ST20X50ER32F	20	ER32	2-20	50	54	M12	50	36
ST20X100ER32	20	ER32	2-20	100	54	M12	50	36
ST25X50ER25F	25	ER25	1-16	50	46	M16	42	28
ST25X100ER25	25	ER25	1-16	100	46	M16	42	28
ST25X50ER32F	25	ER32	2-20	50	52	M16x2	50	36
ST25X50ER40F	25	ER40	3-26	50	60	M16x2	63	45
ST30X50ER32F	30	ER32	2-20	50	52	M18x1.5	50	36
ST30X50ER40F	30	ER40	3-26	50	60	M18x1.5	63	45
ST32X50ER32F	32	ER32	2-20	50	52	M18x1.5	50	36
ST32X150ER32	32	ER32	2-20	150	52	M18x1.5	50	36
ST32X50ER40F	32	ER40	3-26	50	60	M18x1.5	63	45
ST40X75ER32F	40	ER32	2-20	75	46	M22x1.5	50	44
ST40X75ER40F	40	ER40	3-26	75	55	M22x1.5	63	45
ST50X80ER40F	50	ER40	3-26	80	60	M28x1.5	63	54
ST50X80ER50F	50	ER50	10-34	80	77	M36x1.5	78	58

- Applicable for 10 MPa coolant
- F indicates a flat on the shank.

Option: Wrench for ER collet

Reference pages


ER collet K118 -

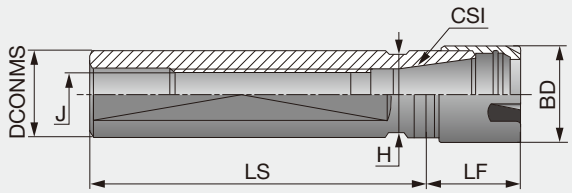

Nut K142, K143


Wrench K145


Preset screw K144

ST-ER-MF

ER Mini collet chuck holder, with flat, for Swiss machines



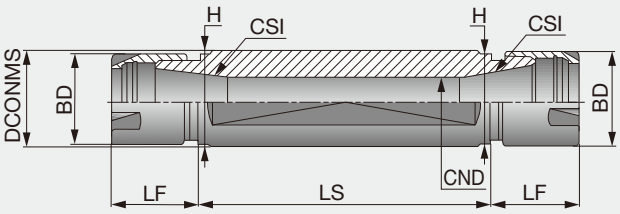
Metric	DCONMS	CSI	Range	LS	LF	J	BD	H	Machine
ST16X35ER16MF	16	ER16	0.5-10	35	36	M8X1	22	17	Citizen
ST16X38ER11MF	16	ER11	0.5-7	38	18.5	M8X1	16	14	Citizen
ST16X140ER11MF	16	ER11	0.5-7	140	18.5	M8X1	16	14	Tsugami, Citizen
ST20X70ER16MF	20	ER16	0.5-10	70	26	M12X1	22	17	Tsugami, Citizen
ST20X120ER16MF	20	ER16	0.5-10	120	26	M12X1	22	17	Tsugami, Citizen
ST20X140ER16MF	20	ER16	0.5-10	140	26	M12X1	22	17	Tsugami, Citizen
ST22X38ER16MF	22	ER16	0.5-10	38	26	M12X1	22	19	Star
ST22X70ER16MF	22	ER16	0.5-10	70	26	M12X1	22	19	Star
ST22X70ER25MF	22	ER25	0.5-16	70	47	M12X1	35	27	Star
ST22X80ER20MF	22	ER20	1-13	80	39	M12X1	28	21	Star
ST22X100ER16MF	22	ER16	1-16	100	28	M12X1	22	19	Star
ST25X65ER16MF	25	ER16	0.5-10	65	28	M12X1	22	22	Tsugami, Citizen
ST25X75ER25MF	25	ER25	1-16	75	48	M14X1	35	27	Tsugami, Citizen
ST25X100ER20MF	25	ER20	1-13	100	28	M14X1	28	22	Tsugami, Citizen
ST25X145ER25MF	25	ER25	1-16	145	36	M14X1	35	27	Tsugami, Citizen
ST25X154ER20MF	25	ER20	1-13	154	28	M14X1	28	22	Tsugami, Citizen
ST32X70ER25MF	32	ER25	1-16	70	30	M18X1	35	27	Citizen, Star

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

ST-ER-MF-D

ER Mini collet chuck holder, double end type



Metric	DCONMS	CSI	Range	LS	LF	BD	CND	H	Machine
ST16X50ER11MFD	16	ER11	0.5-7	50	18.5	16	7.5	14	-
ST20X30ER11MFD	20	ER11	0.5-7	30	18.5	16	7.5	17	Tsugami, Citizen
ST20X50ER11MFD	20	ER11	0.5-7	50	18.5	16	7.5	17	Tsugami, Citizen
ST20X55ER16MFD	20	ER16	0.5-10	55	25	22	10.5	17	Tsugami, Citizen
ST22X55ER16MFD	22	ER16	0.5-10	55	28	22	10.5	19	Star
ST22X75ER16MFD	22	ER16	0.5-10	75	28	22	10.5	19	Star
ST25X62ER16MFD	25	ER16	0.5-10	62	28	22	10.5	22	Tsugami
ST32X55ER20MFD	32	ER20	1-13	55	28	28	13.5	27	Star
ST32X75ER20MFD	32	ER20	1-13	75	28	28	13.5	27	Star

• Applicable for 10 MPa coolant

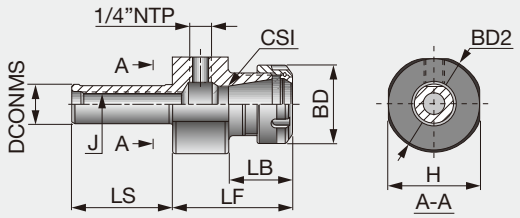
Option: Wrench for ER collet

Reference pages

ER collet K118 -
Nut K142, K143
Wrench K145
Preset screw K144

ST-ER-S

ER collet chuck holder, with the capability of internal coolant supply



Metric	DCONMS	CSI	Range	LS	LF	LB	J	BD	BD2	H
ST20X65ER20S	20	ER20	1-13	65	63	31	M12	34	40	34
ST20X65ER25S	20	ER25	1-16	65	72	32	M12	42	54	51
ST20X65ER32S	20	ER32	2-20	65	77	41	M12	50	63	59
ST32X65ER32S	32	ER32	2-20	65	77	41	M18x1.5	50	63	59
ST40X75ER32S	40	ER32	2-20	75	77	41	M22x1.5	50	63	59

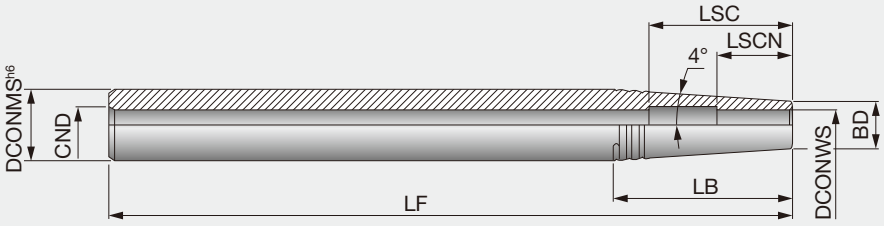
• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGSHRINK

ST-SRK

Thermal shrinking holder for carbide shank (straight shank)



Metric	DCONMS	DCONWS	BD	CND	LF	LB	LSCN	LSC
ST12X160SRK3	12	3	10	4	160	14.3	10	-
ST12X160SRK4	12	4	10	4	160	14.3	12	27
ST16X160SRK3	16	3	10	6	160	43	10	-
ST16X160SRK4	16	4	10	6	160	43	12	-
ST16X160SRK5	16	5	10	6	160	43	15	-
ST16X160SRK6	16	6	11	6	160	35.5	18	35
ST20X200SRK5	20	5	10	6	200	71.5	15	-
ST20X200SRK6	20	6	11	6	200	64.5	18	40
ST20X200SRK8	20	8	14	6	200	43	25	40
ST25X200SRK6	25	6	11	8	200	100	18	35
ST25X200SRK8	25	8	14	8	200	78.6	25	40
ST25X200SRK10	25	10	16	8	200	64.3	30	50
ST25X200SRK12	25	12	20	8	200	35.7	32	52

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

Reference pages


ER collet K118 -


Nut K142, K143


Wrench K145


Preset screw K144

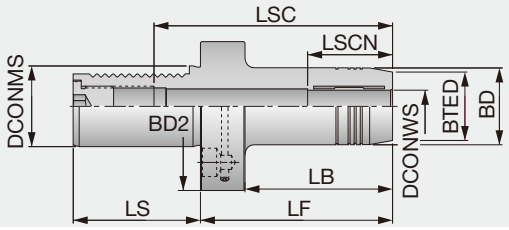

Induction heating unit K137


Heating unit K137

TUNGHYDRO

DIN69880-HYDRO

Hydraulic chuck holder (DIN69880)



Unit (mm)

Metric	DCONMS	BTED	BD	BD2	DCONWS	LS	LF	LB	LSCN	LSC
DIN69880 30 HYDRO 20X89	20	38	42	68	30	55	89	73	48	85
DIN69880 30 HYDRO 25X100	25	46	50	68	30	55	100	78	54	85
DIN69880 40 HYDRO 20X95	20	38	42	83	40	63	95	73	48	130
DIN69880 40 HYDRO 25X95	25	46	50	83	40	63	95	73	54	130
DIN69880 40 HYDRO 32X95	32	56	60	83	40	63	95	78	58	90

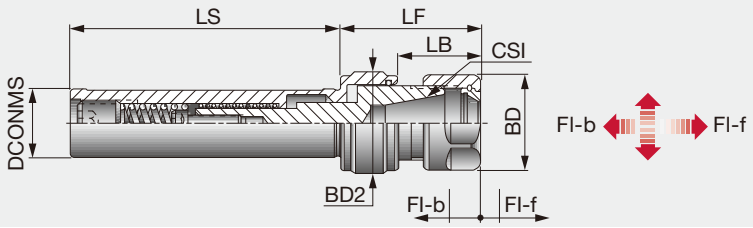
• Applicable for 10 MPa coolant
Available are reduction sleeves for 12, 20, 25 and 32 mm bore diameters.
Chucking forces will significantly reduce if reduction sleeves are used (ordered separately).

Option: Wrench for TungHydro collet

TUNGGTI

GTI-ER-ST

Tapping holder (straight shank)

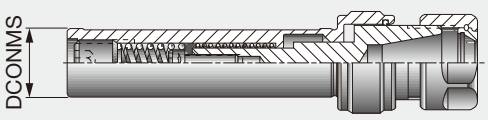


Metric	DCONMS	CSI	Tap min	Tap max	Range	BD	BD2	LB	LF	LS	Fl-f	Fl-b
GTIER11ST16X150M	16	ER11	M2	M7	0.5-7	16	-	19	-	150	6	3
GTIER16ST20X80	20	ER16	M3	M10	0.5-10	28	29.5	24.6	41.6	80	8	3
GTIER20ST20X80	20	ER20	M4	M14	1-13	34	33.5	28	49	80	8	3
GTIER25ST25X80	25	ER25	M5	M16	1-16	42	40.5	32	53	80	9	4
GTIER32ST25X80	25	ER32	M6	M20	1-16	50	56.5	32	77.2	80	9	4
GTIER40ST32X80	32	ER40	M6	M27	2-20	63	56.5	51	95.2	80	9	4

Option: Wrench for ER collet

KIT GTI-ER-ST

ER tapping holder and spring collets (straight shank)





Metric	Collet size	DCONMS	Qty	Range
KITGTIER11ST16X1504M	ER11	16	4	3,4,5,6
KITGTIER16ST20X804	ER16	20	4	4,5,6,7
KITGTIER20ST20X804	ER20	20	4	5,6,7,8
KITGTIER25ST25X805	ER25	25	5	6,7,9,11,12
KITGTIER32ST25X806	ER32	25	6	6,7,9,11,12,16
KITGTIER40ST32X806	ER40	32	6	9,11,14,16,18,20

Includes GTI collets and wrench

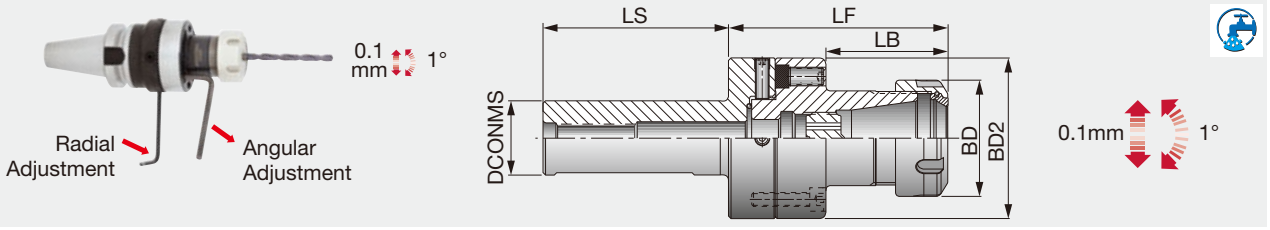
Reference pages

Straight collet K130
ER collet K139, K140
Nut K142, K143
Wrench K144
Preset screw K145

TUNGFINE

ADJ ST-ER

ER collet chuck holder with center alignment



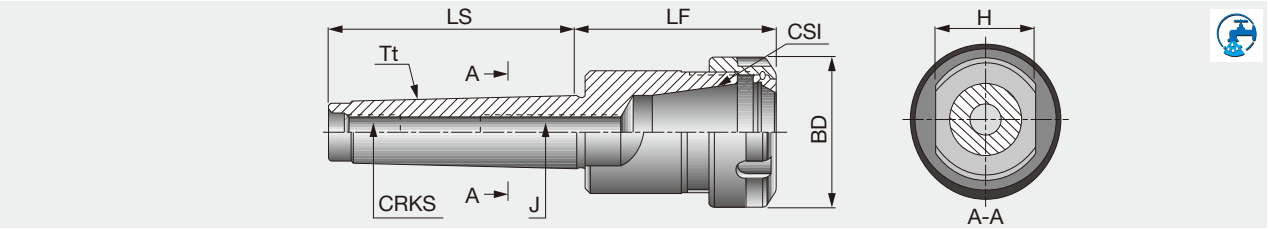
Metric	Range	LF	LB	LS	BD	BD2	DCONMS
ADJST25D70ER32	2-20	94.5	52.5	80	50	70	25
ADJST32D70ER32	2-20	94.5	52.5	80	50	70	32

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

MT-ER

ER collet chuck holder with Morse taper



Metric	Tt	CSI	Range	LF	LS	BD	J	CRKS	H
MT2ER20X48.5	MT 2	ER20	1-13	48.5	64	34	M10	M10	22
MT2ER25X52	MT 2	ER25	1-16	52	64	42	M10	M10	28
MT3ER32X69	MT 3	ER32	2-20	69	81	50	M12	M12	24
MT3ER40X79	MT 3	ER40	3-26	79	81	63	M12	M12	24
MT4ER32X61	MT 4	ER32	2-20	60.5	102.5	50	M16	M16	32
MT4ER40X82	MT 4	ER40	3-26	81.5	102.5	63	M16	M16	32
MT4ER50X108	MT 4	ER50	10-34	107.5	102.5	78	M16	M16	32
MT5ER40X82	MT 5	ER40	3-26	82	129.5	63	M28x1.5	M20	45
MT5ER50X85	MT 5	ER50	10-34	85	129.5	78	M28x1.5	M20	45

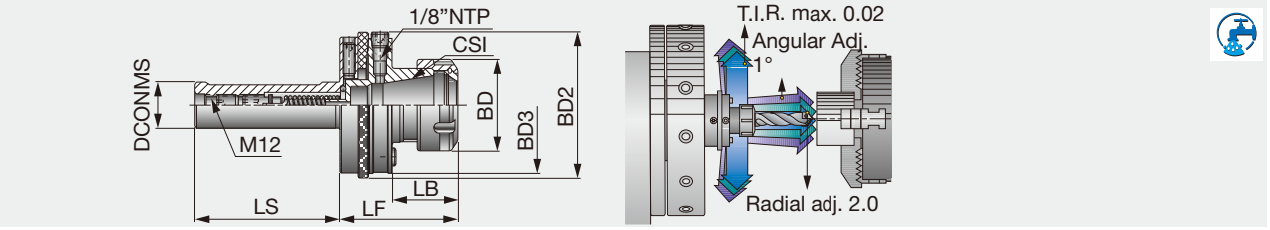
• Applicable for 3 MPa coolant

Option: Wrench for ER collet

TUNGGYRO

GYRO ST-ER TungGYRO

Collet chuck holder with center alignment, for lathes



Metric	DCONMS	CSI	Range	LF	LB	LS	BD	BD3	BD2
GYROST25ER25	25	ER25	1-16	65.65	35.5	80	42	74	79
GYROST40ER32	40	ER32	2-20	66.65	36.5	80	50	74	79

• Applicable for 3 MPa coolant

Option: Wrench for ER collet

For the alignment, first-time users should purchase a TungGyro kit which includes a test bar and a bushing.

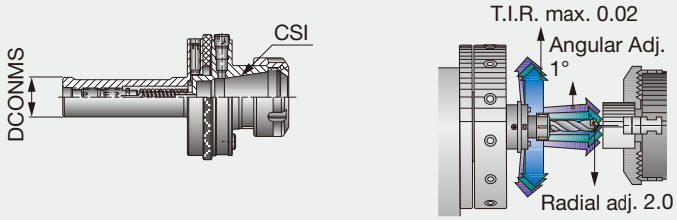
Reference pages

ER collet K118 -
Nut K142, K143
Wrench K144
Preset screw K145

TUNGGYRO

KIT GYRO-ST-ER

Kit for holders with center alignment (straight shank)



Inch	DCONMS	CSI	Range
KITGYROST1-1/4XER32	1.25	ER32	0.080 - 0.789

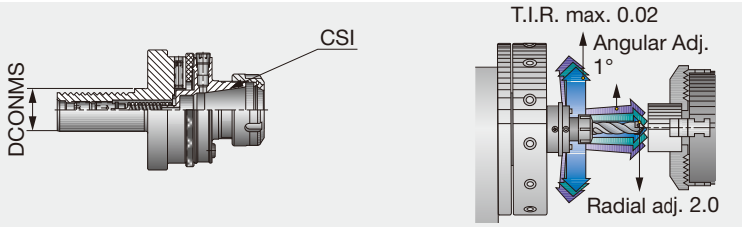
Metric	DCONMS	CSI	Range
KITGYROST20ER25	20	ER25	1-16
KITGYROST25ER25	25	ER25	1-16
KITGYROST40ER32	40	ER32	2-20

• Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

Option: Wrench for ER collet

KIT GYRO-DIN69880-ER

Kit for holders with center alignment (DIN69880)



Metric	DCONMS	CSI	Range
KITGYRO30D69880ER25	30	ER25	1-16
KITGYRO30D69880ER32	30	ER32	2-20
KITGYRO40D69880ER32	40	ER32	2-20
KITGYRO50D69880ER32	50	ER32	2-20

• Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

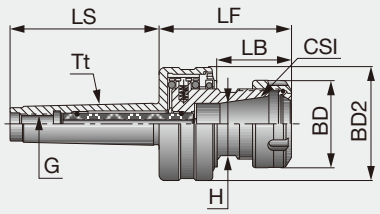
Option: Wrench for ER collet

Reference pages

ER collet K118 -
Nut K142, K143
Wrench K144
Preset screw K145

GFI-MT-ER

Floating reamer collet chuck



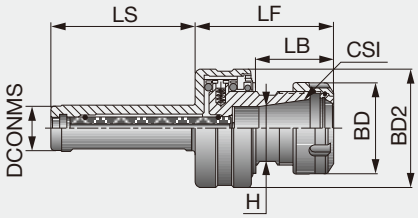
Metric	Tt	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H	G
GFIMT2ER20	MT 2	ER20	1-13	64	60.5	34.5	34	50	1	22	M10
GFIMT3ER32	MT 3	ER32	2-20	81	81.9	45.9	50	65	1.6	36	M12

• Applicable for 3 MPa coolant
Maximum 2000 min^{-1}

Option: Wrench for ER collet

GFI-ST-ER

Floating reamer collet chuck



Metric	DCONMS	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H
GFIST20ER20	20	ER20	1-13	65	55.5	34.5	34	50	1	22
GFIST25ER32	25	ER32	2-20	80	76.9	45.9	50	65	1.6	36

• Applicable for 3 MPa coolant
Maximum 2000 min^{-1}

Option: Wrench for ER collet

Reference pages


ER collet K118 -


Nut K142, K143

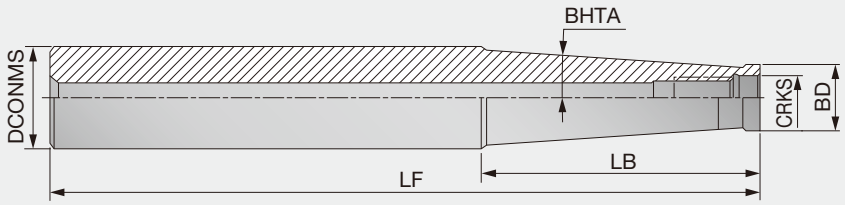

Wrench K144


Preset screw K145

TUNGFLEX

SM

Steel modular shank



Metric	DCONMS	BD	LF	LB	BHTA	CRKS
SM06-L60C10	10	9.7	60	20	0°	M6
SM06-L105-C12	12	9.7	105	60	1.2°	M6
SM06-L125-C16	16	9.7	125	60	3.3°	M6
SM08-L73C16	16	13	73	25	0°	M8
SM08-L128-C16	16	13	128	80	0.9°	M8
SM08-L170-C20	20	13	170	66.8	3.3°	M8
SM10-L80C20	20	18	80	30	0°	M10
SM10-L130-C20	20	18	130	80	0.6°	M10
SM10-L200-C25	25	19	200	57.2	3.3°	M10
SM12-L86-C25	25	21	86	30	5.1°	M12
SM12-L200-C32	32	21	200	78	4.4°	M12
SM16-L95-C32	32	29	95	35	1.7°	M16
SM16-L230-C32	32	29	230	50	1.8°	M16

• Applicable for 10 MPa coolant
A coolant hole with all types of shanks

SM-C-H

Carbide modular shank

Fig. 1

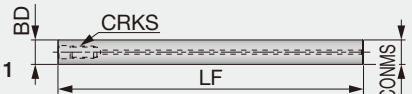


Fig. 2

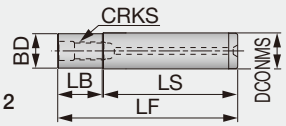
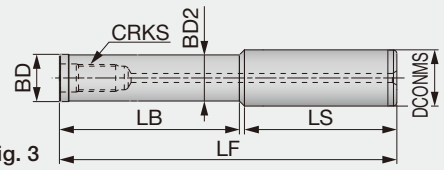


Fig. 3



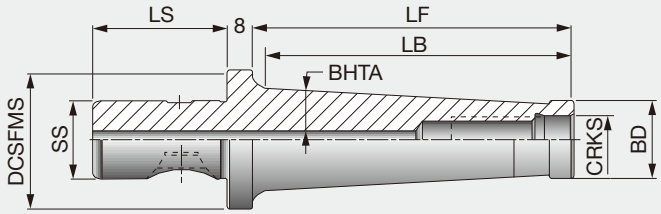
Metric	CRKS	DCONMS	LF	LB	LS	BD	BD2	Fig.
SM06-L100-C10-C-H	M6	10	100	-	-	10	-	1
SM06-L150-C10-C-H	M6	10	150	-	-	10	-	1
SM06-L100-C12-C-H	M6	12	100	-	-	12	-	1
SM06-L150-C12-C-H	M6	12	150	-	-	12	-	1
SM08-L80-20-C16-C-H	M8	16	80	20	59.6	15.3	-	2
SM08-L100-40-C16-C-H	M8	16	100	40	59.6	15.3	-	2
SM08-L150-80-C16-C-H	M8	16	150	80	69.6	15.3	-	2
SM08-L200-100-C16-C-H	M8	16	200	100	98.2	13	12.5	3
SM08-L200-140-C16-C-H	M8	16	200	140	59.6	15.3	-	2
SM08-L250-180-C16-C-H	M8	16	250	180	69.6	15.3	-	2
SM10-L80-20-C20-C-H	M10	20	80	20	59.2	18.5	-	2
SM10-L100-40-C20-C-H	M10	20	100	40	59.2	18.5	-	2
SM10-L150-80-C20-C-H	M10	20	150	80	69.2	18.5	-	2
SM10-L200-100-C20-C-H	M10	20	200	100	99.2	18.5	-	2
SM10-L200-140-C20-C-H	M10	20	200	140	58.7	18	17.5	3
SM10-L200-140-C20-C-H-N	M10	20	200	140	59.2	18.5	-	2
SM10-L250-130-C20-C-H	M10	20	250	130	118.7	18	17.5	3
SM10-L250-180-C20-C-H	M10	20	250	180	68.7	18	17.5	3
SM10-L250-180-C20-C-H-N	M10	20	250	180	69.2	18.5	-	2
SM10-L300-180-C20-C-H	M10	20	300	180	118.7	18	17.5	3
SM10-L300-230-C20-C-H	M10	20	300	230	68.7	18	17.5	3
SM12-L100-40-C25-C-H	M12	25	100	40	59.5	24	-	2
SM12-L150-80-C25-C-H	M12	25	150	80	67.7	21	20.5	3
SM12-L150-80-C25-C-H-N	M12	25	150	80	69.5	24	-	2
SM12-L200-100-C25-C-H	M12	25	200	100	97.7	21	20.5	3
SM12-L200-100-C25-C-H-N	M12	25	200	100	99.5	24	-	2

Metric	CRKS	DCONMS	LF	LB	LS	BD	BD2	Fig.
SM12-L200-140-C25-C-H	M12	25	200	140	57.7	21	20.5	3
SM12-L250-130-C25-C-H	M12	25	250	130	117.7	21	20.5	3
SM12-L250-180-C25-C-H	M12	25	250	180	69.5	24	-	2
SM12-L300-180-C25-C-H	M12	25	300	180	117.7	21	20.5	3
SM12-L300-180-C25-C-H-N	M12	25	300	180	119.5	24	-	2
SM12-L300-230-C25-C-H	M12	25	300	230	67.7	21	20.5	3
SM16-L100-40-C32-C-H	M16	32	100	40	58.5	29	-	2
SM16-L150-80-C32-C-H	M16	32	150	80	68.5	29	-	2
SM16-L200-100-C32-C-H	M16	32	200	100	98.5	29	-	2
SM16-L200-140-C32-C-H	M16	32	200	140	58.5	29	-	2
SM16-L250-130-C32-C-H	M16	32	250	130	118.5	29	-	2
SM16-L250-180-C32-C-H	M16	32	250	180	68.5	29	-	2
SM16-L300-180-C32-C-H	M16	32	300	180	118.5	29	-	2
SM16-L300-230-C32-C-H	M16	32	300	230	68.5	29	-	2
SM16-L350-230-C32-C-H	M16	32	350	230	118.5	29	-	2
SM16-L350-280-C32-C-H	M16	32	350	280	68.5	29	-	2

TUNGFIT TUNGFLEX

SM-CF4 TungFit adaptor

TungFlex - TungFit conversion adapter



Metric	BD	LF	LB	BHTA	SS	DCSFMS	LS	CRKS
SM12-L85/3.30-CF4	21	93	81.3	4.4°	CF4	44	42	M12
SM16-L130/5.11-CF4	29	138	126.8	2.6°	CF4	44	42	M16
SM12-L140/5.50-CF4	21	148	139.1	4.4°	CF4	44	42	M12
SM16-L170/6.70-CF4	29	178	168.6	2°	CF4	44	42	M16

• Applicable for 10 MPa coolant

TUNGFLEX

CAB M-M

Reducer and extension

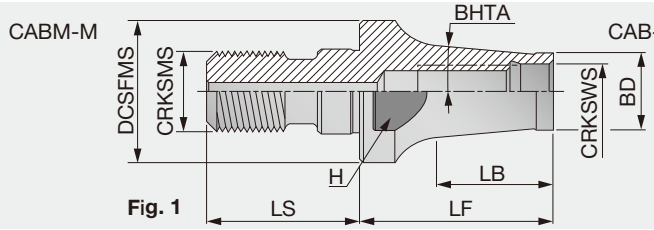


Fig. 1

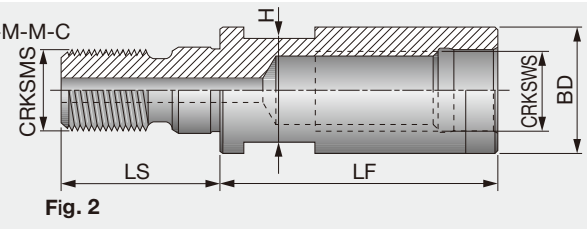


Fig. 2

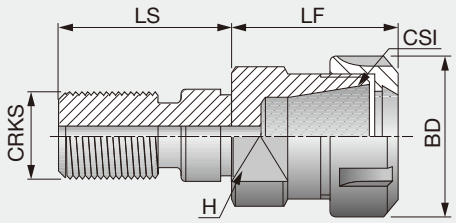
Metric	CRKSMS	BHTA	BD	LF	LB	DCSFMS	LS	H	CRKSWS	Fig.
CABM06M08	M8	5.7°	9.7	30	24.8	13	17.5	9.5	M6	1
CABM08M08-C	M8	0°	13	30	-	-	17.5	9.6	M8	2
CABM08M10	M10	5.2°	13	40	33.4	18	20	15	M8	1
CABM10M10-C	M10	0°	18	35	-	-	20	15	M10	2
CABM10M12	M12	2.5°	18	45	36.4	21	22	17	M10	1
CABM12M12-C	M12	0°	21	40	-	-	22	17	M12	2
CABM12M16	M16	6.3°	21	50	42.5	29	25	25	M12	1
CABM16M16-C	M16	0°	29	40	-	-	25	25	M16	2

Applicable for 10 MPa coolant

TUNGFLEX

CDP-ER-M

ER collet chuck holder



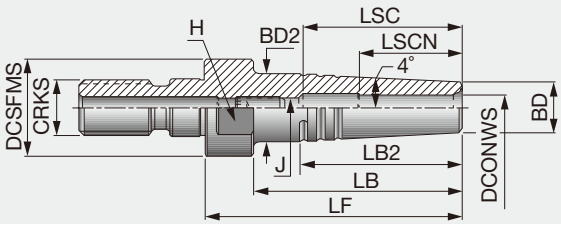
Metric	CRKS	CSI	Range	LF	LS	BD	H
CDPER11M10M	M10	ER11	0.5-7	27	20	16	15
CDPER16M10M	M10	ER16	0.5-10	38.1	20	22	17
CDPER11M12M	M12	ER11	0.5-7	27	22	16	17
CDPER16M12M	M12	ER16	0.5-10	37.1	22	22	17
CDPER16M16	M16	ER16	0.5-10	36.6	25	28	25
CDPER20M16	M16	ER20	1-13	45.5	25	34	25
CDPER25M16	M16	ER25	1-16	44.5	25	42	28

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

CDP-M-SRK

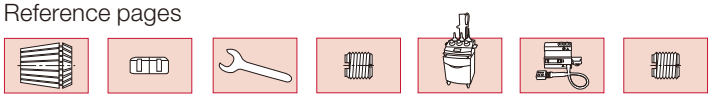
Thermal shrinking holder for carbide shank



Metric	CRKS	DCSFMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	H	Wrench
CDPM10SRK3X40	M10	18	3	10	14	40	31.5	28.4	10	16	M4	15	2
CDPM10SRK4X40	M10	18	4	10	14	40	31.5	28.4	12	19	M4	15	2
CDPM10SRK5X40	M10	18	5	10	14	40	31.5	28.4	15	25	M4	15	2
CDPM12SRK3X45	M12	21	3	10	14	45	36.5	28.8	10	16	M5	18	2.5
CDPM12SRK4X45	M12	21	4	10	14	45	36.5	28.8	12	18	M5	18	2.5
CDPM12SRK5X45	M12	21	5	10	14	45	36.5	28.8	15	25	M5	18	2.5
CDPM12SRK6X45	M12	21	6	11	15	45	36.5	28.4	18	28	M5	18	2.5
CDPM12SRK8X45	M12	21	8	14	18	45	36.5	28.8	25	35	M5	18	2.5
CDPM12SRK10X45	M12	21	10	16	21	45	-	35.6	30	40	M5	18	2.5
CDPM12SRK12X45	M12	21	12	20	25	45	-	36.0	32	42	M5	18	2.5

• Applicable for 10 MPa coolant

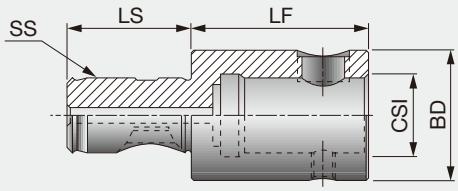
Reference pages



K118 - | K142, K143 | K144 | K145 | K137 | K137 | K147

EX-CF

Extension adapter

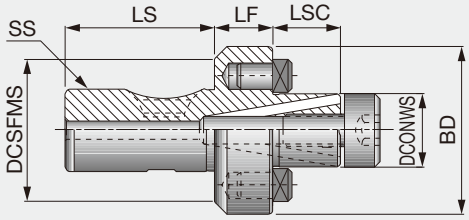


Metric	SS	LS	LF	CSI	BD
EXCF4-S	CF4	42	60	CF4	44
EXCF4-L	CF4	42	100	CF4	44

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

SEM-CF

Shell mill adapter



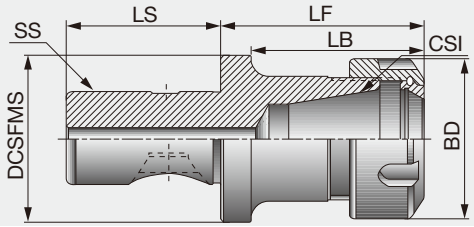
Metric	SS	DCONWS	DCSFMS	BD	LF	LSC	LS
SEM22CF4C	CF4	22	44	47	16	19	42

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

Option: Wrench for Lock Screw

ER-CF

ER collet chuck adapter



Metric	SS	CSI	Range	LF	LB	LS	BD	DCSFMS
ER11CF4-S	CF4	ER11	0.5-7	55	47	42	19	44
ER16CF4-L	CF4	ER16	0.5-10	100	92	42	28	44
ER16CF4-S	CF4	ER16	0.5-10	55	47	42	28	44
ER20CF4-S	CF4	ER20	1-13	55	92	42	34	44
ER32CF4-L	CF4	ER32	2-20	100	92	42	50	44
ER32CF4-S	CF4	ER32	2-20	55	47	42	50	44

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

Option: Wrench for Lock Screw

Reference pages

ER collet K118 - | Nut K142, K143 | Wrench K144

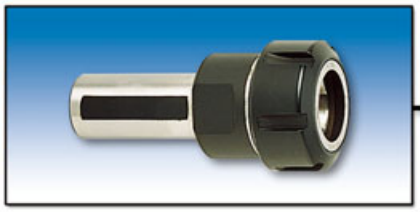
TUNGHOLD ER Collet Chucking System

Shanks

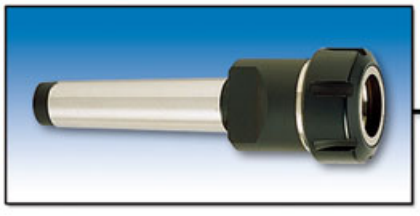
BT MAS-403



ST Straight Shank



MT Morse Taper

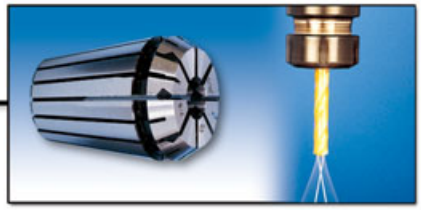


Collet Options

ER Spring Collet



ER-SEAL
(ER SEAL Collet for Internal coolant)



ER-SEAL JET2
(ER SEAL Collet for External coolant)



ER-SHRINK
(ER Collet with SHRINK Holder)



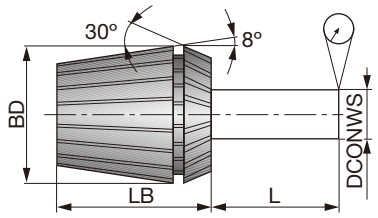
ER GTI
(ER Collet with Tapping Holder)



ER-ODP
(ER Collet with Indexable Modular System)



ER Collet standard DIN6499



Collet size	BD	LB	L	DCONWS	T.I.R. Precision		DIN6499
					Standard type	AA ultra precision type	
ER11	11.5	18	6	1-1.6	0.01	0.005	-
ER16	17	27	10	1.6-3	0.01	0.005	0.015
ER20	21	31	16	3-6	0.01	0.005	0.015
ER25	26	35	25	6-10	0.01	0.005	0.015
ER32	33	40	40	10-18	0.01	0.005	0.020
ER40	41	46	50	18-26	0.01	0.005	0.020
ER50	52	60	60	26-34	0.01	-	0.025

ER - Coolit Sealed Collet

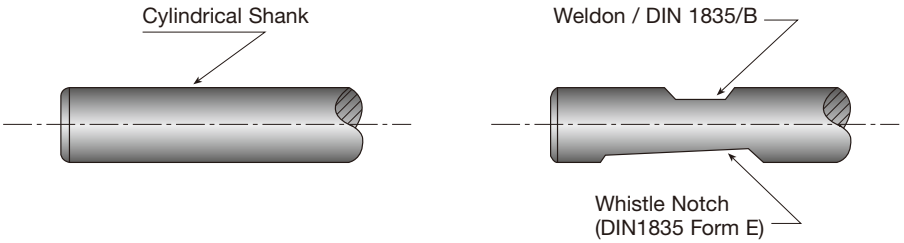


For internal coolant holders
Sealed Collet
- JET
For straight shank cutting tools with internal coolant supply.



For External coolant holders
Sealed Collet
- JET2
With angular double nozzles. Coolant flow is direct to the cutting edge - for use with standard straight shank cutting tools (without coolant hole)

Standard Shank which can be used in Sealed Collets

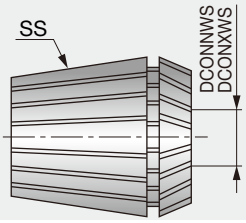


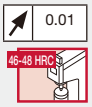
Note: The front end of the sealed collet should be located beyond Weldon or the whistle notch.

ER-SPR

ER spring collets (Metric, DIN6499)







Metric	SS	DCONNWS	DCONXWS
ER11SPR0.5-1.0	ER11	0.5	1
ER11SPR1.0-1.5	ER11	1	1.5
ER11SPR1.5-2.0	ER11	1.5	2
ER11SPR2.0-2.5	ER11	2	2.5
ER11SPR2.5-3.0	ER11	2.5	3
ER11SPR3.0-3.5	ER11	3	3.5
ER11SPR3.5-4.0	ER11	3.5	4
ER11SPR4.0-4.5	ER11	4	4.5
ER11SPR4.5-5.0	ER11	4.5	5
ER11SPR5.0-5.5	ER11	5	5.5
ER11SPR5.5-6.0	ER11	5.5	6
ER11SPR6.0-6.5	ER11	6	6.5
ER11SPR6.5-7.0	ER11	6.5	7
ER16SPR0.5-1	ER16	0.5	1
ER16SPR1-1.5	ER16	1	1.5
ER16SPR1.5-2	ER16	1.5	2
ER16SPR2-3 (*)	ER16	2	3.1
ER16SPR3-4 (*)	ER16	3.2	4
ER16SPR4-5	ER16	4	5
ER16SPR5-6	ER16	5	6
ER16SPR6-7	ER16	6	7
ER16SPR7-8	ER16	7	8
ER16SPR8-9	ER16	8	9
ER16SPR9-10	ER16	9	10
ER20SPR1-1.5	ER20	1	1.5
ER20SPR1.5-2	ER20	1.5	2
ER20SPR2-3	ER20	2	3
ER20SPR3-4	ER20	3	4
ER20SPR4-5	ER20	4	5
ER20SPR5-6	ER20	5	6
ER20SPR6-7	ER20	6	7
ER20SPR7-8	ER20	7	8
ER20SPR8-9	ER20	8	9
ER20SPR9-10	ER20	9	10
ER20SPR10-11	ER20	10	11
ER20SPR11-12	ER20	11	12
ER20SPR12-13	ER20	12	13
ER25SPR1-1.5	ER25	1	1.5
ER25SPR1.5-2	ER25	1.5	2
ER25SPR2-3	ER25	2	3
ER25SPR3-4	ER25	3	4
ER25SPR4-5	ER25	4	5
ER25SPR5-6	ER25	5	6
ER25SPR6-7	ER25	6	7
ER25SPR7-8	ER25	7	8
ER25SPR8-9	ER25	8	9
ER25SPR9-10	ER25	9	10
ER25SPR10-11	ER25	10	11
ER25SPR11-12	ER25	11	12
ER25SPR12-13	ER25	12	13
ER25SPR13-14	ER25	13	14
ER25SPR14-15	ER25	14	15
ER25SPR15-16	ER25	15	16

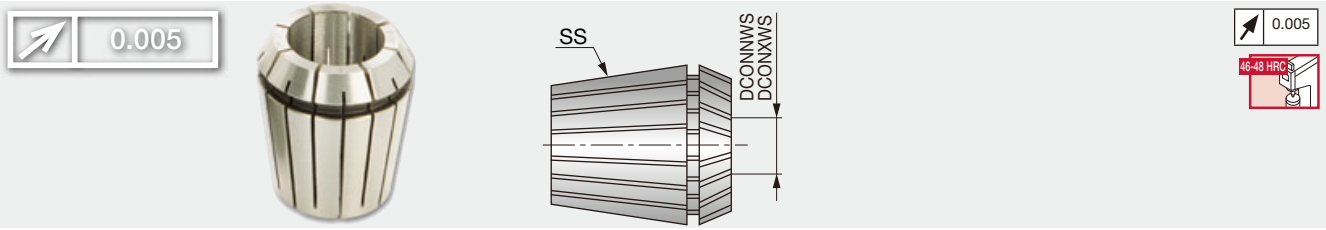
Metric	SS	DCONNWS	DCONXWS
ER32SPR2-3	ER32	2	3
ER32SPR3-4	ER32	3	4
ER32SPR4-5	ER32	4	5
ER32SPR5-6	ER32	5	6
ER32SPR6-7	ER32	6	7
ER32SPR7-8	ER32	7	8
ER32SPR8-9	ER32	8	9
ER32SPR9-10	ER32	9	10
ER32SPR10-11	ER32	10	11
ER32SPR11-12	ER32	11	12
ER32SPR12-13	ER32	12	13
ER32SPR13-14	ER32	13	14
ER32SPR14-15	ER32	14	15
ER32SPR15-16	ER32	15	16
ER32SPR16-17	ER32	16	17
ER32SPR17-18	ER32	17	18
ER32SPR18-19	ER32	18	19
ER32SPR19-20	ER32	19	20
ER40SPR3-4	ER40	3	4
ER40SPR4-5	ER40	4	5
ER40SPR5-6	ER40	5	6
ER40SPR6-7	ER40	6	7
ER40SPR7-8	ER40	7	8
ER40SPR8-9	ER40	8	9
ER40SPR9-10	ER40	9	10
ER40SPR10-11	ER40	10	11
ER40SPR11-12	ER40	11	12
ER40SPR12-13	ER40	12	13
ER40SPR13-14	ER40	13	14
ER40SPR14-15	ER40	14	15
ER40SPR15-16	ER40	15	16
ER40SPR16-17	ER40	16	17
ER40SPR17-18	ER40	17	18
ER40SPR18-19	ER40	18	19
ER40SPR19-20	ER40	19	20
ER40SPR20-21	ER40	20	21
ER40SPR21-22	ER40	21	22
ER40SPR22-23	ER40	22	23
ER40SPR23-24	ER40	23	24
ER40SPR24-25	ER40	24	25
ER40SPR25-26	ER40	25	26
ER50SPR10-12	ER50	10	12
ER50SPR12-14	ER50	12	14
ER50SPR14-16	ER50	14	16
ER50SPR16-18	ER50	16	18
ER50SPR18-20	ER50	18	20
ER50SPR20-22	ER50	20	22
ER50SPR22-24	ER50	22	24
ER50SPR24-26	ER50	24	26
ER50SPR26-28	ER50	26	28
ER50SPR28-30	ER50	28	30
ER50SPR30-32	ER50	30	32
ER50SPR32-34	ER50	32	34

(*) For shank diameter ø3 - ø3.1 use "ER16SPR2-3"

(Unit: mm)

ER-SPR-AA

ER spring AA collets (Metric, DIN6499)



Metric	SS	DCONNWS	DCONXWS
ER11SPR0.5-1.0AA	ER11	0.5	1
ER11SPR1.0-1.5AA	ER11	1	1.5
ER11SPR1.5-2.0AA	ER11	1.5	2
ER11SPR2.0-2.5AA	ER11	2	2.5
ER11SPR2.5-3.0AA	ER11	2.5	3
ER11SPR3.0-3.5AA	ER11	3	3.5
ER11SPR3.5-4.0AA	ER11	3.5	4
ER11SPR4.0-4.5AA	ER11	4	4.5
ER11SPR4.5-5.0AA	ER11	4.5	5
ER11SPR5.0-5.5AA	ER11	5	5.5
ER11SPR5.5-6.0AA	ER11	5.5	6
ER11SPR6.0-6.5AA	ER11	6	6.5
ER11SPR6.5-7.0AA	ER11	6.5	7
ER16SPR0.5-1AA	ER16	0.5	1
ER16SPR1.5-2AA	ER16	1.5	2
ER16SPR2-3AA (*)	ER16	2	3.1
ER16SPR3-4AA (*)	ER16	3.2	4
ER16SPR4-5AA	ER16	4	5
ER16SPR5-6AA	ER16	5	6
ER16SPR6-7AA	ER16	6	7
ER16SPR7-8AA	ER16	7	8
ER16SPR8-9AA	ER16	8	9
ER16SPR9-10AA	ER16	9	10
ER20SPR1.5-2AA	ER20	1.5	2
ER20SPR2-3AA	ER20	2	3
ER20SPR3-4AA	ER20	3	4
ER20SPR4-5AA	ER20	4	5
ER20SPR5-6AA	ER20	5	6
ER20SPR6-7AA	ER20	6	7
ER20SPR7-8AA	ER20	7	8
ER20SPR8-9AA	ER20	8	9
ER20SPR9-10AA	ER20	9	10
ER20SPR10-11AA	ER20	10	11
ER20SPR11-12AA	ER20	11	12
ER20SPR12-13AA	ER20	12	13
ER25SPR1.5-2AA	ER25	1.5	2
ER25SPR2-3AA	ER25	2	3
ER25SPR3-4AA	ER25	3	4
ER25SPR4-5AA	ER25	4	5
ER25SPR5-6AA	ER25	5	6
ER25SPR6-7AA	ER25	6	7
ER25SPR7-8AA	ER25	7	8
ER25SPR8-9AA	ER25	8	9
ER25SPR9-10AA	ER25	9	10
ER25SPR10-11AA	ER25	10	11
ER25SPR11-12AA	ER25	11	12
ER25SPR12-13AA	ER25	12	13
ER25SPR13-14AA	ER25	13	14
ER25SPR14-15AA	ER25	14	15
ER25SPR15-16AA	ER25	15	16
ER32SPR2-3AA	ER32	2	3
ER32SPR3-4AA	ER32	3	4
ER32SPR4-5AA	ER32	4	5
ER32SPR5-6AA	ER32	5	6
ER32SPR6-7AA	ER32	6	7
ER32SPR7-8AA	ER32	7	8
ER32SPR8-9AA	ER32	8	9
ER32SPR9-10AA	ER32	9	10
ER32SPR10-11AA	ER32	10	11
ER32SPR11-12AA	ER32	11	12
ER32SPR12-13AA	ER32	12	13
ER32SPR13-14AA	ER32	13	14
ER32SPR14-15AA	ER32	14	15
ER32SPR15-16AA	ER32	15	16
ER32SPR16-17AA	ER32	16	17
ER32SPR17-18AA	ER32	17	18
ER32SPR18-19AA	ER32	18	19
ER32SPR19-20AA	ER32	19	20
ER40SPR3-4AA	ER40	3	4
ER40SPR4-5AA	ER40	4	5
ER40SPR5-6AA	ER40	5	6
ER40SPR6-7AA	ER40	6	7
ER40SPR7-8AA	ER40	7	8
ER40SPR8-9AA	ER40	8	9
ER40SPR9-10AA	ER40	9	10
ER40SPR10-11AA	ER40	10	11
ER40SPR11-12AA	ER40	11	12
ER40SPR12-13AA	ER40	12	13
ER40SPR13-14AA	ER40	13	14
ER40SPR14-15AA	ER40	14	15
ER40SPR15-16AA	ER40	15	16
ER40SPR16-17AA	ER40	16	17
ER40SPR17-18AA	ER40	17	18
ER40SPR18-19AA	ER40	18	19
ER40SPR19-20AA	ER40	19	20
ER40SPR20-21AA	ER40	20	21
ER40SPR21-22AA	ER40	21	22
ER40SPR22-23AA	ER40	22	23
ER40SPR23-24AA	ER40	23	24
ER40SPR24-25AA	ER40	24	25
ER40SPR25-26AA	ER40	25	26

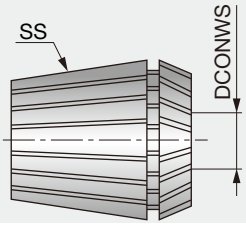
(Unit: mm)

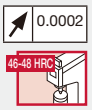
(*) For shank diameter ø3 - ø3.1 use "ER16SPR2-3AA"

ER-EX-AA

ER 11 AA collets (inch)





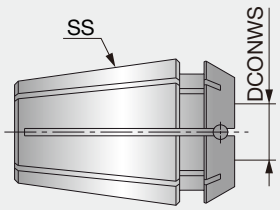


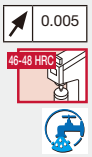
Inch	SS	DCONWS	Inch	SS	DCONWS
ER11EX.1/16AA	ER11	0.062	ER11EX.3/16AA	ER11	0.187
ER11EX.3/32AA	ER11	0.094	ER11EX.7/32AA	ER11	0.219
ER11EX.1/8AA	ER11	0.125	ER11EX.1/4AA	ER11	0.25
ER11EX.5/32AA	ER11	0.156			

ER-SEAL-AA

ER sealed spring collets (metric)





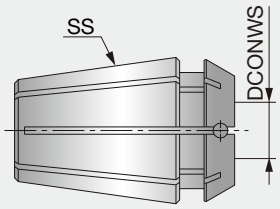


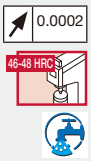
Metric	SS	DCONWS	Metric	SS	DCONWS
ER11SEAL3AA	ER11	3	ER25SEAL14AA	ER25	14
ER11SEAL4AA	ER11	4	ER25SEAL15AA	ER25	15
ER11SEAL5AA	ER11	5	ER25SEAL16AA	ER25	16
ER11SEAL6AA	ER11	6	ER32SEAL4AA	ER32	4
ER16SEAL4AA	ER16	4	ER32SEAL5AA	ER32	5
ER16SEAL5AA	ER16	5	ER32SEAL6AA	ER32	6
ER16SEAL6AA	ER16	6	ER32SEAL7AA	ER32	7
ER16SEAL7AA	ER16	7	ER32SEAL8AA	ER32	8
ER16SEAL8AA	ER16	8	ER32SEAL9AA	ER32	9
ER16SEAL9AA	ER16	9	ER32SEAL10AA	ER32	10
ER16SEAL10AA	ER16	10	ER32SEAL11AA	ER32	11
ER20SEAL4AA	ER20	4	ER32SEAL12AA	ER32	12
ER20SEAL5AA	ER20	5	ER32SEAL13AA	ER32	13
ER20SEAL6AA	ER20	6	ER32SEAL14AA	ER32	14
ER20SEAL7AA	ER20	7	ER32SEAL15AA	ER32	15
ER20SEAL8AA	ER20	8	ER32SEAL16AA	ER32	16
ER20SEAL9AA	ER20	9	ER32SEAL17AA	ER32	17
ER20SEAL10AA	ER20	10	ER32SEAL18AA	ER32	18
ER20SEAL11AA	ER20	11	ER32SEAL19AA	ER32	19
ER20SEAL12AA	ER20	12	ER32SEAL20AA	ER32	20
ER25SEAL4AA	ER25	4	ER40SEAL6AA	ER40	6
ER25SEAL5AA	ER25	5	ER40SEAL8AA	ER40	8
ER25SEAL6AA	ER25	6	ER40SEAL10AA	ER40	10
ER25SEAL7AA	ER25	7	ER40SEAL12AA	ER40	12
ER25SEAL8AA	ER25	8	ER40SEAL14AA	ER40	14
ER25SEAL9AA	ER25	9	ER40SEAL16AA	ER40	16
ER25SEAL10AA	ER25	10	ER40SEAL18AA	ER40	18
ER25SEAL11AA	ER25	11	ER40SEAL20AA	ER40	20
ER25SEAL12AA	ER25	12	ER40SEAL22AA	ER40	22
ER25SEAL13AA	ER25	13	ER40SEAL25AA	ER40	25

ER-SEAL-AA

ER sealed spring collets (inch)







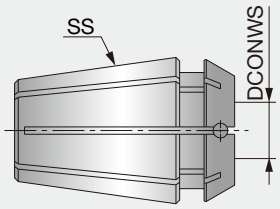
Inch	SS	DCONWS
ER11SEAL1/4AA	ER11	0.250
ER11SEAL1/8AA	ER11	0.125
ER11SEAL3/16AA	ER11	0.188
ER16SEAL1/8AA	ER16	0.125
ER16SEAL3/16AA	ER16	0.188
ER16SEAL1/4AA	ER16	0.250
ER16SEAL5/16AA	ER16	0.313
ER16SEAL3/8AA	ER16	0.375
ER20SEAL1/8AA	ER20	0.125
ER20SEAL3/16AA	ER20	0.188
ER20SEAL1/4AA	ER20	0.250
ER20SEAL5/16AA	ER20	0.313
ER20SEAL3/8AA	ER20	0.375
ER20SEAL7/16AA	ER20	0.438
ER20SEAL1/2AA	ER20	0.500
ER25SEAL1/8AA	ER25	0.125
ER25SEAL3/16AA	ER25	0.188
ER25SEAL1/4AA	ER25	0.250
ER25SEAL5/16AA	ER25	0.313
ER25SEAL3/8AA	ER25	0.375
ER25SEAL7/16AA	ER25	0.438

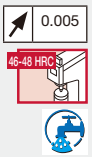
Inch	SS	DCONWS
ER25SEAL1/2AA	ER25	0.500
ER25SEAL9/16AA	ER25	0.563
ER25SEAL5/8AA	ER25	0.625
ER32SEAL1/8AA	ER32	0.125
ER32SEAL3/16AA	ER32	0.188
ER32SEAL1/4AA	ER32	0.250
ER32SEAL5/16AA	ER32	0.313
ER32SEAL3/8AA	ER32	0.375
ER32SEAL7/16AA	ER32	0.438
ER32SEAL1/2AA	ER32	0.500
ER32SEAL9/16AA	ER32	0.563
ER32SEAL5/8AA	ER32	0.625
ER32SEAL11/16AA	ER32	0.688
ER32SEAL3/4AA	ER32	0.750
ER40SEAL1/4AA	ER40	0.125
ER40SEAL3/8AA	ER40	0.375
ER40SEAL1/2AA	ER40	0.500
ER40SEAL5/8AA	ER40	0.625
ER40SEAL3/4AA	ER40	0.750
ER40SEAL1AA	ER40	1.000

ER-SEAL-AAJET

ER sealed spring collets (metric)







Metric	SS	DCONWS
ER16SEAL4AAJET	ER16	4
ER16SEAL5AAJET	ER16	5
ER16SEAL6AAJET	ER16	6
ER16SEAL7AAJET	ER16	7
ER16SEAL8AAJET	ER16	8
ER16SEAL9AAJET	ER16	9
ER16SEAL10AAJET	ER16	10
ER20SEAL4AAJET	ER20	4
ER20SEAL5AAJET	ER20	5
ER20SEAL6AAJET	ER20	6
ER20SEAL7AAJET	ER20	7
ER20SEAL8AAJET	ER20	8
ER20SEAL9AAJET	ER20	9
ER20SEAL10AAJET	ER20	10
ER20SEAL11AAJET	ER20	11
ER20SEAL12AAJET	ER20	12
ER25SEAL4AAJET	ER25	4
ER25SEAL5AAJET	ER25	5
ER25SEAL6AAJET	ER25	6
ER25SEAL7AAJET	ER25	7
ER25SEAL8AAJET	ER25	8
ER25SEAL9AAJET	ER25	9
ER25SEAL10AAJET	ER25	10
ER25SEAL11AAJET	ER25	11
ER25SEAL12AAJET	ER25	12
ER25SEAL13AAJET	ER25	13
ER25SEAL14AAJET	ER25	14
ER25SEAL15AAJET	ER25	15

Metric	SS	DCONWS
ER25SEAL16AAJET	ER25	16
ER32SEAL4AAJET	ER32	4
ER32SEAL5AAJET	ER32	5
ER32SEAL6AAJET	ER32	6
ER32SEAL7AAJET	ER32	7
ER32SEAL8AAJET	ER32	8
ER32SEAL9AAJET	ER32	9
ER32SEAL10AAJET	ER32	10
ER32SEAL11AAJET	ER32	11
ER32SEAL12AAJET	ER32	12
ER32SEAL13AAJET	ER32	13
ER32SEAL14AAJET	ER32	14
ER32SEAL15AAJET	ER32	15
ER32SEAL16AAJET	ER32	16
ER32SEAL17AAJET	ER32	17
ER32SEAL18AAJET	ER32	18
ER32SEAL19AAJET	ER32	19
ER32SEAL20AAJET	ER32	20
ER40SEAL6AAJET	ER40	6
ER40SEAL8AAJET	ER40	8
ER40SEAL10AAJET	ER40	10
ER40SEAL12AAJET	ER40	12
ER40SEAL14AAJET	ER40	14
ER40SEAL16AAJET	ER40	16
ER40SEAL18AAJET	ER40	18
ER40SEAL20AAJET	ER40	20
ER40SEAL22AAJET	ER40	22
ER40SEAL25AAJET	ER40	25

SET-ER-SPR

Set of ER spring collets (Metric, DIN6499)

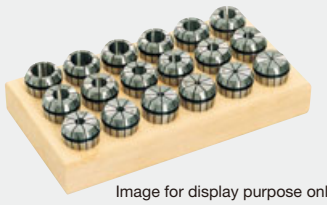
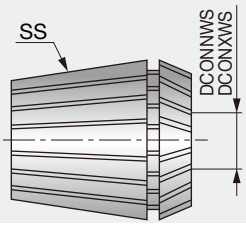


Image for display purpose only





Metric	SS	Qty	DCONNWS	DCONXWS
SETER11SPR13	ER11	13	0.5	7
SETER16SPR10	ER16	10	0.5	10
SETER20SPR12	ER20	12	1	13
SETER25SPR15	ER25	15	1	16
SETER32SPR18	ER32	18	2	20
SETER40SPR23	ER40	23	3	26
SETER50SPR12	ER50	12	10	34

(Unit: mm)

SET-ER-SPR-AA

Set of ER spring AA collets (Metric, DIN6499)

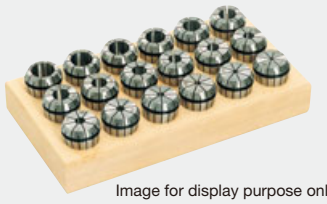
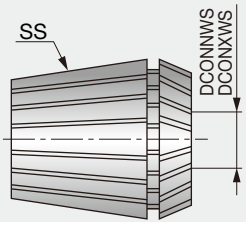
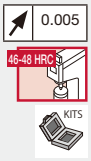


Image for display purpose only





Metric	SS	Qty	DCONNWS	DCONXWS
SETER11SPR13AA	ER11	13	0.5	7
SETER16SPR10AA	ER16	10	0.5	10
SETER20SPR12AA	ER20	12	1	13
SETER25SPR15AA	ER25	15	1	16
SETER32SPR18AA	ER32	18	2	20
SETER40SPR23AA	ER40	23	3	26

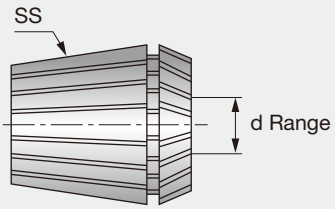
(Unit: mm)

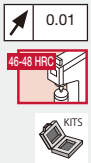
SET-ER-SPR-EM

Set of ER spring collets, for endmills (Metric, DIN6499)



Image for display purpose only





Metric	SS	Qty	Range
SETER11SPR7EM	ER11	7	1, 2, 3, 4, 5, 6, 7
SETER16SPR8EM	ER11	8	3, 4, 5, 6, 7, 8, 9, 10
SETER20SPR5EM	ER11	5	4, 6, 8, 10, 12
SETER25SPR6EM	ER11	6	4, 6, 8, 10, 12, 16
SETER32SPR6EM	ER11	6	6, 8, 10, 12, 20
SETER40SPR7EM	ER11	7	6, 8, 10, 12, 20, 25

(Unit: mm)

Contains popular endmill sizes only.

SETER-SEAL-AA

SET ER sealed spring collets

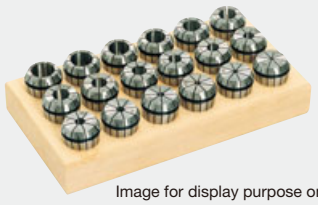
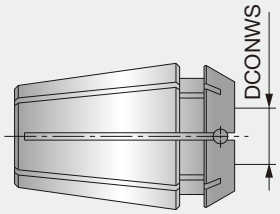
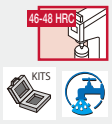


Image for display purpose only





Metric	Qty	DCONNWS	DCONXWS
SETER16SEAL7AA	7	4	10
SETER20SEAL9AA	9	4	12
SETER25SEAL13AA	13	4	16
SETER32SEAL17AA	17	4	20
SETER40SEAL10AA	10	6	25
SETER16SEAL5AAINCH*	5	1/8*	3/8*
SETER20SEAL7AAINCH*	7	1/8*	1/2*
SETER25SEAL9AAINCH*	9	1/8*	5/8*
SETER32SEAL11AAINCH*	11	1/8*	3/4*
SETER40SEAL6AAINCH*	6	1/4*	1*

*inch

SETER-SEAL-AAJET

SET ER sealed spring collets

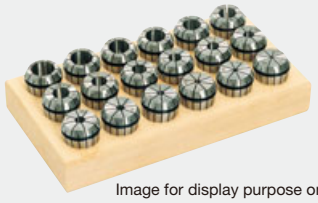
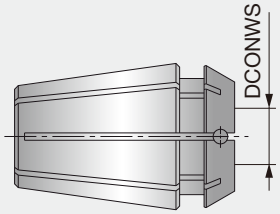
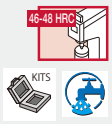


Image for display purpose only





Metric	Qty	DCONNWS	DCONXWS
SETER16SEAL7AAJET	7	4	10
SETER20SEAL9AAJET	9	4	12
SETER25SEAL13AAJET	13	4	16
SETER32SEAL17AAJET	17	4	20
SETER40SEAL10AAJET	10	6	25
SETER16S5AAJETINCH*	5	1/8*	3/8*
SETER20S7AAJETINCH*	7	1/8*	1/2*
SETER25S9AAJETINCH*	9	1/8*	5/8*
SETER32S11AAJETINCH*	11	1/8*	3/4*
SETER40S6AAJETINCH*	6	1/4*	1*

*inch

KIT R-8-ER

Kit for ER collet chuck and spring collets (R-8 Bridgeport)



Metric	Collet size	Qty	Range
KITR-810ER16	ER16	10	0.5-10
KITR-818ER32	ER32	18	2-20

Each kit has one collet chuck, a full set of ER collets, and a wrench.

KIT DIN2080-ER

Kit for ER collet chuck and spring collets (DIN2080)



Metric	Collet size	Qty	Range
KITDIN20803018ER32	ER32	18	2-20
KITDIN20804018ER32	ER32	18	2-20
KITDIN20804023ER40	ER40	23	3-26
KITDIN20805023ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

KIT MT-ER

Kit for ER collet chuck and spring collets (Morse taper)



Metric	Collet size	Qty	Range
KITMT318ER32	ER32	18	2-20
KITMT423ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

KIT ST-ER-Mini

Kit for ER Mini collet chuck and spring collets (cylindrical shank)



Metric	Collet size	Qty	Range
KITST12X807ER11M	ER11	7	0.5-7
KITST12X8010ER16M	ER16	10	0.5-10
KITST16X507ER11MF	ER11	7	0.5-7
KITST16X1007ER11M	ER11	7	0.5-7
KITST16X1507ER11M	ER11	7	0.5-7
KITST20X10010ER16M	ER16	10	0.5-10
KITST20X15010ER16M	ER16	10	0.5-10
KITST20X10012ER20M	ER20	12	1-12
KITST20X15012ER20M	ER20	12	1-12

• Each kit contains one collet chuck, a full set of ER collets and a Wrench. • F indicates a flat on the shank.

KIT ST-ER

Kit for ER collet chuck and spring collets (cylindrical shank)

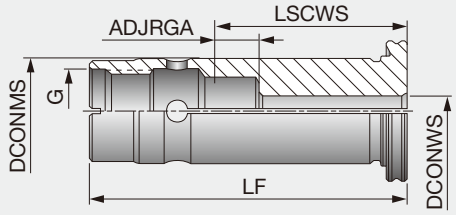


Metric	Collet size	Qty	Range
KITST16X507ER11F	ER11	7	0.5-7
KITST20X1007ER11	ER11	7	0.5-7
KITST20X1507ER11	ER11	7	0.5-7
KITST20X5010ER16F	ER16	10	0.5-10
KITST20X10010ER16	ER16	10	0.5-10
KITST20X15010ER16	ER16	10	0.5-10
KITST20X5012ER20F	ER20	12	1-12
KITST25X10012ER20	ER20	12	1-12

• Each kit contains one collet chuck, a full set of ER collets and a Wrench. • F indicates a flat on the shank.

SC-SPR

SC straight collet



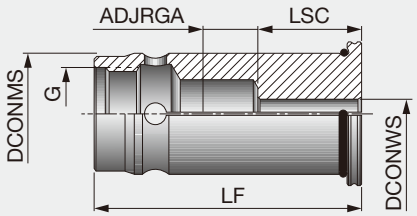
Inch	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC3/4SPR1/4	0.250	0.750	2.362	1.378	0.276	M16
SC3/4SPR5/16	0.313	0.750	2.362	1.378	0.276	M16
SC3/4SPR3/8	0.375	0.750	2.362	1.890	0.512	M16
SC3/4SPR7/16	0.438	0.750	2.362	1.417	0.315	M16
SC3/4SPR1/2	0.500	0.750	2.362	1.378	0.276	M16
SC3/4SPR5/8	0.625	0.750	2.362	1.897	0.354	M16
SC1-1/4SPR1/4	0.250	1.250	2.835	1.791	0.689	M2.4X1.5
SC1-1/4SPR5/16	0.313	1.250	2.835	1.791	0.689	M2.4X1.5
SC1-1/4SPR3/8	0.375	1.250	2.835	1.791	0.413	M2.4X1.5
SC1-1/4SPR1/2	0.500	1.250	2.835	1.792	0.217	M2.4X1.5
SC1-1/4SPR5/8	0.625	1.250	2.835	2.441	0.709	M2.4X1.5
SC1-1/4SPR3/4	0.750	1.250	2.835	2.441	0.630	M2.4X1.5
SC1-1/4SPR7/8	0.875	1.250	2.835	2.422	0.453	M2.4X1.5
SC1-1/4SPR1	1.000	1.250	2.835	2.417	0.409	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC20SPR6	6	20	60	35	7	M16
SC20SPR8	8	20	60	35	7	M16
SC20SPR10	10	20	60	48	13	M16
SC20SPR12	12	20	60	48	8	M16
SC20SPR14	14	20	60	48	8	M16
SC20SPR15	15	20	60	48	8	M16
SC20SPR16	16	20	60	48	9	M16
SC32SPR6	6	32	72	45	17	M24X1.5
SC32SPR8	8	32	72	45	17	M24X1.5
SC32SPR10	10	32	72	48	13	M24X1.5
SC32SPR12	12	32	72	45	5	M24X1.5
SC32SPR14	14	32	72	45	5	M24X1.5
SC32SPR15	15	32	72	59.5	19.5	M24X1.5
SC32SPR16	16	32	72	61.5	17.5	M24X1.5
SC32SPR18	18	32	72	61.5	17.5	M24X1.5
SC32SPR19	19	32	72	61.5	17.5	M24X1.5
SC32SPR20	20	32	72	61.5	15.5	M24X1.5
SC32SPR24	24	32	72	55.5	10.5	M24X1.5
SC32SPR25	25	32	72	61.5	10.5	M24X1.5

TUNGMAX

SC-SEAL

Sealed collet



Inch	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC3/4SEAL1/4	0.250	0.750	2.362	1.102	0.276	M16
SC3/4SEAL5/16	0.313	0.750	2.362	1.102	0.276	M16
SC3/4SEAL3/8	0.375	0.750	2.362	1.378	0.512	M16
SC3/4SEAL7/16	0.438	0.750	2.362	1.575	0.315	M16
SC3/4SEAL1/2	0.500	0.750	2.362	1.575	0.315	M16
SC3/4SEAL5/8	0.625	0.750	2.362	1.543	0.354	M16
SC1-1/4SEAL1/4	0.250	1.250	2.835	1.102	0.689	M2.4X1.5
SC1-1/4SEAL5/16	0.313	1.250	2.835	1.102	0.689	M2.4X1.5
SC1-1/4SEAL3/8	0.375	1.250	2.835	1.378	0.413	M2.4X1.5
SC1-1/4SEAL1/2	0.500	1.250	2.835	1.575	0.217	M2.4X1.5
SC1-1/4SEAL5/8	0.625	1.250	2.835	1.732	0.709	M2.4X1.5
SC1-1/4SEAL3/4	0.750	1.250	2.835	1.811	0.63	M2.4X1.5
SC1-1/4SEAL7/8	0.875	1.250	2.835	1.969	0.453	M2.4X1.5
SC1-1/4SEAL1	1.000	1.250	2.835	2.008	0.453	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC20SEAL6	6	20	60	28	7	M16
SC20SEAL8	8	20	60	28	7	M16
SC20SEAL10	10	20	60	35	13	M16
SC20SEAL12	12	20	60	40	8	M16
SC20SEAL14	14	20	60	40	8	M16
SC20SEAL15	15	20	60	40	8	M16
SC20SEAL16	16	20	60	39	9	M16
SC32SEAL6	6	32	72	28	17	M24X1.5
SC32SEAL8	8	32	72	28	17	M24X1.5
SC32SEAL10	10	32	72	35	13	M24X1.5
SC32SEAL12	12	32	72	40	5	M24X1.5
SC32SEAL14	14	32	72	40	5	M24X1.5
SC32SEAL15	15	32	72	40	5	M24X1.5
SC32SEAL16	16	32	72	44	17.5	M24X1.5
SC32SEAL18	18	32	72	44	17.5	M24X1.5
SC32SEAL19	19	32	72	44	17.5	M24X1.5
SC32SEAL20	20	32	72	46	15.5	M24X1.5
SC32SEAL24	24	32	72	46	15.5	M24X1.5
SC32SEAL25	25	32	72	51	10.5	M24X1.5

PRESET SC-CAP

Preset screw housing for SC-SPR collets

Fig. 1

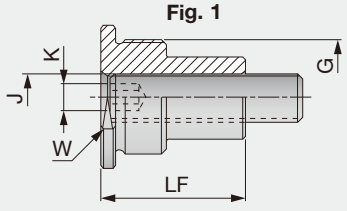
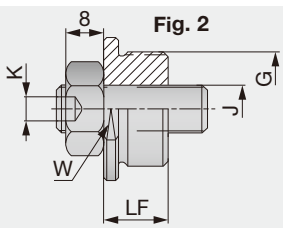


Fig. 2



Metric	LF	W	J	G	Fig.	Range	Key size K	Collet size
PRESETSCCAP8X1.25L	28	16	M8X25	M16	1	6-8	4	SC20
PRESETSCCAP8X1.25	15	16	M8X25	M16	2	10-16	4	SC20
PRESETSCCAP10X1.5L	30	27	M10X30	M24X1.5	1	6-14	5	SC32
PRESETSCCAP10X1.5	13.5	27	M10X30	M24X1.5	2	16-25	5	SC32

KIT CAT-HYDRO

Kit for hydraulic chucks (MAS-CAT Form A/B)



Inch	CAT size	DCONWS	Qty	Range
KITCAT40HYDRO20X73	40	20	5	8,10,12,14,16
KITCAT40HYDRO32X110	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench. (Unit: mm)

KIT DIN69871-HYDRO

Kit for hydraulic chucks (DIN69871)



Metric	SK size	DCONWS	Qty	Range
KITDIN6987140HYDRO20X65	40	20	5	8,10,12,14,16
KITDIN6987140HYDRO32X117	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

KIT HSK A-HYDRO

Kit for hydraulic chucks (HSK)



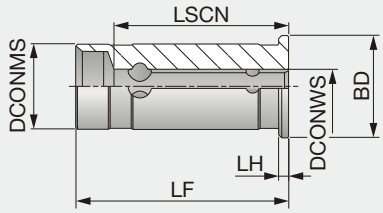
Metric	HSK size	DCONWS	Qty	Range
KITHSKA63HYDRO20X100	63	20	5	8,10,12,14,16
KITHSKA63HYDRO32X125	63	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO

SC-HYDRO

Sealed reduction sleeve for hydraulic chucks



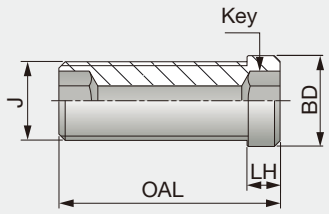
Inch	DCONMS	DCONWS	LSCN	LF	BD	LH
SC3/4SHYDRO1/8	0.750	0.125	1.180	1.965	0.945	0.080
SC3/4SHYDRO1/4	0.750	0.250	1.180	1.965	0.945	0.080
SC3/4SHYDRO5/16	0.750	0.313	1.180	1.965	0.945	0.080
SC3/4SHYDRO3/8	0.750	0.375	1.180	1.965	0.945	0.080
SC3/4SHYDRO1/2	0.750	0.500	1.450	1.965	0.945	0.080
SC3/4SHYDRO5/8	0.750	0.625	1.450	1.965	0.945	0.080
SC1-1/4SHYDRO1/4	1.250	0.250	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO5/16	1.250	0.313	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO3/8	1.250	0.375	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO1/2	1.250	0.500	1.380	2.598	1.400	0.160
SC1-1/4SHYDRO5/8	1.250	0.625	1.380	2.598	1.400	0.160
SC1-1/4SHYDRO3/4	1.250	0.750	1.970	2.598	1.400	0.160
SC1-1/4SHYDRO1"	1.250	1.000	2.600	2.598	1.400	0.160

Metric	DCONMS	DCONWS	LSCN	LF	BD	LH
SC12SHYDRO3	12	3	19	46.5	16	2
SC12SHYDRO4	12	4	24	46.5	16	2
SC12SHYDRO5	12	5	28	46.5	16	2
SC12SHYDRO6	12	6	33	46.5	16	2
SC12SHYDRO8	12	8	39	46.5	16	2
SC20SHYDRO3	20	3	20	53	24	2
SC20SHYDRO4	20	4	25	53	24	2
SC20SHYDRO5	20	5	27	53	24	2
SC20SHYDRO6	20	6	34	53	24	2
SC20SHYDRO8	20	8	39	53	24	2
SC20SHYDRO10	20	10	40	53	24	2
SC20SHYDRO12	20	12	41	53	24	2
SC20SHYDRO14	20	14	44	53	24	2
SC20SHYDRO16	20	16	44	53	24	2
SC25SHYDRO6	25	6	37	60	30	4
SC25SHYDRO8	25	8	37	60	30	4
SC25SHYDRO10	25	10	40	60	30	4
SC25SHYDRO12	25	12	44	60	30	4
SC25SHYDRO14	25	14	46	60	30	4
SC25SHYDRO16	25	16	48	60	30	4
SC25SHYDRO18	25	18	50	60	30	4
SC25SHYDRO20	25	20	50	60	30	4
SC32SHYDRO6	32	6	33	66	40	4
SC32SHYDRO8	32	8	38	66	40	4
SC32SHYDRO10	32	10	39	66	40	4
SC32SHYDRO12	32	12	42	66	40	4
SC32SHYDRO14	32	14	44	66	40	4
SC32SHYDRO16	32	16	44	66	40	4
SC32SHYDRO18	32	18	44	66	40	4
SC32SHYDRO20	32	20	49	66	40	4
SC32SHYDRO25	32	25	66	66	40	4

TUNGHYDRO

PRESET SCREW HYDRO

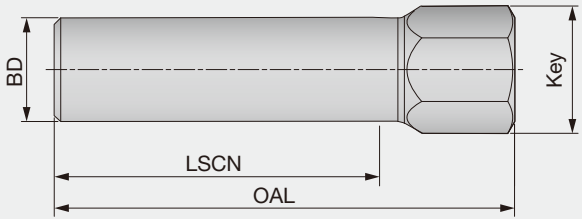
Preset screw for hydraulic collet chucks



Metric	BD	J	OAL	LH	Wrench
PRESETSCREWHYDROM5	5	M5	14	1	2.5
PRESETSCREWHYDROM6	6	M6	14	1.5	3
PRESETSCREWHYDROM8	8	M8X1	14	2	4
PRESETSCREWHYDROM10	10	M10X1	17	2	5
PRESETSCREWHYDROM16	14	M16X1	20	2	8

TEST BAR HYDRO

Torque test bar for hydraulic chucks



Metric	BD	OAL	Wrench	LSCN(1)	Torque*
TESTBARHYDRO6	6	53	10	27	15
TESTBARHYDRO8	8	53	10	27	25
TESTBARHYDRO10	10	56	10	32	50
TESTBARHYDRO12	12	62	10	37	110
TESTBARHYDRO14	14	62	10	37	120
TESTBARHYDRO16	16	71	17	37	180
TESTBARHYDRO18	18	71	17	42	230
TESTBARHYDRO20	20	71	17	42	250
TESTBARHYDRO25	25	79	17	48	310
TESTBARHYDRO32	32	87	17	52	450

(1) Minimum holding length, *Torque: Recommended torque (N·m) for clamping.

TUNGMAX

KIT SK-TUNGMAX

Kit for power chuck holder and spring collets (DIN69871)



Metric	SK size	DCONMS	Qty	Range
KITSK40MAXIN20X956	40	20	6	6,8,10,12,14,16
KITSK40MAXIN32X1067	40	32	7	6,8,10,12,16,20,25
KITSK50MAXIN32X1007	50	32	7	6,8,10,12,16,20,25

Each kit has one power chuck, a set of SC-SPR collets, extraction hook, and wrench.

TUNGMAX

SET SC-SPR

Set of SC collets



Metric	Collet size	Qty	Range
SETSC20SPR6	20	6	6,8,10,12,14,16
SETSC32SPR9	32	9	6,8,10,12,14,16,18,20,25

SET SC-SEAL

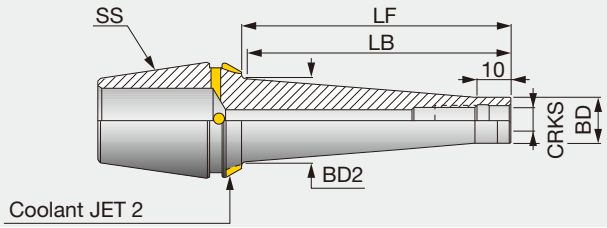
Set of SC collets with coolant hole



Metric	Collet size	Qty	Range
SETSC20SEAL6	20	6	6,8,10,12,14,16
SETSC32SEAL9	32	9	6,8,10,12,14,16,18,20,25

TUNGFLEX
ER-ODP

Threaded connector for ER collet chucks

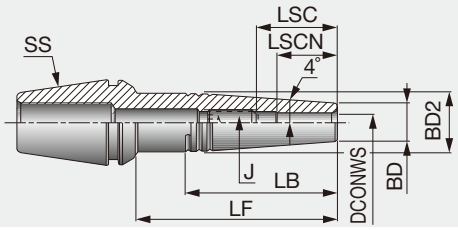


Metric	CRKS	SS	BD	BD2	LF	LB
ER32ODPM8X25	M8	ER32	13.1	15	25	22
ER32ODPM8X50	M8	ER32	13.1	23	50	49
ER32ODPM8X75	M8	ER32	13.1	23	75	74
ER32ODPM10X25	M10	ER32	18	20	25	23
ER32ODPM10X50	M10	ER32	18	24	50	49
ER32ODPM12X25	M12	ER32	21	24	25	24
ER32ODPM12X50	M12	ER32	21	24	50	49

TUNGSHRINK

ER-SRK

TungShrink, ER collet type



Inch	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench*
ER20SRK1/8X1.500	ER20	0.125	0.394	0.53	1.5	0.97	0.39	0.63	M6	3
ER20SRK1/8X2.500	ER20	0.125	0.394	0.53	2.5	0.97	0.39	0.63	M6	3
ER25SRK1/8X1.500	ER25	0.125	0.394	0.55	1.5	1.11	0.39	0.63	M6	3
ER25SRK1/8X2.500	ER25	0.125	0.394	0.63	2.5	1.71	0.39	0.63	M6	3
ER32SRK1/8X1.500	ER32	0.125	0.394	0.55	1.5	1.1	0.39	0.63	M6	3
ER32SRK1/8X2.500	ER32	0.125	0.394	0.68	2.5	2.0	0.39	0.63	M6	3
ER32SRK1/8X3.500	ER32	0.125	0.394	0.82	3.5	3.0	0.39	0.63	M6	3
ER20SRK3/16X2.500	ER20	0.187	0.394	0.53	2.5	0.97	0.59	0.83	M6	3
ER20SRK3/16X1.500	ER20	0.187	0.394	0.53	1.5	0.97	0.59	0.83	M6	3
ER25SRK3/16X1.500	ER25	0.187	0.394	0.55	1.5	1.11	0.59	0.83	M6	3
ER25SRK3/16X2.500	ER25	0.187	0.394	0.63	2.5	1.71	0.59	0.83	M6	3
ER32SRK3/16X1.500	ER32	0.187	0.394	0.55	1.5	1.11	0.59	0.83	M6	3
ER32SRK3/16X2.500	ER32	0.187	0.394	0.66	2.5	1.9	0.59	0.83	M6	3
ER32SRK3/16X3.500	ER32	0.187	0.394	0.80	3.5	2.9	0.59	0.83	M6	3
ER20SRK1/4X1.500	ER20	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	4
ER20SRK1/4X2.500	ER20	0.25	0.433	0.62	2.5	1.31	0.71	0.95	M8	4
ER25SRK1/4X1.500	ER25	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	4
ER25SRK1/4X2.500	ER25	0.25	0.433	0.70	2.5	1.9	0.71	0.95	M8	4
ER32SRK1/4X1.500	ER32	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	4
ER32SRK1/4X2.500	ER32	0.25	0.433	0.7	2.5	1.91	0.71	0.97	M8	4
ER32SRK1/4X3.500	ER32	0.25	0.433	0.84	3.5	2.9	0.71	1.02	M8	4
ER32SRK5/16X1.500	ER32	0.313	0.551	0.76	1.5	1.44	0.98	1.22	M10	5
ER32SRK5/16X2.500	ER32	0.313	0.551	0.82	2.5	1.91	0.98	1.22	M10	5
ER32SRK5/16X3.500	ER32	0.313	0.551	0.93	3.5	2.71	0.98	1.22	M10	5
ER25SRK5/16X1.500	ER25	0.313	0.551	0.71	1.5	1.08	0.98	1.22	M10	5
ER25SRK5/16X2.500	ER25	0.313	0.551	0.79	2.5	1.71	0.98	1.22	M10	5
ER32SRK3/8X1.500	ER32	0.375	0.629	0.84	1.5	1.46	1.18	1.38	M12	6
ER32SRK3/8X2.500	ER32	0.375	0.629	0.90	2.5	1.9	1.18	1.42	M12	6
ER32SRK3/8X3.500	ER32	0.375	0.629	0.93	3.5	2.12	1.18	1.42	M12	6
ER32SRK7/16X1.500	ER32	0.437	0.787	0.94	1.5	1.11	1.22	1.42	M14	6
ER32SRK7/16X2.500	ER32	0.437	0.787	0.94	2.5	1.11	1.22	1.46	M14	6
ER32SRK7/16X3.500	ER32	0.437	0.787	0.94	3.5	1.11	1.22	1.46	M14	6
ER32SRK1/2X1.500	ER32	0.500	0.787	0.94	1.5	1.1	1.26	1.46	M14	6
ER32SRK1/2X2.500	ER32	0.500	0.787	0.94	2.5	1.1	1.26	1.5	M14	6
ER32SRK1/2X3.500	ER32	0.500	0.787	0.94	3.5	1.41	1.26	1.5	M14	6

* Wrench (metric size) for the rear stopper screw.

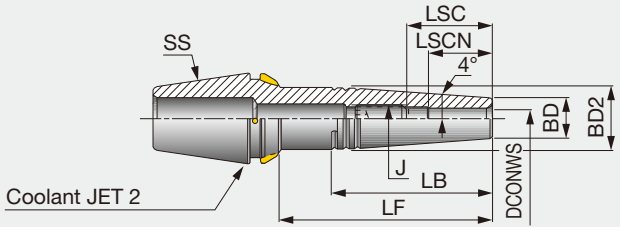
Metric	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER11SRK3X10 (1)	ER11	3	7.6	8.5	10	-	9.5	-	-	-
ER11SRK3X25 (1)	ER11	3	7.6	8.5	25	-	11.5	-	-	-
ER11SRK4X10 (1)	ER11	4	7.6	8.5	10	-	9.5	-	-	-
ER11SRK4X25 (1)	ER11	4	7.6	8.5	25	-	11.5	-	-	-
ER20SRK3X35	ER20	3	10	13.5	35	24	10	16	M6	3
ER20SRK3X60	ER20	3	10	13.5	60	24	10	16	M6	3
ER20SRK4X35	ER20	4	10	13.5	35	24	12	18	M6	3
ER20SRK4X60	ER20	4	10	13.5	60	24	12	18	M6	3
ER20SRK5X35	ER20	5	10	13.5	35	24	15	21	M6	3
ER20SRK5X60	ER20	5	10	13.5	60	24	15	21	M6	3
ER20SRK6X35	ER20	6	11	14.7	35	25	18	24	M8	4
ER20SRK6X60	ER20	6	11	15.2	60	29	18	24	M8	4
ER25SRK3X35	ER25	3	10	13.5	35	24	10	16	M6	3
ER25SRK3X60	ER25	3	10	16.3	60	44	10	16	M6	3
ER25SRK4X35	ER25	4	10	13.5	35	24	12	18	M6	3
ER25SRK4X60	ER25	4	10	16.3	60	44	12	18	M6	3
ER25SRK5X35	ER25	5	10	13.5	35	24	15	21	M6	3
ER25SRK5X60	ER25	5	10	16.3	60	44	15	21	M6	3
ER25SRK6X35	ER25	6	11	14.7	35	26	18	24	M8	4
ER25SRK6X60	ER25	6	11	17.3	60	44	18	24	M8	4
ER25SRK8X35	ER25	8	14	17.8	35	26	25	30	M10	5
ER25SRK8X60	ER25	8	14	19.7	60	39	25	31	M10	5
ER32SRK3X35	ER32	3	10	13.2	35	22	10	16	M6	3
ER32SRK3X60	ER32	3	10	16.3	60	44	10	16	M6	3
ER32SRK3X85	ER32	3	10	19.8	85	70	10	16	M6	3
ER32SRK4X35	ER32	4	10	13.4	35	23	12	18	M6	3
ER32SRK4X60	ER32	4	10	16.3	60	44	12	18	M6	3
ER32SRK4X85	ER32	4	10	19.8	85	70	12	18	M6	3
ER32SRK5X35	ER32	5	10	13.5	35	24	15	21	M6	3
ER32SRK5X60	ER32	5	10	16.3	60	44	15	21	M6	3
ER32SRK5X85	ER32	5	10	19.8	85	70	15	21	M6	3
ER32SRK6X35	ER32	6	11	14.7	35	25	18	24	M8	4
ER32SRK6X60	ER32	6	11	17.3	60	45	18	24	M8	4
ER32SRK6X85	ER32	6	11	20.8	85	69	18	26	M8	4
ER32SRK8X35	ER32	8	14	18.8	35	33	25	31	M10	5
ER32SRK8X60	ER32	8	14	20.4	60	45	25	31	M10	5
ER32SRK8X85	ER32	8	14	23.2	85	65	25	31	M10	5
ER32SRK10X35	ER32	10	16	20.8	35	34	30	35	M12	6
ER32SRK10X60	ER32	10	16	22.4	60	44	30	36	M12	6
ER32SRK10X85	ER32	10	16	23	85	49	30	36	M12	6
ER32SRK12X35	ER32	12	20	24	35	28	32	-	-	-
ER32SRK12X60	ER32	12	20	24	60	28	32	38	M14	6
ER32SRK12X85	ER32	12	20	24	85	28	32	38	M14	6

(1) Use SpinJet spindle only.

TUNGSHRINK

ER-SRK JET2

TungShrink, ER collet type, for external coolant supply

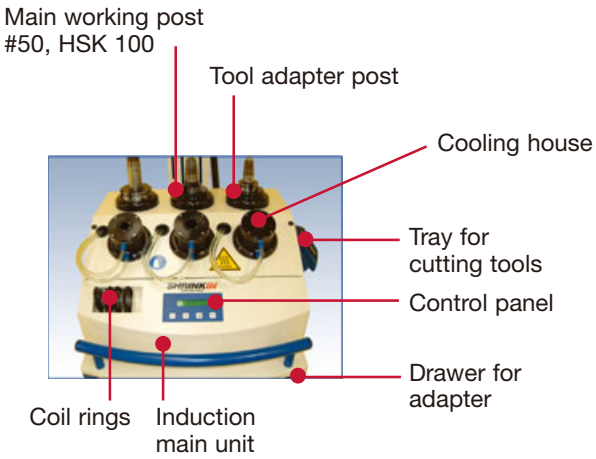


Metric	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER20SRK3X35JET2	ER20	3	10	13.5	35	24.5	10	16	M6	3
ER20SRK5X35JET2	ER20	5	10	13.5	35	24.5	15	21	M6	3
ER20SRK6X35JET2	ER20	6	11	14.7	35	25.5	18	24	M8	4
ER25SRK3X35JET2	ER25	3	10	13.5	35	24.5	10	16	M6	3
ER25SRK3X60JET2	ER25	3	10	16.3	60	44.5	10	16	M6	3
ER25SRK4X35JET2	ER25	4	10	13.5	35	24.5	12	18	M6	3
ER25SRK4X60JET2	ER25	4	10	16.3	60	44.5	12	18	M6	3
ER25SRK5X35JET2	ER25	5	10	13.5	35	24.5	15	21	M6	3
ER25SRK5X60JET2	ER25	5	10	16.3	60	44.5	15	21	M6	3
ER25SRK6X35JET2	ER25	6	11	14.7	35	26	18	24	M8	4
ER25SRK6X60JET2	ER25	6	11	17.3	60	44.5	18	24	M8	4
ER25SRK8X35JET2	ER25	8	14	17.8	35	26.5	25	30	M10	5
ER25SRK8X60JET2	ER25	8	14	19.7	60	39.5	25	31	M10	5
ER32SRK3X35JET2	ER32	3	10	13.2	35	22.5	10	16	M6	3
ER32SRK3X60JET2	ER32	3	10	16.3	60	44.5	10	16	M6	3
ER32SRK3X85JET2	ER32	3	10	19.8	85	70	10	16	M6	3
ER32SRK4X35JET2	ER32	4	10	13.4	35	23.5	12	18	M6	3
ER32SRK4X60JET2	ER32	4	10	16.3	60	44.5	12	18	M6	3
ER32SRK4X85JET2	ER32	4	10	19.8	85	70	12	18	M6	3
ER32SRK5X35JET2	ER32	5	10	13.5	35	24.5	15	21	M6	3
ER32SRK5X60JET2	ER32	5	10	16.3	60	44.5	15	21	M6	3
ER32SRK5X85JET2	ER32	5	10	19.8	85	70	15	21	M6	3
ER32SRK6X35JET2	ER32	6	11	14.7	35	25.5	18	24	M8	4
ER32SRK6X60JET2	ER32	6	11	17.3	60	45	18	24	M8	4
ER32SRK6X85JET2	ER32	6	11	20.8	85	69.5	18	26	M8	4
ER32SRK8X35JET2	ER32	8	14	18.8	35	33	25	31	M10	5
ER32SRK8X60JET2	ER32	8	14	20.4	60	45	25	31	M10	5
ER32SRK8X85JET2	ER32	8	14	23.2	85	65	25	31	M10	5
ER32SRK10X35JET2	ER32	10	16	20.8	35	34	30	35	M12	6
ER32SRK10X60JET2	ER32	10	16	22.4	60	44.5	30	36	M12	6
ER32SRK10X85JET2	ER32	10	16	23	85	49.5	30	36	M12	6
ER32SRK12X35JET2	ER32	12	20	24	35	28	32	-	-	-
ER32SRK12X60JET2	ER32	12	20	24	60	28	32	38	M14	6
ER32SRK12X85JET2	ER32	12	20	24	85	28	32	38	M14	6

TUNGSHRINK
IND SHRINKIN UNIT

SHRINKIN Induction heating unit for shrink tool chucking





Inch	Machine
IND SHRINK IN UNIT USA	3-380-500V 50/60HZ

Metric	Machine
IND SHRINK IN UNIT EUR	3-380-500V 50/60HZ

IND SHRINK START UNIT

SHRINKIN Induction heating unit for shrink tool chucking



Inch	Machine
IND SHRINK START UNIT USA	3-380-500V 50/60HZ

Metric	Machine
IND SHRINK START UNIT EUR	3-380-500V 50/60HZ

SET ER-SRK

Set of ER collets with thermal shrink chucks



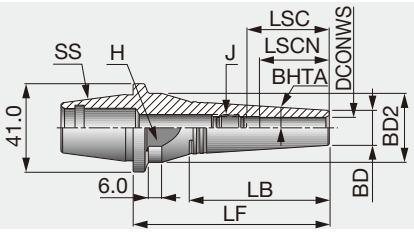
Inch	Collet size	Qty	Range
SETER32SRKS6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5
SETER32SRKM6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5
SETER32SRKL6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5

Metric	Collet size	Qty	Range
SETER32SRKL6EUR	32	6	4,5,6,8,10,12
SETER32SRKM6EUR	32	6	4,5,6,8,10,12
SETER32SRKS6EUR	32	6	4,5,6,8,10,12

TUNGCLICK

ER-SRF

TungShrink, quick change type

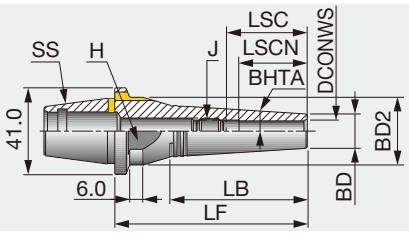


Metric	SS	DCONWS	BD	BD2	LF	LB	J	Wrench	BHTA	H	LSCN	LSC
ER32SRF3X50	32 SRF	3	10	32	50	31	M6	3	4°	27	10	16
ER32SRF3X85	32 SRF	3	10	32	85	60.5	M6	3	4°	27	10	16
ER32SRF4X50	32 SRF	4	10	32	50	31	M6	3	4°	27	12	18
ER32SRF4X85	32 SRF	4	10	32	85	60.5	M6	3	4°	27	12	18
ER32SRF5X50	32 SRF	5	10	32	50	31	M6	3	4°	27	15	21
ER32SRF5X85	32 SRF	5	10	32	85	60.5	M6	3	4°	27	15	21
ER32SRF6X50	32 SRF	6	11	32	50	31	M8	4	4°	27	18	24
ER32SRF6X85	32 SRF	6	11	32	85	60.5	M8	4	4°	27	18	24
ER32SRF8X50	32 SRF	8	14	32	50	33	M10	5	4°	27	25	31
ER32SRF8X85	32 SRF	8	14	32	85	60.5	M10	5	4°	27	25	31
ER32SRF10X50	32 SRF	10	16	32	50	35	M12	6	4°	27	30	35
ER32SRF10X85	32 SRF	10	16	32	85	60.5	M12	6	4°	27	30	36
ER32SRF12X50	32 SRF	12	20	32	50	35	M14	6	4°	27	32	37
ER32SRF12X85	32 SRF	12	20	32	85	50	M14	6	4°	27	32	38

Tightening torque: 235 N·m.

ER-SRF JET2

TungClick, quick change type, thermal shrinking holder

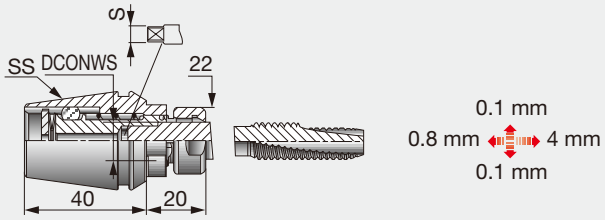


Metric	SS	DCONWS	BD	BD2	LF	LB	J	Wrench	BHTA	H	LSCN	LSC
ER32SRF3X50JET2	32 SRF	3	10	32	50	31	M6	3	4°	27	10	16
ER32SRF4X50JET2	32 SRF	4	10	32	50	31	M6	3	4°	27	12	18
ER32SRF6X50JET2	32 SRF	6	11	32	50	31	M8	4	4°	27	18	24
ER32SRF6X85JET2	32 SRF	6	11	32	85	60	M8	4	4°	27	18	24
ER32SRF8X50JET2	32 SRF	8	14	32	50	33	M10	5	4°	27	25	31
ER32SRF12X50JET2	32 SRF	12	20	32	50	35	M14	6	4°	27	32	37
ER32SRF12X85JET2	32 SRF	12	20	32	85	50	M14	6	4°	27	32	38

Tightening torque: 235 N·m.

GTIN ER-ISO

Tapping attachment for ER collet chuck holders (ISO)

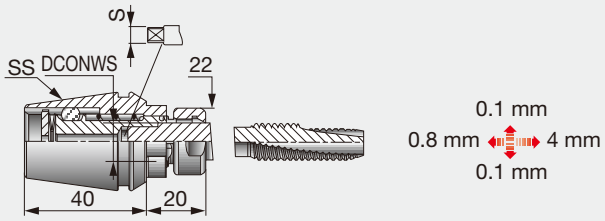


Metric	SS	DCONWS	S	Tap min	Tap max	H
GTINER32ISO2.24X1.80	ER32	2.24	1.8	M3	M3	20
GTINER32ISO2.50X2.00	ER32	2.5	2	M3.5	M3.5	20
GTINER32ISO2.80X2.24	ER32	2.8	2.24	M2.2	M2.5	20
GTINER32ISO3.15X2.50	ER32	3.15	2.5	M3	M4	20
GTINER32ISO3.55X2.80	ER32	3.55	2.8	M3.5	M4.5	20
GTINER32ISO4.00X3.15	ER32	4	3.15	M4	M5	20
GTINER32ISO4.50X3.55	ER32	4.5	3.55	M6	M6	20
GTINER32ISO5.00X4.00	ER32	5	4	M5	M5	20
GTINER32ISO5.60X4.50	ER32	5.6	4.5	UNC#12-24	UNC#12-24	20
GTINER32ISO6.30X5.00	ER32	6.3	5	M6	M8	20
GTINER32ISO7.10X5.60	ER32	7.1	5.6	UNC#-3/8-16	UNC#-3/8-16	20
GTINER32ISO8.00X6.30	ER32	8	6.3	M8	M10	20
GTINER32ISO9.00X7.10	ER32	9	7.1	M12	M12	20
GTINER32ISO10.00X8.00	ER32	10	8	M10	M10	20
GTINER32ISO11.20X9.00	ER32	11.2	9	M14	M14	20
GTINER32ISO12.50X10.00	ER32	12.5	10	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism.

GTIN ER-DIN

Tapping attachment for ER collet chuck holders (DIN)



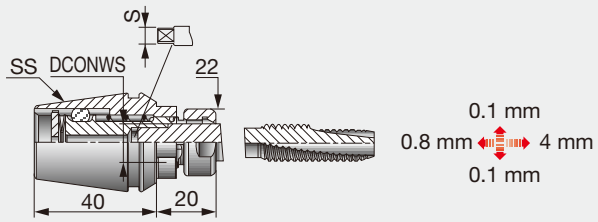
Metric	SS	DCONWS	S	Tap min	Tap max	H
GTINER32DIN2.50X2.10	ER32	2.5	2.1	M1	M1.8	20
GTINER32DIN2.80X2.10	ER32	2.8	2.1	M2	M4	20
GTINER32DIN3.50X2.70	ER32	3.5	2.7	M3	M5	20
GTINER32DIN4.00X3.00	ER32	4	3	M3	M5	20
GTINER32DIN4.50X3.40	ER32	4.5	3.4	M4	M6	20
GTINER32DIN6.00X4.90	ER32	6	4.9	M5	M8	20
GTINER32DIN7.00X5.50	ER32	7	5.5	M10	M10	20
GTINER32DIN8.00X6.20	ER32	8	6.2	M8	M8	20
GTINER32DIN9.00X7.00	ER32	9	7	M12	M12	20
GTINER32DIN10.00X8.00	ER32	10	8	M10	M10	20
GTINER32DIN11.00X9.00	ER32	11	9	M14	M14	20
GTINER32DIN12.00X9.00	ER32	12	9	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism.

TUNGGTI

GTIN ER-JIS

Tapping attachment for ER collet chuck holders (JIS)



Metric	SS	DCONWS	S	Tap min	Tap max	H
GTINER32JIS3.00X2.50	ER32	3	2.5	M1	M2.6	20
GTINER32JIS4.00X3.20	ER32	4	3.2	M3	M3.5	20
GTINER32JIS5.00X4.00	ER32	5	4	M4	M4	20
GTINER32JIS6.00X4.50	ER32	6	4.5	M6	M6	20
GTINER32JIS6.20X5.00	ER32	6.2	5	M8	M8	20
GTINER32JIS7.00X5.50	ER32	7	5.5	M10	M10	20
GTINER32JIS8.50X6.50	ER32	8.5	6.5	M12	M12	20
GTINER32JIS10.50X8.00	ER32	10.5	8	M14	M14	20
GTINER32JIS12.50X10.00	ER32	12.5	10	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism

PS BT-JIS/MAZAK

Pull stud with JIS/ANSI retention knob (BT), for MAZAK machines

Fig. 1

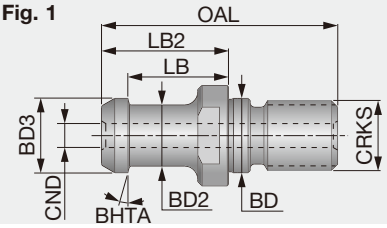


Fig. 2

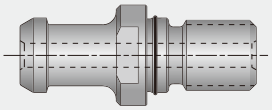


Fig. 3

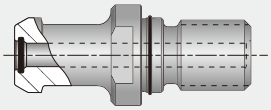
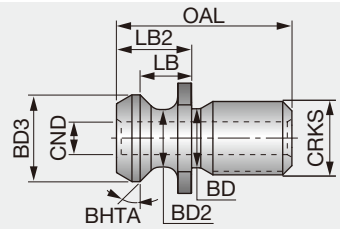


Fig. 1: Coolant holes only in items with B suffix. Fig. 2: With O-ring for outer diameter.
Fig. 3: With O-rings for outer and inner diameters

Metric	BT size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig.
PSBT3015M12JISB	30	M12	12	8	12.5	4	18.4	43	23.4	15°	1
PSBT4015M16JISB	40	M16	19	14	17	5.5	23	54	29	15°	1
PSBT4015M16JISOB	40	M16	19	14	17	5.5	23	54	29	15°	2
PSBT4015M16JISOBO	40	M16	19	14	17	5.5	23	54	29	15°	3
PSBT5015M24JISB	50	M24	28	21	25	8	25	74	34	15°	1
PSBT5015M24JISOB	50	M24	28	21	25	8	25	74	34	15°	2
PSBT5015M24JISOBO	50	M24	28	21	25	8	25	74	34	15°	3
PSBT4045M16MAZAKB	40	M16	18.79	12.4	17	7	14.026	44.1	19.1	45°	1
PSBT5045M24MAZAKB	50	M24	28.95	20.8	25	8	17.58	65.2	25.2	45°	1

PS CAT-ANSI

Pull Stud CAT ANSI Retention Knobs



Inch	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA
PSCAT40455/8ANSI	5/8-11	0.74	0.49	0.49	-	0.439	1.5	0.64	45°
PSCAT40455/8ANSIB	5/8-11	0.74	0.49	0.49	0.28	0.439	1.5	0.64	45°
PSCAT50451ANSIB	1-8	1.14	0.82	0.82	0.315	0.703	2.3	1	45°
PSCAT50451ANSI	1-8	1.14	0.82	0.82	-	0.703	2.3	1	45°

Coolant holes only in items with a "B" suffix.

PS CAT-MAS

Caterpillar Pull Studs with MAS Retention Knobs

Fig. 1

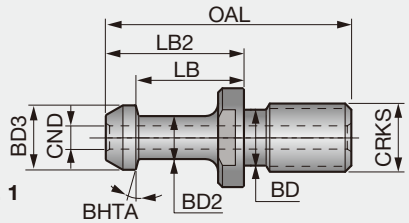
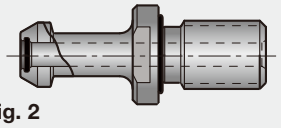


Fig. 2



Inch	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig
PSCAT4045M16MAS1	M16	0.606	0.394	0.512	0.217	0.995	2.25	1.274	45°	1
PSCAT4045M16MAS1B	M16	0.606	0.394	0.512	0.217	0.995	2.25	1.274	45°	1
PSCAT40455/8MAS1	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	45°	1
PSCAT40455/8MAS1B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	45°	1
PSCAT40605/8MAS2	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	60°	1
PSCAT40605/8MAS2B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	60°	1
PSCAT40905/8MAS3	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	90°	1
PSCAT40905/8MAS3B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	90°	1
PSCAT50451"MAS1	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	45°	1
PSCAT50451"MAS1B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	45°	1
PSCAT50451"MAS1OBO	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	45°	2
PSCAT50601"MAS2	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	60°	1
PSCAT50601"MAS2B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	60°	1
PSCAT50901"MAS3	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	90°	1
PSCAT50901"MAS3B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	90°	1

Fig 1: Coolant holes only in items with a "B" suffix.
Fig 2: With external and internal O-rings.

PS SK-DIN

Pull stud with JIS63398 retention knob (DIN69872)

Fig. 1

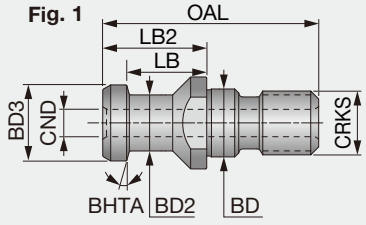


Fig. 2

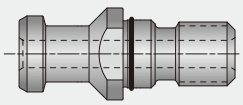


Fig. 3

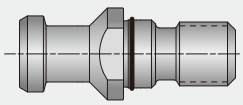
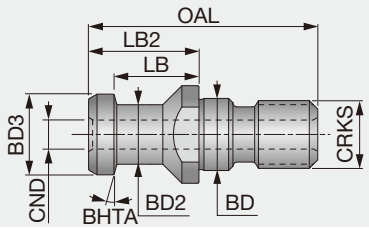


Fig. 1: Coolant holes only in items with B suffix. Fig. 2: With O-ring for outer diameter.
Fig. 3: With O-rings for outer diameters

Metric	SK size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig.
PSSK3015M12DIN	30	M12	13	9	13	-	19	44	24	15°	1
PSSK4015M16DIN	40	M16	19	14	17	-	20	54	26	15°	1
PSSK4015M16DINO	40	M16	19	14	17	-	20	54	26	15°	3
PSSK4015M16DINB	40	M16	19	14	17	7	20	54	26	15°	1
PSSK4015M16DINOB	40	M16	19	14	17	7	20	54	26	15°	2
PSSK5015M24DIN	50	M24	28	21	25	-	25	74	34	15°	1
PSSK5015M24DINO	50	M24	28	21	25	-	25	74	34	15°	3
PSSK5015M24DINB	50	M24	28	21	25	11.5	25	74	34	15°	1

PS CAT-ISO

Pull stud with CAT-MAS G-mm Retention knob, with coolant hole

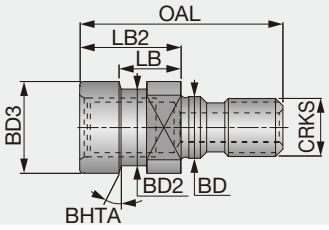


Metric	CAT size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA
PSCAT3045M12ISOB	30	M12	13.35	9.3	13	4.75	8.1	34	11.8	45°
PSCAT4045M16ISOB	40	M16	18.95	12.9	17	7.35	11.2	44.5	16.4	45°
PSCAT5045M24ISOB	50	M24	29.1	19.6	25	8	17.9	65.5	25.55	45°

Coolant holes only in items with B suffix.

PS OTT-BT

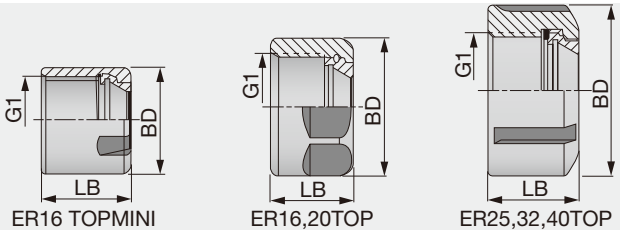
Pull stud with OTT system retention knob (BT)



Metric	BT size	CRKS	BD3	BD2	BD	LB	OAL	LB2	BHTA
PSOTTBT40M16	40	M16	25	21.1	17	16.6	56	28	15°
PSOTTBT50M24	50	M24	39.3	32	25	13.4	65	25	15°

NUT ER-TOP

Nut for ER collet chucks (DIN6499)

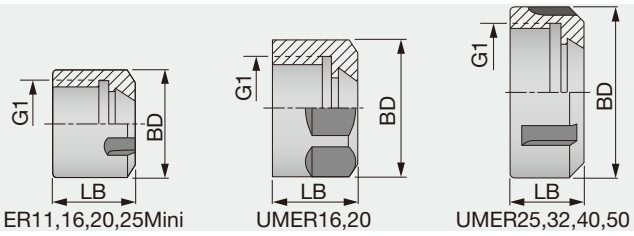


Metric	BD	LB	G1	Torque*
NUTER16TOP	28	17	M22X1.5	68.7
NUTER20TOP	34	19	M25X1.5	117.7
NUTER25TOP	42	20	M32X1.5	196.1
NUTER32TOP	50	22	M40X1.5	215.7
NUTER40TOP	63	25	M50X1.5	245.1

*Torque: Recommended torque (N·m) for clamping

NUT ER-UM/MINI

UM/Mini nut for ER collet chucks (DIN6499)

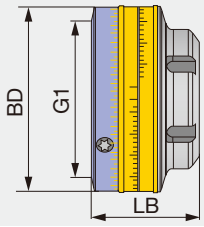


Metric	BD	LB	G1	Torque*
NUTER11GHS (1)	16	11.5	M13X0.75	-
NUTER11MINI	16	10.8	M13X0.75	29.4
NUTER11UM	19	11.3	M14X0.75	49
NUTER16MINI	22	18	M19X1.0	39.2
NUTER16UM	28	17	M22X1.5	68.7
NUTER20MINI	28	19	M24X1.0	78.5
NUTER20UM	34	19	M25X1.5	117.7
NUTER25MINI	35	20	M30X10	98
NUTER25UM	42	20	M32X1.5	196.1
NUTER32UM	50	22	M40X1.5	215.7
NUTER40UM	63	25	M50X1.5	245.1
NUTER50UM	78	35	M64X2.0	343.2

*Torque: Recommended torque (N·m) for clamping
(1) To be used only for SpinJet spindles

TUNGBALANCE
NUT ER-BALANCE

Balanceable nut for ER collet chucks (DIN6499)

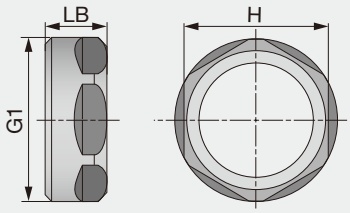


Metric	BD	LB	G1	Torque*
NUTER16TOPBIN	36	44	M22X1.5	68.7
NUTER25TOPBIN	37.5	58	M32X1.5	196.1

*Torque: Recommended torque (N·m) for clamping

TUNGSHORT
NUT ER-SHORT

Nut for ER collet chucks (TungShort)

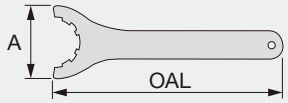


Metric	H	LB	G1	Torque*
NUTER20SHORT	22	10.7	M25X1.5	117.7
NUTER32SHORT	36	15	M40X1.5	215.7
NUTER40SHORT	46	16	M50X1.5	245.1

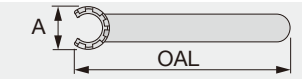
*Torque: Recommended torque (N·m) for clamping

WRENCH ER

Wrench for ER nut (DIN6499)



Wrench ER 25,32,40,50



Wrench ER 11,16,20,25 Mini



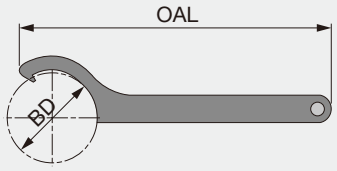
Wrench ER 11,16,20,TungShort,TungClick

Metric	A	H	OAL
WRENCHER11SMS (1)	16	-	95
WRENCHER11MINI	16.8	-	95
WRENCHER11	32	17	95
WRENCHER16MINI	22.5	-	117
WRENCHER16	42.5	25	143
WRENCHER20MINI	28	-	128
WRENCHER20	53.5	30	172
WRENCHER25MINI	29	-	120
WRENCHER25	70	-	207
WRENCHER32	78	-	255
WRENCHER40	95	-	285
WRENCHER50	110	-	350
WRENCHER20SHORTRING22	48	22	260
WRENCHER32SHORT	75	36	303
WRENCHER40SHORT	94	46	378
WRENCHER32CLICKIN27	57	27	239
WRENCHER32CLICKIN32	67	32	273

(1) Use SpinJet spindle only.

TUNGMAX WRENCH

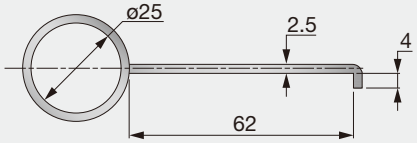
Wrench for TungMax collets



Metric	BD	OAL
WRENCHMAXIN20HOOK	52	205
WRENCHMAXIN32HOOK	68	240

SC

SC collet extracting hook



Metric
EXTRACTOR SC COLLETS

PRESET ER-JET

Preset screw for ER collet chucks

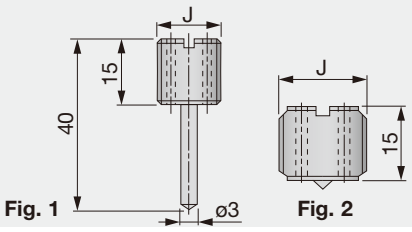


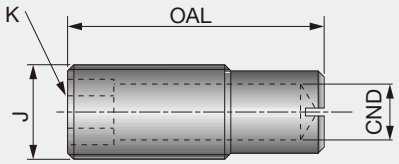
Fig. 1 Fig. 2

Metric	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGMAX

Preset Screw

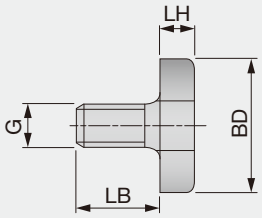
Preset screw for SC-SPR



Metric	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

SCREW-SEM

Lock screw for shell mill holders



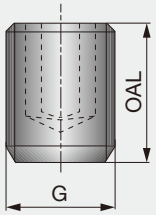
Metric	G	BD	LH	LB
M8CLAMPSCREWSEM16	M8	20	6	16
M10CLAMPSCREWSEM22	M10	28	7	18
M12CLAMPSCREWSEM27	M12	35	8	22
M16CLAMPSCREWSEM32	M16	42	9	26
M20CLAMPSCREWSEM40	M20	52	10	30
M24CLAMPSCREWSEM50	M24	63	12	36
SCREW 3/8-24 SEM 3/4"	3/8"x24 UNF-2A	22.5	10	18
SCREW 1/2-20X7/8 SEM 1"	1/2x20 UNF-2A	55.4	12	22.2

STANDARD CENTER BOLT

Inch	G	BD	LH	LB	Torque
SCREW1/4-28SEM1/2	1/4-28 UNF-2A	0.65	0.315	0.709	6
SCREW3/8-24SEM3/4	3/8-24 UNF-2A	0.886	0.394	0.709	25
SCREW1/2-20SEM1	1/2-20 UNF-2A	1.181	0.472	0.874	50
SCREW5/8-18SEM1-1/4	5/8-18 UNF-2A	1.496	0.512	1.000	75
SCREW3/4-16SEM1-1/2	3/4-16 UNF-2A	1.87	0.512	1.161	100
SCREW1-14SEM2	1-14 UNS-2A	2.48	0.512	1.25	110

SCREW-EM

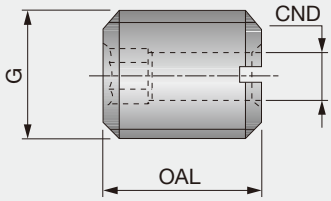
Lock screw for endmill holders



Metric	G	OAL	Applicable shank diameter
SRM6X10DIN1835B	M6	10	6
SRM8X10DIN1835-B	M8	10	8
SRM10X12DIN1835-B	M10	12	10
SRM12X16DIN1835-B	M12	16	12,14
SRM14X16DIN1835-B	M14	16	16,18
SRM16X16DIN1835-B	M16	16	20
SRM18X2X20DIN1835-B	M18X2	20	25
SRM20X2X20DIN1835-B	M20X2	20	32,40
SRM24X2X25DIN1835-B	M24X2	25	50
SRM16X10.3EMSHORT	M16	10.3	20
SRM18X2X10EMSHORT	M18X2	10	2

PRESET SCREW

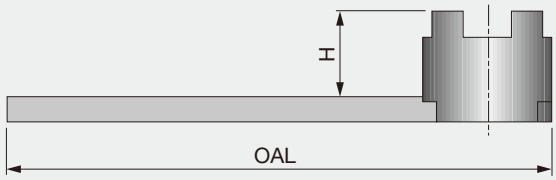
Preset screw with coolant hole for EME/SRKIN holders



Metric	G	OAL	CND	Applicable shank	Wrench
PRESETSCREWM6X20B	M6X1	20	2.5	EME/SRKIN	3
PRESETSCREWM8X20B	M8X1.25	20	3.5	EME/SRKIN	4
PRESETSCREWM10X18B	M10X1.5	18	4.5	EME/SRKIN	5
PRESETSCREWM12X18B	M12X1.75	18	5.5	EME/SRKIN	6
PRESETSCREWM16X20B	M16X2	20	7.5	EME/SRKIN	6
PRESETSCREWM16X25B	M16X2	25	7.5	SRKIN	6

WRENCH SEMC

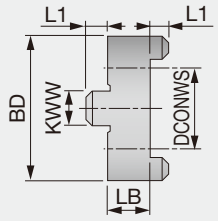
Wrench for face mill and shell mill combination type holders (DIN6368)



Metric	Clamping bore dia.	G	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4,27	M12	32	225
WRENCHM16SEMC32	31.75,32	M16	36	250
WRENCHM20SEMC40	38.1,40	M20	40	280
WRENCHM24SEMC50	50,50.8	M24	50	315

DRIVING RING SEMC

Driving ring for face mill and shell mill combination type holders (DIN6366/1)

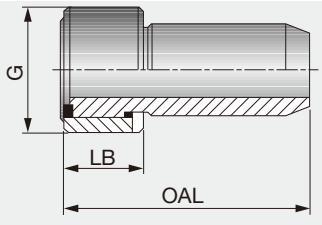


Metric	DCONWS	BD	LB	L1	KWW
16D.RINGSEMC	16	32	10	8	5
22D.RINGSEMC	22	40	12	10	6
27D.RINGSEMC	27	48	12	12	6.3
32D.RINGSEMC	32	58	14	14	7
40D.RINGSEMC	40	70	14	16	8
50D.RINGSEMC	50	90	16	18	9

Should be used with WRENCH SEMC.

COOLING TUBE-HSK

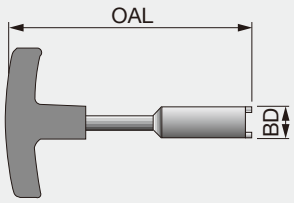
Cooling tube for HSK shank



Metric	HSK size	OAL	LB	G
COOLINGTUBEHSKA40	40	29.1	7.5	M12X1
COOLINGTUBEHSKA50	50	32.7	9.5	M16X1
COOLINGTUBEHSKA63	63	36	11.5	M18X1
COOLINGTUBEHSKA80	80	36.6	13.5	M20X1.5
COOLINGTUBEHSKA100	100	43.6	15.5	M24X1.5

WRENCH

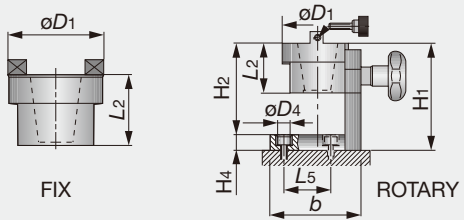
Wrench for HSK cooling tube



Metric	HSK size	BD	OAL
WRENCHCOOLTUBEHSK40	40	11	120
WRENCHCOOLTUBEHSK50	50	15	120
WRENCHCOOLTUBEHSK63	63	17	122
WRENCHCOOLTUBEHSK80	80	18.5	186
WRENCHCOOLTUBEHSK100	100	22	141

TOOL CLAMP

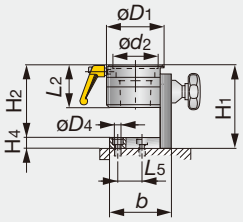
Tool clamp fixture for ISO, DIN69871, and BT MAS-403 BT shanks



Metric	CSI	øD1	L2	H1	H2	H4	b	L5	øD4
TOOLCLAMP30ROTARY	ROTARY	70	56	128	109	19	104	40	12.5
TOOLCLAMP40ROTARY	ROTARY	82	56	128	109	19	104	40	12.5
TOOLCLAMP50ROTARY	ROTARY	103	71	170	151	19	144	85	12.5
TOOLCLAMP30FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP40FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP50FIX	FIX	103	71	-	-	-	-	-	-

MULTI CLAMP (HSK)

Multi-clamp rotary fixture for HSK shank



Metric	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	øD4
MULTICLAMP32E/F	HSK A/C50	32	113.2	70	133	114	19	144	40	12.5
MULTICLAMP40E/F	HSK A/C63	40	113.2	70	133	114	19	144	40	12.5
MULTICLAMP63E/F	HSK E/F32	63	113.2	70	133	114	19	144	40	12.5
MULTICLAMP50A/C	HSK E/F40	50	82	72	142	123	19	104	40	12.5
MULTICLAMP63A/C	HSK E/F50	63	95	72	142	123	19	104	40	12.5
MULTICLAMP100A/C	HSK E/F63	100	130	90	178	159	19	144	85	12.5

EASYLOCK

EASY LOCK

Electrical nut-clamp torque control device

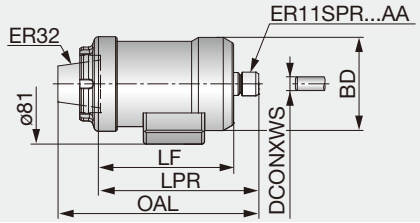


Note: Assemble the collet and cutting tool.
By hand, place the nut onto the collet chuck.

Metric	Machine
EASYLOCKT.CEU	200/240V 50/60 HZ

TJS-ER32

Coolant driven high speed compact spindle for ER32 collet chuck



Metric	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETER32	92	109	136	63	7	1.3

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

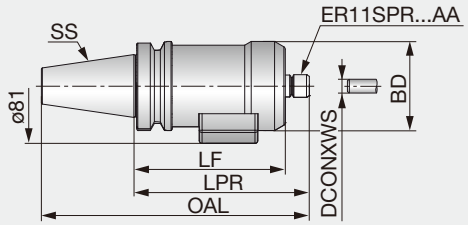
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETER32	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

TJS-BT

Coolant driven high speed compact spindle with BT shank



Metric	SS	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETBT30	BT30	124	141	189	63	7	1.6
TJSGJETBT40	BT40	107	124	189	63	7	1.8

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

(1) Max. tool shank diameter: ø7 mm

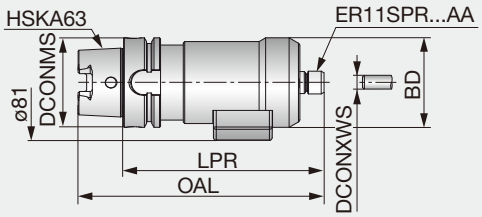
SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETBT...	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET

TJS-HSK A63

Coolant driven high speed compact spindle with HSK A63 shank



Metric	DCONMS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETHSKA63	63	141	173	63	7	1.8

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

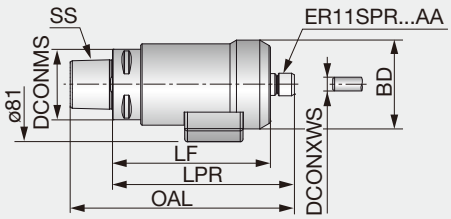
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETHSKA63	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

TJS-C

Coolant driven high speed compact spindle with TungCap PSC shank



Metric	SS	DCONMS	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETC5	C5	50	112	129	159	63	7	1.5
TJSGJETC6	C6	63	102	119	157	63	7	1.6

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

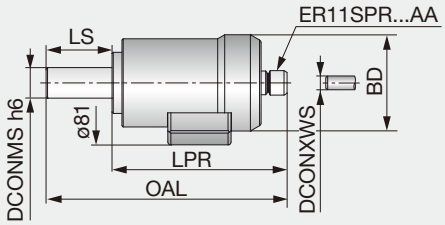
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETC...	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

TJS-ST

Coolant driven high speed compact spindle with straight (cylindrical) shank



Metric	DCONMS	LS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETST20	20	43	115	158	63	7	1.2

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

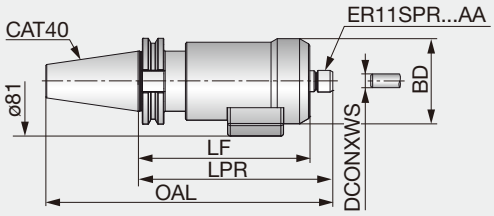
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETST20	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

TJS-CAT

Coolant driven high speed compact spindle with CAT shank



Metric	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETCAT40	127	144	212	63	7	2

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

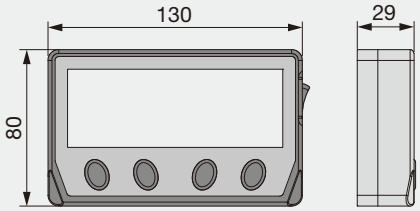
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETCAT40	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
Wireless RPM speed display

RPM speed display (SpinJet)



Metric		Adaptive product
TJSTSDDISPLAYEUR	(for Europe)	TJS spindles
TJSTSDDISPLAYUSA	(for the United States and Japan)	TJS spindles

Including plug adapter

• Plug adaptor for wireless RPM speed display

Type	TJSTSDDISPLAYEUR	TJSTSDDISPLAYUSA
Designation	TJSDISP.POWERSUPP-EUR	TJSDISP.POWERSUPP-USA
Appearance	 Plug adaptor for Europe	 Plug adaptor for the United States and Japan

Plug adaptor is also sold separately.

New and old product comparison table



New models ⟷ **Discontinued models**

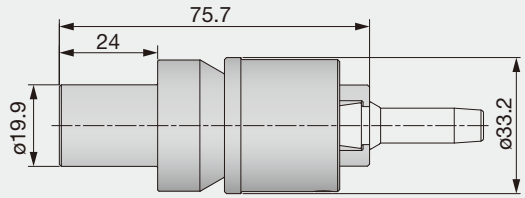


Alternative designation	Discontinued designation	Alternative designation	Discontinued designation
-	TJS20KBT30L	-	TJS40KC6L
TJSGJETBT30	TJS20KBT30R	TJSGJETC6	TJS40KC6R
-	TJS30KBT30L	-	TJS20KER32L
TJSGJETBT30	TJS30KBT30R	TJSGJETER32	TJS20KER32R
-	TJS40KBT30L	-	TJS30KER32L
TJSGJETBT30	TJS40KBT30R	TJSGJETER32	TJS30KER32R
-	TJS20KBT40L	-	TJS40KER32L
TJSGJETBT40	TJS20KBT40R	TJSGJETER32	TJS40KER32R
-	TJS30KBT40L	-	TJS20KHSKA63L
TJSGJETBT40	TJS30KBT40R	TJSGJETHSKA63	TJS20KHSKA63R
-	TJS40KBT40L	-	TJS30KHSKA63L
TJSGJETBT40	TJS40KBT40R	TJSGJETHSKA63	TJS30KHSKA63R
-	TJS20KCAT40L	-	TJS40KHSKA63L
TJSGJETCAT40	TJS20KCAT40R	TJSGJETHSKA63	TJS40KHSKA63R
-	TJS30KCAT40L	-	TJS20KDIN698714
TJSGJETCAT40	TJS30KCAT40R	-	TJS20KDIN6987140R
-	TJS40KCAT40L	-	TJS30KDIN698714
TJSGJETCAT40	TJS40KCAT40R	-	TJS30KDIN6987140R
-	TJS20KC5L	-	TJS40KDIN698714
TJSGJETC5	TJS20KC5R	-	TJS40KDIN6987140R
-	TJS30KC5L	-	TJS20KST20L
TJSGJETC5	TJS30KC5R	TJSGJETST20	TJS20KST20R
-	TJS40KC5L	-	TJS30KST20L
TJSGJETC5	TJS40KC5R	TJSGJETST20	TJS30KST20R
-	TJS20KC6L	-	TJS40KST20L
TJSGJETC6	TJS20KC6R	TJSGJETST20	TJS40KST20R
-	TJS30KC6L		
TJSGJETC6	TJS30KC6R		

- As of December 28, 2018, all orders for discontinued models are not accepted. As of December 31, 2020, all services and supports including repairs and spare part sales will end.

ER-SRK Shrink collet adapter

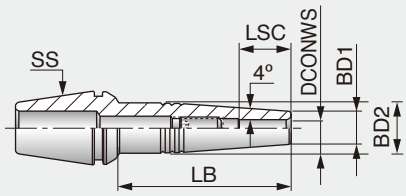
ER11 shrink collet adapter for induction heating device



Metric	Adaptive product
INDER11TOOLADAPTER	TJS spindles

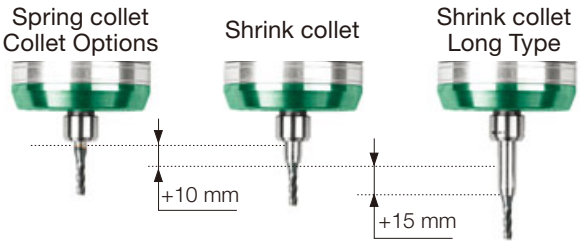
ER-SRK Shrink collet

ER11 shrink collet for induction heating device



Metric	SS	DCONWS	LB	LSC	BD2	BD1
ER11SRK3X10	ER11	3	10	9.5	8.5	7.6
ER11SRK3X25	ER11	3	25	11.5	8.5	7.6
ER11SRK4X10	ER11	4	10	9.5	8.5	7.6
ER11SRK4X25	ER11	4	25	11.5	8.5	7.6

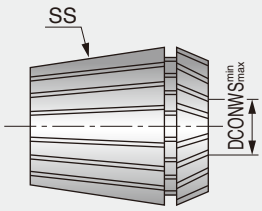
• For carbide tools only

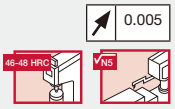


ER-SPR-AA

ER11 AA collet



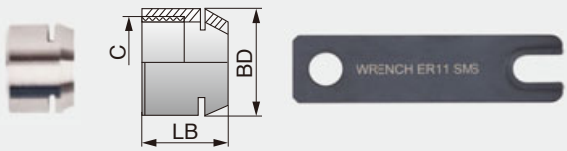




Metric	SS	DCONWS min	DCONWS max
ER11SPR0.5-1AA	ER11	0.5	1
ER11SPR1-2AA	ER11	1	2
ER11SPR2-3AA	ER11	2	3
ER11SPR3-4AA	ER11	3	4
ER11SPR4-5AA	ER11	4	5
ER11SPR5-6AA	ER11	5	6
ER11SPR6-7AA	ER11	6	7

• AA collet run-out: 0.005 mm

Nut and wrench for collets



Metric	BD	LB	C	Wrench for nut
NUTER11GHS	16	11.5	M13X0.75	WRENCHER11SMS

Shaft lock key



Metric
TJSSHAFTLOCKKEYGJET

MEMO

FIXEDTORQUEWRENCH



MERITS OF TORQUE CONTROL

High precision
Provides consistent toque levels, allowing extremely precise cutting edge positions.

longer tool life
Minimum axial runouts for reduced edge chipping risks.

WRENCH FEATURES

Easy setting
Multi-component handle optimally designed for the hand enables ideal torque transmission.

High repeatability and robustness
Close surface treatment on the blades ensures a superior engagement into the screw recess.

Easy setting

Handle
Multi-component handle optimally designed for the hand enables ideal torque transmission.



Mechanism
Driver clicks to alert the operator when the preset torque is attained.
IDs printed on the handle end allow easy identification of the driver specs.
Driver has unlimited loosening torque. Driver mechanism is industrial-lubricant-resistant.

High repeatability & robustness

Robustness / Fitting
Durability thanks to high quality steel, through hardened.

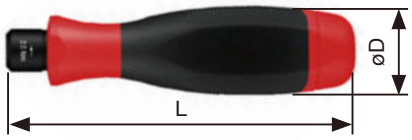
Versatility
Extra slim blade geometry is particularly suitable for applications with confined narrow access.



Handle

Ex) TW - D - 0.6NM

① Torque Wrench ② Driver type ③ Torque



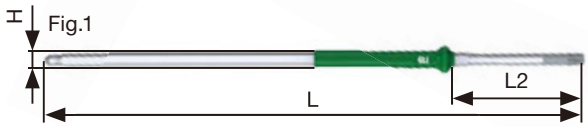
Metric	Stock	Torque (N·m)	Accuracy (%)	øD	L
TW-D-0.6NM	●	0.6	10	34	130
TW-D-0.9NM	●	0.9	10	34	130
TW-D-1.1NM	●	1.1	10	34	130
TW-D-1.4NM	●	1.4	10	34	130
TW-D-2.5NM	●	2.5	10	34	130
TW-D-3.0NM	●	3.0	10	34	130
TW-D-3.5NM	●	3.5	10	34	130

1 piece per package

Blade

Ex) TW - B - T6

① Torque Wrench ② Blade ③ TORX geom.



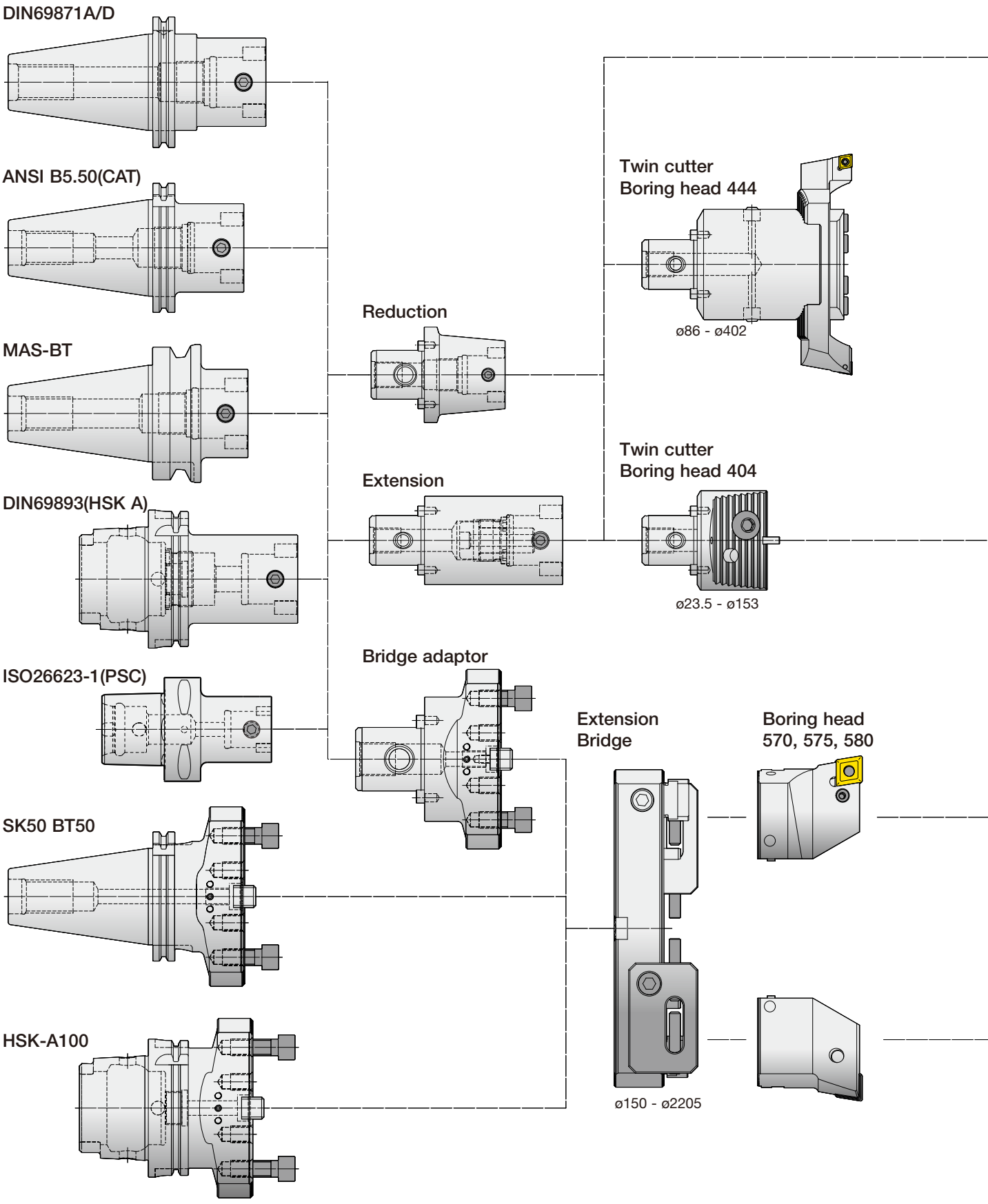


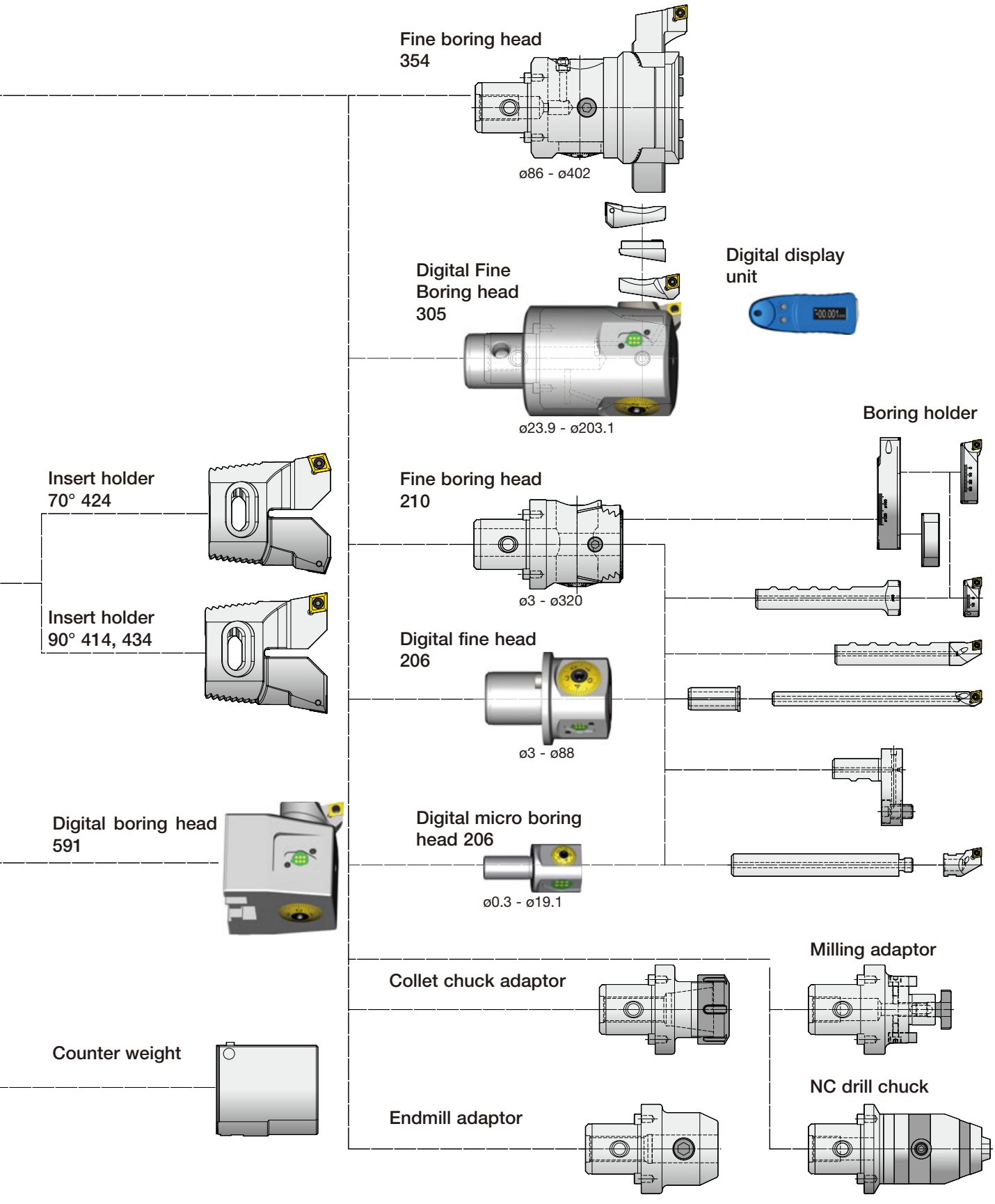
Metric	Stock	TORX geom.	H	L	L2	Fig.
TW-B-T6	●	T6	4	175	42	1
TW-B-T7	●	T7	4	175	42	1
TW-B-T8	●	T8	4	175	42	1
TW-B-T9	●	T9	4	175	42	1
TW-B-T10	●	T10	4	175	42	1
TW-B-T15	●	T15	4	175	42	1
TW-B-6IP	●	6IP	4	175	42	2
TW-B-7IP	●	7IP	4	175	42	2
TW-B-8IP	●	8IP	4	175	42	2
TW-B-10IP	●	10IP	4	175	42	2
TW-B-15IP	●	15IP	4	175	42	2

1 piece per package

SWISSBORE SWISS TOOLS

Wide range of variation quick change system




Fine boring head
354
ø86 - ø402
Digital Fine
Boring head
305
ø23.9 - ø203.1
Digital display
unit
Boring holder
Insert holder
70° 424
Fine boring head
210
ø3 - ø320
Insert holder
90° 414, 434
Digital fine head
206
ø3 - ø88
Digital boring head
591
Digital micro boring
head 206
ø0.3 - ø19.1
Collet chuck adaptor
Milling adaptor
Counter weight
Endmill adaptor
NC drill chuck

SWISSBORE

GH1-DA

Digital display unit

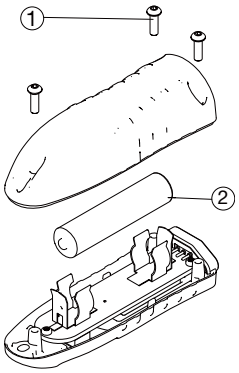


Metric
GH1-DA2.BG0.077

- High precision display unit with accuracy of 0.001 mm in diameter.
- Display unit features direct measurement system with no backlash.
- The illuminated display can be rotated 180 degrees to apply any measuring situation.
- mm/inch switchable
- Standard AAA battery installed.
- Magnet attachment

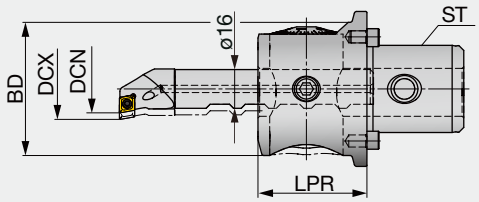
SPARE PARTS

Designation	Clamping screw ①	Screw wrench	Battery ②
GH1-DA2.BG0.077	900.309.022.008	900.308.011.045	AAA



SwissBore206

Digital fine boring head ø9.75 - ø88.1



Radius adjustment range: 2.7 mm

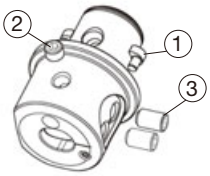
Metric	ST	BD	DCN	DCX	LPR
206.064.025.045	ST6	55	9.75	88.1	45

SPARE PARTS




Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
206.***.025.***	900.102.064.000	900.204.010.008	900.204.010.008

Applicable for 3 MPa pressure coolant

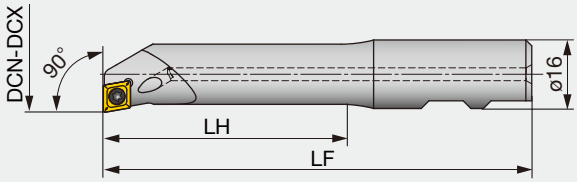




Boring bars 254,256
Option :Display unit GH1-DA2.BG0.077

SwissBore254

Boring bar ø9.75 - ø30.1



Metric	DCN	DCX	LH	LF	Insert
254.010.006.075	9.75	15.1	30	75	CC**0602...
254.015.006.090	14.75	20.1	51	90	CC**0602...
254.020.006.105	19.75	25.1	72	105	CC**0602...
254.025.006.115	24.75	30.1	82	115	CC**0602...

SPARE PARTS



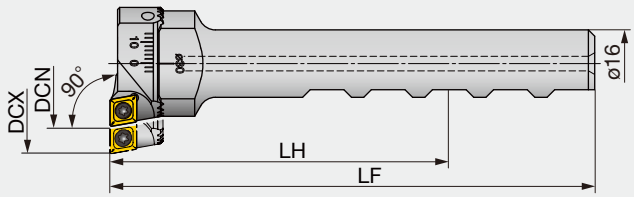

Designation	Clamping screw	Screw wrench
254.0**.006.***	CSTB-2.5S	T-8F

Reference pages: SwissBore254: Inserts → B112 -, CBN → B190 -, PCD → B213

SWISSBORE

SwissBore256

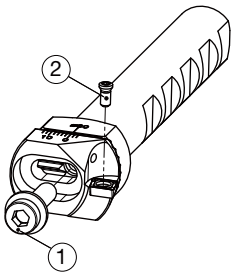
Boring bar ø29.75 - ø88.1



Metric (Shank)	Metric (Insert holder)	DCN	DCX	LH	LF	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**0602...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**0602...

SPARE PARTS

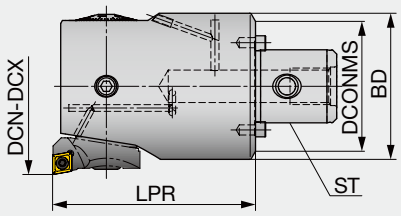
Designation	Clamping screw ①	Clamping screw ②	Wrench
256.0**.0**.***	900.256.005.016	CSTB-2.5S	T-8F



Reference pages: SwissBore254: Inserts → B112 -, CBN → B190 -, PCD → B213

SwissBore305

Digital fine boring head ø23.9 - ø203.1



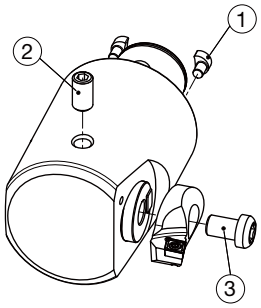
Metric	ST	DCN	DCX	DCONMS	BD	LPR	Insert holder
305.020.024.035	ST1	23.9	31.1	19.6	22.5	35.5	314.011.024.006/007
305.020.024.035	ST1	29.9	37.1	19.6	22.5	35.5	314.011.030.006/007
305.025.031.040	ST2	30.9	40.1	25	29	40	314.013.031.006/007
305.025.031.040	ST2	37.9	47.1	25	29	40	314.013.038.006/007
305.032.040.047	ST3	39.9	51.1	31.4	37	47	314.017.040.006/007
305.032.040.047	ST3	47.9	59.1	31.4	37	47	314.017.048.006/007
305.039.051.057	ST4	50.9	67.1	39	47	57	314.022.051.006/007
305.039.051.057	ST4	64.9	81.1	39	47	57	314.022.065.006/007
305.050.067.080	ST5	66.9	87.1	50	59	80	314.030.067.009/011
305.050.067.080	ST5	84.9	105.1	50	59	80	314.030.085.009/011
305.064.087.100	ST6+	86.9	116.1	64	72	100	314.030.067.009/011
305.064.087.100	ST6+	104.9	134.1	64	72	100	314.030.085.009/011
305.090.116.130	ST7+	115.9	153.1	90	94	130	314.030.067.009/011
305.090.116.130	ST7+	133.9	171.1	90	94	130	314.030.085.009/011
305.090.116.130	ST7+	153.9	191.1	90	94	130	314.726.003.009/011
305.090.116.130	ST7+	165.9*	203.1*	90	94	130	-

*Option : insert holder (314.726.003.009 or 314.726.003.011) & adapter (900.803.001.006)
Applicable for 7 MPa pressure coolant

SPARE PARTS



Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
305.020.024.035	900.102.020.000	900.304.004.003	900.314.004.006
305.025.031.040	900.102.025.000	900.304.005.004	900.314.005.008
305.032.040.047	900.102.032.000	900.304.006.005	900.314.006.010
305.039.051.057	900.102.039.000	900.304.008.006	900.314.008.012
305.050.067.080	900.102.050.000	900.304.010.010	900.314.010.016
305.064.087.100	900.102.064.000	900.304.010.018	900.314.010.016
305.090.116.130	900.102.090.000	900.304.010.030	900.314.010.016



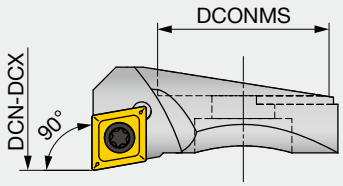


Reference pages: SwissBore305: Insert Holder → K166, K167

SWISSBORE

SwissBore314

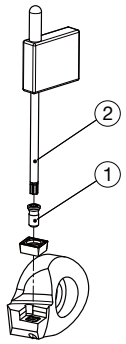
Insert holder 90°corner for CC**insert



Metric	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.006	23.9	31.1	11	CC**0602**	305.020.024.035
314.011.030.006	29.9	37.1	11	CC**0602**	305.020.024.035
314.013.031.006	30.9	40.1	13	CC**0602**	305.025.031.040
314.013.038.006	37.9	47.1	13	CC**0602**	305.025.031.040
314.017.040.006	39.9	51.1	17	CC**0602**	305.032.040.047
314.017.048.006	47.9	59.1	17	CC**0602**	305.032.040.047
314.022.051.006	50.9	67.1	22	CC**0602**	305.039.051.057
314.022.065.006	64.9	81.1	22	CC**0602**	305.039.051.057
314.030.067.009	66.9	87.1	30	CC**09T3**	305.050.067.080
314.030.085.009	84.9	105.1	30	CC**09T3**	305.050.067.080
314.030.067.009	86.9	116.1	30	CC**09T3**	305.064.087.100
314.030.085.009	104.9	134.1	30	CC**09T3**	305.064.087.100
314.030.067.009	115.9	153.1	30	CC**09T3**	305.090.116.130
314.030.085.009	133.9	171.1	30	CC**09T3**	305.090.116.130
314.726.003.009	153.9	191.1	30	CC**09T3**	305.090.116.130

SPARE PARTS

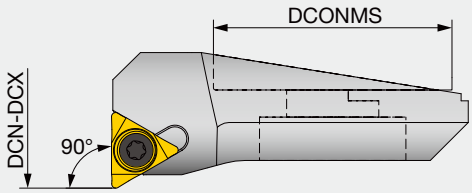
Designation	Clamping screw ①	Wrench ②
314.***.***006	CSTB-2.5S	T-8F
314.***.***009	CSTB-4S	T-15F



Reference pages: SwissBore314: Inserts → B112 -, CBN → B190 -, PCD → B213
Boring Head → K165

SwissBore314

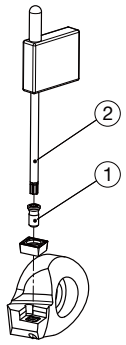
Insert holder 90°corner for TP**insert



Metric	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.007	23.9	31.1	11	TP**0701**	305.020.024.035
314.011.030.007	29.9	37.1	11	TP**0701**	305.020.024.035
314.013.031.007	30.9	40.1	13	TP**0701**	305.025.031.040
314.013.038.007	37.9	47.1	13	TP**0701**	305.025.031.040
314.017.040.007	39.9	51.1	17	TP**0701**	305.032.040.047
314.017.048.007	47.9	59.1	17	TP**0701**	305.032.040.047
314.022.051.007	50.9	67.1	22	TP**0701**	305.039.051.057
314.022.065.007	64.9	81.1	22	TP**0701**	305.039.051.057
314.030.067.011	66.9	87.1	30	TP**1102**	305.050.067.080
314.030.085.011	84.9	105.1	30	TP**1102**	305.050.067.080
314.030.067.011	86.9	116.1	30	TP**1102**	305.064.087.100
314.030.085.011	104.9	134.1	30	TP**1102**	305.064.087.100
314.030.067.011	115.9	153.1	30	TP**1102**	305.090.116.130
314.030.085.011	133.9	171.1	30	TP**1102**	305.090.116.130
314.726.003.011	153.9	191.1	30	TP**1102**	305.090.116.130

SPARE PARTS

Designation	Clamping screw ①	Wrench ②
314.***.***007	CSTB-2.2L038	T-7F
314.***.***011	CSTB-2.5S	T-8F

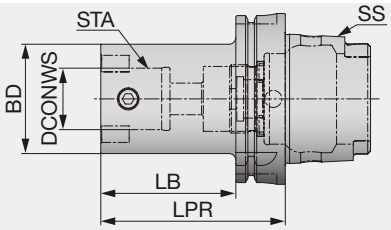


Reference pages: SwissBore314: Inserts → B142 -, CBN → B199 -, PCD → B217
Boring Head → K165

SWISSBORE

SwissBore144

Master shank holders DIN 69893



Metric	SS	STA	BD	DCONWS	LPR	LB
144.806.020.042	HSK A 63	ST1	20	11	42	16
144.806.025.042	HSK A 63	ST2	25	14	42	16
144.806.032.044	HSK A 63	ST3	32	18	44	18
144.806.039.048	HSK A 63	ST4	39	22	48	22
144.806.050.059	HSK A 63	ST5	50	28	59	33
144.806.064.070	HSK A 63	ST6	64	36	70	44
144.806.064.100	HSK A 63	ST6+	64	36	100	74
144.810.020.055	HSK A 100	ST1	20	11	55	26
144.810.025.055	HSK A 100	ST2	25	14	55	26
144.810.032.057	HSK A 100	ST3	32	18	57	28
144.810.039.061	HSK A 100	ST4	39	22	61	32
144.810.050.072	HSK A 100	ST5	50	28	72	43
144.810.064.078	HSK A 100	ST6	64	36	78	49
144.810.064.108	HSK A 100	ST6+	64	36	108	79
144.810.090.127	HSK A 100	ST7+	90	46	127	98

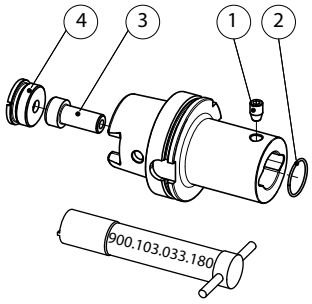
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



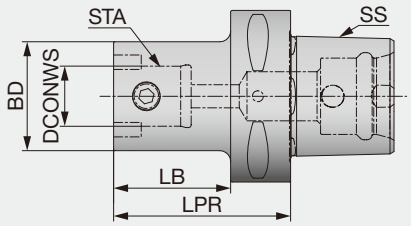



Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	-
ST7+	900.100.020.029	900.101.043.002	(900.102.024.045)	-
HSK A 63	-	-	-	(900.104.030.014)
HSK A 100	-	-	-	(900.104.040.020)



SwissBore154

Master shank holders PSC (TungCap)

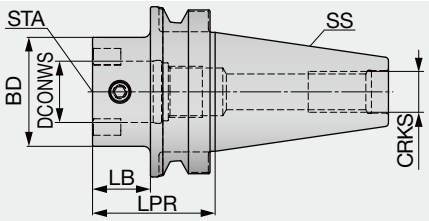


Metric	SS	STA	BD	DCONWS	LPR	LB
154.806.020.065	C6	ST1	20	11	65	43
154.806.025.065	C6	ST2	25	14	65	43
154.806.032.065	C6	ST3	32	18	65	43
154.806.039.058	C6	ST4	39	22	58	36
154.806.050.048	C6	ST5	50	28	48	26
154.806.064.059	C6	ST6	64	36	59	37
154.806.064.094	C6	ST6+	64	36	94	72

Option : Tension screw & Threading ring of ST+ type

SwissBore134

Master shank holder for MAS-BT

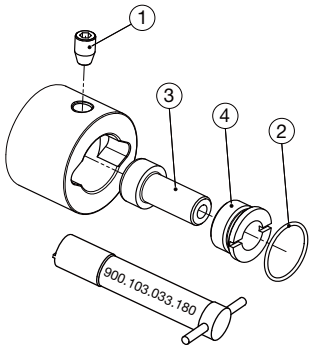


Metric	SS	STA	BD	DCONWS	LPR	LB	CRKS
134.530.050.038	BT30	ST5	50	28	38	16	M12
134.540.020.042	BT40	ST1	20	11	42	15	M16
134.540.025.042	BT40	ST2	25	14	42	15	M16
134.540.032.044	BT40	ST3	32	18	44	17	M16
134.540.039.048	BT40	ST4	39	22	48	21	M16
134.540.050.055	BT40	ST5	50	28	55	28	M16
134.540.064.046	BT40	ST6+	64	36	46	19	M16
134.550.020.063	BT50	ST1	20	11	63	25	M24
134.550.025.063	BT50	ST2	25	14	63	25	M24
134.550.032.065	BT50	ST3	32	18	65	27	M24
134.550.039.069	BT50	ST4	39	22	69	31	M24
134.550.050.072	BT50	ST5	50	28	72	34	M24
134.550.064.072	BT50	ST6+	64	36	72	34	M24
134.550.090.086	BT50	ST7+	90	46	86	48	M24

SPARE PARTS



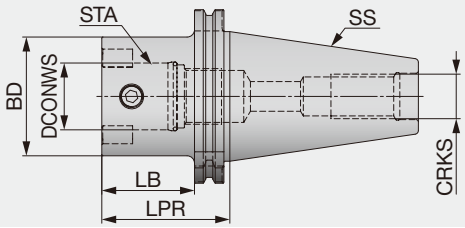
Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	(900.103.030.020)
ST7+	900.100.020.029	900.101.043.002	(900.102.024.045)	(900.103.040.020)



SWISSBORE

SwissBore114

Master shank holders DIN 69871 A/D

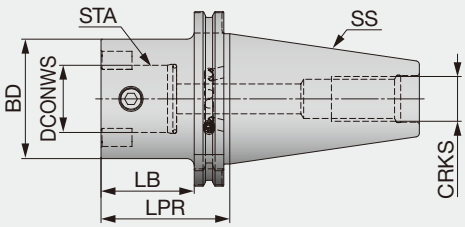


Metric	SS	STA	BD	DCONWS	LPR	LB	CRKS
114.430.050.050	SK30	ST5	50	28	50	30.9	M12
114.440.020.035	SK40	ST1	20	11	35	15.9	M16
114.440.025.040	SK40	ST2	25	14	40	20.9	M16
114.440.032.040	SK40	ST3	32	18	40	20.9	M16
114.440.039.043	SK40	ST4	39	22	43	23.9	M16
114.440.050.043	SK40	ST5	50	28	43	23.9	M16
114.440.064.059	SK40	ST6+	64	36	59	39.9	M16
114.450.020.045	SK50	ST1	20	11	45	25.9	M24
114.450.025.050	SK50	ST2	25	14	50	30.9	M24
114.450.032.050	SK50	ST3	32	18	50	30.9	M24
114.450.039.053	SK50	ST4	39	22	53	33.9	M24
114.450.050.053	SK50	ST5	50	28	53	33.9	M24
114.450.064.069	SK50	ST6+	64	36	69	49.9	M24
114.450.090.085	SK50	ST7+	90	46	85	65.9	M24

Option : Tension screw & Threading ring of ST+ type

SwissBore124

Master shank holders DIN 69871 B



Metric	SS	STA	BD	DCONWS	LPR	LB	CRKS
124.440.020.035	SK40	ST1	20	11	35	15.9	M16
124.440.025.040	SK40	ST2	25	14	40	20.9	M16
124.440.032.040	SK40	ST3	32	18	40	20.9	M16
124.440.039.043	SK40	ST4	39	22	43	23.9	M16
124.440.050.043	SK40	ST5	50	28	43	23.9	M16
124.440.064.059	SK40	ST6+	64	36	59	39.9	M16
124.450.020.045	SK50	ST1	20	11	45	25.9	M24
124.450.025.050	SK50	ST2	25	14	50	30.9	M24
124.450.032.050	SK50	ST3	32	18	50	30.9	M24
124.450.039.053	SK50	ST4	39	22	53	33.9	M24
124.450.050.053	SK50	ST5	50	28	53	33.9	M24
124.450.064.069	SK50	ST6+	64	36	69	49.9	M24

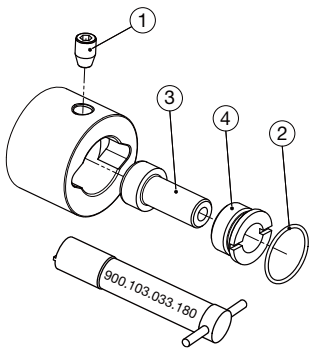
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



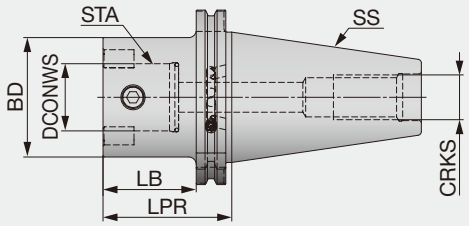



Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	(900.103.030.020)
ST7+	900.100.020.029	900.101.043.002	(900.102.024.045)	(900.103.040.020)



SwissBoreSP

Master shank holders DIN 69871 B2 with face contact

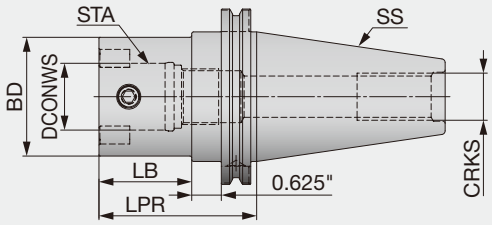


Metric	SS	STA	BD	DCONWS	LPR	LB	CRKS
SP4.ST5.K01.043	SK40	ST5	50	28	41	25	M16
SP4.ST6.K01.059	SK40	ST6	64	36	59	43	M16
SP5.ST5.K01.053	SK50	ST5	50	28	51	35	M24
SP5.ST6.K01.069	SK50	ST6	64	36	69	53	M24
SP5.ST6.K01.100	SK50	ST6+	64	36	100	84	M24
SP5.ST7.K01.100	SK50	ST7	90	46	100	84	M24

Option : Tension screw & Threading ring of ST+ type

SwissBore104

Master shank holders ANSI B5.50



Metric	SS	STA	BD	DCONWS	LPR	LB	CRKS
104.340.020.051	CAT40	ST1	20	11	51	16	5/8"-11
104.340.025.056	CAT40	ST2	25	14	56	21	5/8"-11
104.340.032.056	CAT40	ST3	32	18	56	21	5/8"-11
104.340.039.059	CAT40	ST4	39	22	59	24	5/8"-11
104.340.050.059	CAT40	ST5	50	28	59	24	5/8"-11
104.340.064.075	CAT40	ST6+	64	36	75	40	5/8"-11
104.350.020.061	CAT50	ST1	20	11	61	26	1"-8
104.350.025.066	CAT50	ST2	25	14	66	31	1"-8
104.350.032.066	CAT50	ST3	32	18	66	31	1"-8
104.350.039.069	CAT50	ST4	39	22	69	34	1"-8
104.350.050.069	CAT50	ST5	50	28	69	34	1"-8
104.350.064.085	CAT50	ST6+	64	36	85	50	1"-8
104.350.090.085	CAT50	ST7+	90	46	85	50	1"-8

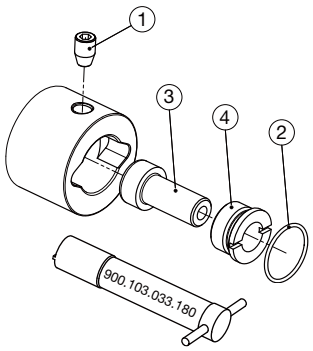
SPARE PARTS






Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	(900.103.030.020)
ST7+	900.100.020.029	900.101.043.002	(900.102.024.045)	(900.103.040.020)

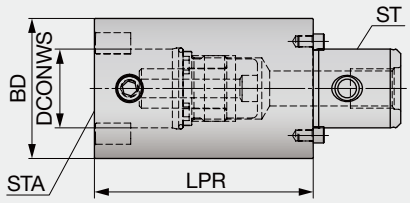
For SwissBore114, 124, 134 and 154



SWISSBORE

SwissBore164

Extension adapter



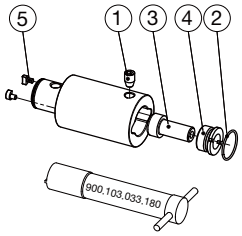
Metric	ST	STA	BD	DCONWS	LPR
164.020.020.020	ST1	ST1	20	11	20
164.020.020.030	ST1	ST1	20	11	30
164.025.025.030	ST2	ST2	25	14	30
164.025.025.045	ST2	ST2	25	14	45
164.032.032.030	ST3	ST3	32	18	30
164.032.032.045	ST3	ST3	32	18	45
164.039.039.040	ST4	ST4	39	22	40
164.039.039.060	ST4	ST4	39	22	60
164.050.050.060	ST5	ST5	50	28	60
164.050.050.090	ST5	ST5	50	28	90
164.064.064.060	ST6+	ST6+	64	36	60
164.064.064.100	ST6+	ST6+	64	36	100
164.090.090.100	ST7+	ST7+	90	46	100
164.090.090.160	ST7+	ST7+	90	46	160

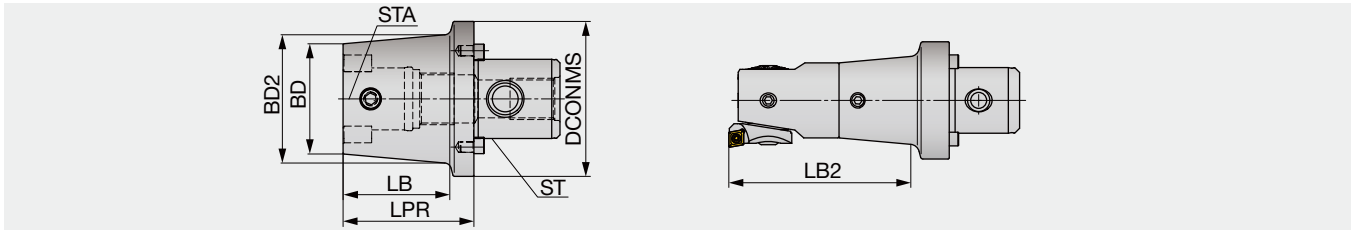
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	(900.103.030.020)	900.102.064.000
ST7+	900.100.020.029	900.101.043.002	(900.102.024.045)	(900.103.040.020)	900.102.090.000





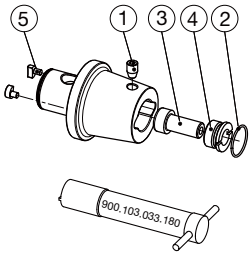
Metric	ST	STA	DCONMS	BD	BD2	LPR	LB	LB2
184.025.020.036	ST2	ST1	25	20	23	36	25	60.5
184.032.025.034	ST3	ST2	32	25	29	34.5	20	60
184.039.032.047	ST4	ST3	39	32	38	47	35	82
184.050.039.040	ST5	ST4	50	39	48	40	25.5	82.5
184.064.050.039	ST6+	ST5	64	50	60	39	24	104

LB2 : Max boring depth with twin cutter or fine boring head
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



Clamping size	Clamping screw ①	O-ring ②	Tension screw ③ (Optional)	Threaded ring ④ (Optional)	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6+	900.100.012.018	900.101.032.002	(900.102.018.040)	(900.103.030.020)	900.102.090.000



MATRIX



Go digital with your tool inventory control and management! Automated purchasing for time saving and tool cost reduction!



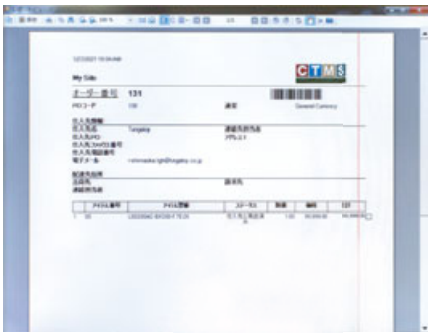
Always the right tools for the job. And they are just a few taps away



Accurate and reliable statistics are stored and can be accessed



Fully managed environment that let you focus more on production



- Automatic calculation of re-order points and purchasing
- Alerts for stock shortages
- Streamline purchasing. Revolutionary planning engine ensures that needed items will be ordered and at the point of use on time





- Smart multidimensional reports for full up-to-date coverage of your inventory
- Analyzer app for quick overview of key performance data
- Sophisticated planning engine and reporting ensure maximum availability with minimum stock

Lineup

Model	MAXI Premium	MINI	DLS 8D / DLS 4D	TOOLPORT
Cabinet external view	First Choice ! 			
Features	**Now with larger touchscreen** - Capacity: 3,000 - 5,000 items or more - High performance PC (i5), 2D barcode reader, fingerprint reader - Company logos are printed on the sides upon request - Two year hardware warranty - Touchscreens are optional (mandatory for the first cabinet)	**First choice for small to medium stock sizes** - Capacity: 1,000 - 2,000 items - Smaller in size with fewer drawers than MAXI - Sits atop of DLS 4D	**Economical series with spacious open drawers** - 8 or 4 drawers per cabinet (DLS 4D is POD version only) - Electrically locked drawers - Flexible drawer partitions - Also suitable for long and large diameter tools	**Dispenses single inserts and small items, one by one** - 8 or 4 single insert drawers - Secure environment for expnesive inserts and tools
Drawers per cabinet/ capacity	1 - 12 (depends on drawer heights and quantity of Auto-Locks)	1 - 5 (depends on drawer heights and quantity of Auto-Locks)	DLS 8D: 8 drawers DLS 4D: 4 drawers	8D: 1600 inserts 4D: 800 inserts
Drawer heights	50 mm, 75 mm, 100 mm, 125 mm	50 mm, 75 mm, 100 mm	DLS 8D: 75 mm x 3, 100 mm x 4, 175 mm x 1 DLS 4D: 75 mm x 1, 100 mm x 2, 175 mm x 1 (Net heights)	-
Load weight per drawer	Up to 50 kg (90 kg for JUMBO drawer)	Up to 20 kg	180 kg	-
Cabinet weight	400 kg - 600 kg (varies depending on number of drawers and Auto-Locks)	165 kg (varies depending on number of drawers and Auto-Locks)	270 kg (varies depending on number of drawers and drawer configurations)	222 kg (varies depending on number of drawers)
Cabinet dimensions (WxDxH)	1180 mm × 752 mm × 1469 mm	860 mm × 581 mm × 800 mm	DLS 8D: 915 mm x 610 mm x 1220 mm DLS 4D: 915 mm x 610 mm x 820 mm	8D: 676 mm × 630 mm × 1475 mm 4D: 676 mm × 630 mm × 905 mm
Electrical supply	100V - 230V	100V - 230V	100V - 230V	100V - 230V

More Digital Solutions of MATRIX



MATRIX ANDROID

Tool Crib Management from the palm of your hand! MATRIX app that manages traditional warehouse and tool room.



MATRIX POUCH

Always the Right Tools for the Job! MATRIX Pouch reads Balluff chip (Type C) on tool adapter. Data string with tool assembly code is then transmitted to MATRIX for quick “error proof” access restricted to those tools approved for the job.



MATRIX RTLS

MATRIX Real Time Location System tracks production assets as they move around the shop floor. Provides 100% Visibility for items even after they leave the tool room.

Alphanumeric Index

Tooling system

Designation	Product name	Page
104.□□□.□□□.□□□	SwissBore master shank holder for ANSI B5.50	K171
114.□□□.□□□.□□□	SwissBore master shank holder for DIN 69871 A/D	K170
124.□□□.□□□.□□□	SwissBore master shank holder for DIN 69871 B	K170
134.□□□.□□□.□□□	SwissBore master shank holder for MAS-BT	K169
144.□□□.□□□.□□□	SwissBore master shank holder for DIN 69893 HSK A	K168
154.□□□.□□□.□□□	SwissBore master shank holder for PSC(TungCap)	L169
164.□□□.□□□.□□□	SwissBore extension adapter	K172
16D.RINGSEMC	Driving ring	K148
184.□□□.□□□.□□□	SwissBore reduction adapter	K173
2□D.RINGSEMC	Driving ring	K148
206.064.025.045	SwissBore digital fine boring head	K163
254.□□□.□□□.□□□	TungCap / SwissBore boring bar	K056, K163
256.□□□.□□□.□□□	TungCap / SwissBore boring bar	K056, K164
305.□□□.□□□.□□□	SwissBore digital fine boring head	K165
314.□□□.□□□.□□□	TungCap / SwissBore insert holder, 90° corner	K057, K166, K167
32D.RINGSEMC	Driving ring	K148
40D.RINGSEMC	Driving ring	K148
50D.RINGSEMC	Driving ring	K148
A		
ADJC□ER32	TungCap ER collet chuck holder with center alignment	K042
ADJHSKA□□D70ER32	ER collet chuck holder with center alignment	K082
ADJST□□D70ER32	ER collet chuck holder with center alignment	K109
B		
BT□□FCEM□□X...	Cutter body holder	K102
BT□□FCSEM□□X...	Cutter body holder	K103
C		
C□-C□RE-...	TungCap reduction adapter	K054
C□-DTIR-□□□□□-D...	TungCap manual clamping unit	K059
C□-DTOFR/L...	TungCap manual clamping unit	K059
C□-DTOS□□□□R/L	TungCap manual clamping unit	K059
C□-TB-...	TungCap test bar	K054
C□ABB□□-...	TungCap adapter for boring bar	K027
C□ACLNN□□□□□-12	TungCap external/facing toolholder	K009
C□ACLNN□□□□□-12N	TungCap external/facing toolholder	K009
C□ACLNR/L□□□□□-0904N	TungCap external/facing toolholder	K008
C□ACLNR/L□□□□□-12N	TungCap external/facing toolholder	K008
C□ADCATI□□X...	TungCap CAT basic holder	K053
C□ADE-□□R/L	TungCap adapter for external square shank	K021
C□ADES-20	Adapter for square shank toolholders	K022
C□ADHSKA□□□WHX...	TungCap basic holder for HSK	K052
C□ADI...	TungCap adapter for boring bar	K029
C□ADJNR/L□□□□□-1104N	TungCap external/profiling toolholder	K011
C□ADJNR/L□□□□□-15N	TungCap external/profiling toolholder	K011
C□ADNNN□□□□□-15	TungCap external/profiling toolholder	K016
C□ADNNN□□□□□-15N	TungCap external/profiling toolholder	K016
C□ADQNR/L□□□□□-15N	TungCap profiling toolholder	K017
C□ADSKA□□X...	TungCap basic holder with dual contact	K052

Designation	Product name	Page
C□ADSKA□□X□□ADB	TungCap basic holder with dual contact	K052
C□ASHA...	TungCap adapter for external square shank	K021
C□ASHR/L...	TungCap adapter for external square shank	K022
C□ASHR/L□□-45	Adapter for square shank toolholders (with 45° slanted)	K023
C□ATJNR/L□□□□□-16N	TungCap external/profiling toolholder	K013
C□AVJNR/L□□□□□-1204N	TungCap external/profiling toolholder	K014
C□AVJNR/L□□□□□-16N	TungCap external/profiling toolholder	K014
C□AWLNR/L□□□□□-0604N	TungCap external/facing toolholder	K010
C□AWLNR/L□□□□□-08N	TungCap external/facing toolholder	K010
C□CER/L□□□□□-16ER	TungCap external threading toolholder	K030
C□CER/L□□□□□-16ERN	TungCap external threading toolholder	K030
C□CHFVN□□□□□-CHP	TungCap perpendicular toolholder for adapters with high pressure coolant capability	K035
C□CHFVR/L□□□□□N	TungCap perpendicular toolholder for adapters	K033
C□CHSN□□□□□-CHP	TungCap toolholder for adapters with high pressure coolant capability	K035
C□CHSR/L□□□□□N	TungCap toolholder for adapters	K033
C□EM□□X...	TungCap Side lock holder for endmill	K039
C□EM□□X□□E	TungCap Side lock holder for endmill	K040
C□EPA□□M□□□R03L...	TungCap Tung-Tri cutter body	K038
C□ER□□X...	TungCap collet chuck holder	K041
C□ER□□X□□□M	TungCap ER Mini collet chuck holder	K042
C□EX-...	TungCap Extension adapter	K053
C□MAXIN□□X...	TungCap power chuck holder	K046
C□ODP□□X...	TungCap modular system	K045
C□PCLNR/L□□□□□-0904-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K009
C□PCLNR/L□□□□□-12-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K009
C□PCLNR/L□□□□□-12N	TungCap external/facing toolholder	K008
C□PCLNR□□□□□-0904	TungCap internal/facing toolholder	K024
C□PCLNR□□□□□-12	TungCap internal/facing toolholder	K024
C□PDJNR/L□□□□□-1104-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	K012
C□PDJNR/L□□□□□-15-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	K012
C□PDJNR/L□□□□□-15N	TungCap external/profiling toolholder	K012
C□PVJNR/L□□□□□-16-CHP	TungCap external/profiling toolholder	K014
C□PWLNR/L□□□□□-08-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K010
C□SCA□□-...	TungCap slot milling holder	K051
C□SCLCR□□□□□-09	TungCap internal/facing toolholder	K024
C□SDXXR□□□□□-07	TungCap internal/profiling toolholder	K026
C□SEM□□X□□C	TungCap shell mill holder	K044

Designation	Product name	Page
C□SRKIN□□X...	TungCap Thermal shrinking holder	K050
C□STCR/L□□□□□-18-CHP	TungCap external threading/grooving toolholder with high pressure coolant capability	K031
C□SVJCR/L□□□□□-11N	TungCap external/profiling toolholder	K015
C□SVJCR/L□□□□□-16	TungCap external/profiling toolholder	K015
C□SVJCR/L□□□□□-16N	TungCap external/profiling toolholder	K015
C□SVQBR□□□□□-11	TungCap internal/profiling toolholder	K027
C□SVQBR□□□□□-16	TungCap internal/profiling toolholder	K027
C□SVVCN□□□□□-16	TungCap external/profiling toolholder	K016
C□SVVCN□□□□□-16N	TungCap external/profiling toolholder	K016
C□TDX□□□L□□□-3	TungCap TungDrill-Twisted drill body	K037
C□TLA15M□□□R□□L...	TungCap Tung-Tri cutter body	K038
C3CEL18065-16ERB-CHP	TungCap external threading toolholder with high pressure coolant nozzle	K031
C3CEL22040-16ERN-B	TungCap external threading toolholder	K030
C3PTUNL□□□□□-16-CHP	TungCap profiling toolholder	K020
C3SCLCL□□□□□-09-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K011
C3SDJCR/L22040-11-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	K015
C3SDUCL□□□□□-11-CHP	TungCap profiling toolholder	K020
C3STCFL□□□□□-18-CHP	TungCap external threading/grooving toolholder with high pressure coolant capability	K032
C3SVUCL18065-11-CHP	TungCap profiling toolholder	K020
C4ADUNR/L27050-15N	TungCap profiling toolholder	K019
C4ADUNR□□□□□-15	TungCap internal/profiling toolholder	K025
C4AVQNR/L27050-16N	TungCap profiling toolholder	K017
C4PDUNR/L17080-11	TungCap internal/profiling toolholder	K025
C4PTJNR/L27050-1104N	TungCap external/profiling toolholder	K013
C4PWLNR/L□□□□□-0604-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K010
C4STCR/L27050-27-CHP	TungCap external threading/grooving toolholder with high pressure coolant capability	K032
C4SWLXR11070-04	TungCap internal/facing toolholder	K025
C5PCLNR/L35060-12	TungCap external/facing toolholder	K008
C6ACLNR/L45065-16N	TungCap external/facing toolholder	K008
C6ACMNN□□□□□-0904N	TungCap external/facing toolholder	K018
C6ACMNN□□□□□-12N	TungCap external/facing toolholder	K018
C6PCLNL17100-12-CHP	TungCap internal/facing toolholder with high pressure coolant nozzle	K024
C6PCMNN00130-12-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K018
C6PDMNL00130-1104-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	K019
C6PDUNL17100-1104-CHP	TungCap internal/profiling toolholder with high pressure coolant nozzle	K026
C6TBK-32R/L	TungCap adapter for parting blades	K037
C8FM60X60	TungCap cutter body holder	K045
CABM□□M...	TungFlex extension	K113
CAER/L-□T...	TungCut external grooving and turning adapters	K034
CAER/L-□T□□-CHP	TungCut external grooving/parting adapters for high pressure coolant capability	K036
CAFR/L-□T□□-...	TungCut face grooving and turning adapters	K034
CDPER□□M...	TungFlex ER collet chuck holder	K114
CDPM□□SRK□□X...	TungFlex thermal shrinking holder (for carbide shank)	K114
COOLINGTUBEHSKA...	Cooling tube for HSK	K148

E

EASYLOCKT.CEU	Electrical nut-clamp torque control device	K150
ER...	ER collet	K117
ER□□CF4-...	TungFit ER collet chuck adapter	K115
ER□□SEAL□□AA	ER sealed spring collet	K120, K121
ER□□SEAL□□AAJET	ER sealed spring collet	K122
ER□□SPR□-...	ER spring collet	K118
ER□□SPR□-□AA	ER spring collet	K119
ER□□SPR□.□-...	ER spring collet	K118
ER□□SPR□.□-□.□AA	ER spring collet	K119
ER□□SPR□□-...	ER spring collet	K118
ER□□SPR□□-□□AA	ER spring collet	K119
ER□□SRK□□X...	TungShrink ER collet type	K134, K135
ER□□SRK□□X□□JET2	TungShrink ER collet type	K136
ER11SPR□-□AA	SpinJet ER11 collet	K155
ER11SRK□X...	SpinJet thermal shrinking ER collet	K155
ER32ODPM□□X...	TungFlex collet for ER collet chuck	K133
ER32SRF□□X...	TungShrink -quick change type	K138
ER32SRF□□X□□JET2	Thermal shrinking holder adapter	K138
EXCF4-...	TungFit extension adapter	K115
EXTRACTORSCCOLLETS	SC collet extracting hook	K049, K144

G

GFIMT□ER...	Collet chuck	K111
GFIST□□ER...	Collet chuck	K111
GH1-DA2.BG0.077	TungCap / SwissBore digital display unit	K057, K162
GTIER□□ST□□X...	TungGTI tapping holder	K108
GTINER32DIN□□.□□X...	Tapping attachment (DIN)	K139
GTINER32ISO□□.□□X...	Tapping attachment (ISO)	K139
GTINER32JIS□□.□□X...	Tapping attachment (JIS)	K140
GYROST□□ER...	TungGyro collet holder for lathes	K109

H

HA6-FBHO-DE-1695	TungCap digital boring head	K056
HSK□□A-C□-...	TungCap basic holder for HSK	K052
HSKA□□B16MN...	Blank for holders	K084
HSKA□□CF4-S	TungFit quick change holder	K083
HSKA□□EM□□X...	Side lock holder (weldon)	K069
HSKA□□EM□□X□□E	Side lock holder (whistle notch)	K070
HSKA□□ER□□SHORT	ER collet chuck holder	K065
HSKA□□ER□□X...	ER collet chuck holder	K064
HSKA□□ER□□X□□□M	ERMini collet chuck holder	K063
HSKA□□HYDRO□□X...	TungHydro hydraulic endmill holder	K067, K068
HSKA□□MAXIN□□X...	TungMax endmill holder	K065
HSKA□□MAXIN□□X□□□BIN	TungMax endmill holder	K066
HSKA□□MT□X...	Morse taper holder	K082
HSKA□□ODP□□X...	Modular system	K083
HSKA□□SEM□□X...	Shell mill holder	K079
HSKA□□SEMC□□X...	Combination holder for slot mill and shell mill	K081
HSKA□□SRK□□X...	TungShrink Thermal shrinking holder	K072, K073
HSKA□□SRKIN□□X...	TungShrink Thermal shrinking holder	K072, K073
HSKA100FM60X70	Shell mill holder	K081
HSKA63ER32CLICK-IN	Quick change holder	K082
HSKA63ER32X120BIN	ER collet chuck holder	K066
HSKE□□ER□□X...	ER collet chuck holder	K063
HSKE□□ODP□□X...	Modular system	K084
HSKE□□SEM□□X...	Shell mill holder	K078
HSKE□□SRK□□X...	TungShrink Thermal shrinking holder	K076, K077
HSKFM□□ER□□X...	ER collet chuck holder	K065
HSKFM□□SRK□□X...	TungShrink Thermal shrinking holder	K074
HSKFM63SEM□□X...	Shell mill holder	K080
HSKFM63SEM1X2.375	Shell mill holder	K080
HSKFM63SEM3/4X...	Shell mill holder	K080
HSKFM63SRKIN25X115	TungShrink Thermal shrinking holder	K074

I

IND SHRINK IN UNIT EUR	Induction heating unit for shrink tool chucking	K137
IND SHRINK IN UNIT USA	Induction heating unit for shrink tool chucking	K137
IND SHRINK START UNIT EUR	Induction heating unit for shrink tool chucking	K137
IND SHRINK START UNIT USA	Induction heating unit for shrink tool chucking	K137
INDER11TOOLADAPTER	Thermal shrinking collet	K155

K

KITDIN2080□□□□ER...	ER collet type taper shank & collet (kit)	K125
KITDIN6987140HYDRO□□X...	TungHydro hydraulic chuck kit	K129
KITGTIER□□ST□□X...	Tapping attachment kit	K108
KITGYRO□□D69880ER...	TungGyro	K110
KITGYROST□□ER...	TungGyro	K110
KITHSKA63HYDRO□□X...	TungHydro hydraulic chuck kit	K129
KITMT□□□ER...	ER collet type taper shank & collet (kit)	K125
KITR-81□ER...	ER collet type taper shank & collet (kit)	K125
KITSK□□MAXIN□□X...	TungMax milling kit	K131
KITST□□X□□□□ER...	ER collet straight shank kit	K126
KITST□□X□□□□□ER□□M	ERMini collet straight shank kit	K126

Alphanumeric Index

Designation	Product name	Page
M		
M□□CLAMPSCREWSEM...	Clamp screw for shell mill holder	K146
MATRIX	Tool management system	K174
MT□ER□□X...	ER collet chuck holder	K109
MULTICLAMP□□□□/...	Multi-clamp fixture for HSK shank	K149
MULTICLAMPC...	TungCap multi-clamp fixture	K054
N		
NUTER...	UM/Mini nut for ER collet chuck	K142
NUTER□□SHORT	Nut for ER collet chuck	K143
NUTER□□TOP	Nut for ER collet chuck	K142
NUTER□□TOPBIN	Balanceable nut for ER collet chuck	K143
NUTER11GHS	SpinJet Nut for Spinjet collet	K143, K156
P		
PRESETER-JET□□X...	Preset screw for ER collet	K043, K145
PRESETMAXIN□□X...	Preset screw for power chuck holder	K049, K145
PRESETSCCAP□□X...	Preset screw for straight collet	K049, K128
PRESETSCREWHYDROM...	Preset screw for hydraulic chuck	K131
PRESETSCREWM□□X□□B	Preset screw with coolant hole for EME/SRKIN	K147
PSBT□□□□M...	Pull stud for BT with JIS/ANSI (MAZAK) knob	K140
PSC□□-FBHO-DE-16...	SwissBore digital boring head	K056
PSC□□-FBHS-DE-...	SwissBore fine boring head for digital display	K057
PSCAT□□□□M□□ISOB	Pull stud	K141
PSOTTBT□□M...	Pull stud	K142
PSSK□□□□M□□DIN...	Pull stud	K141
R		
R-8ER□□X...	ER collet chuck holder	K104
S		
SC□□SEAL...	SC straight collet	K047, K128
SC□□SHYDRO...	Sealed collet for hydraulic chuck	K130
SC□□SPR...	SC straight collet	K048, K127
SC□□T□□A/B	TungCap sleeve for C-ABB adapter	K028
SCA□□□□-02	Collar for slot mill	K051
SCREW □□-□□ SEM...	Clamp screw for shell mill holder	K146
SEM22CF4C	TungFit shell mill adapter	K115
SETER□□S□□AAJETINCH	Set of ER sealed spring collets	K124
SETER□□SEAL□□AA	Set of ER sealed spring collets	K124
SETER□□SEAL□□AAINCH	Set of ER sealed spring collets	K124
SETER□□SEAL□□AAJET	Set of ER sealed spring collets	K124
SETER□□SPR...	Set of ER spring collets	K123
SETER□□SPR□□AA	Set of ER spring collets	K123
SETER□□SPR□EM	Set of ER spring collets	K123
SETER32SRK□6EUR	Set of ER collets with thermal shrink chucks	K137
SETER32SRK□6USA	Set of ER collets with thermal shrink chucks	K137
SETSC□□SEAL...	Set of straight collet with coolant hole	K132
SETSC□□SPR...	Set of Straight collet	K132
SM□□-L□□□-C...	TungFlex modular system	K112
SM□□-L□□□-C□□□C-H	TungFlex modular system	K112, K113
SM□□-L□□□/□.□□-CF4	TungFlex-TungFit conversion adapter	K113
SM□□-L□□C...	TungFlex modular system	K112
SP□.ST□.K01...	SwissBore master shank holder for DIN 69871 B with face contact	K171
SRM□□X...	Clamp screw for endmill holder	K147
ST□□X□□□ER...	ER collet chuck holder	K105
ST□□X□□□ER□□M	ERMini collet chuck holder	K104
ST□□X□□□ER□□MF	ERMini collet chuck holder	K106
ST□□X□□0SRK...	TungShrink Thermal shrinking holder	K107
ST□□X□□ER□□MF	ERMini collet chuck holder	K106
ST□□X□□ER□□MFD	ER collet chuck holder, double end type	K106
ST□□X□□ER□□S	ER collet chuck holder, internal coolant supply	K107
ST16X50ER11MF	ERMini collet chuck holder	K104
STCAR/L18-CHP	TetraMini-Cut external grooving/parting adapter for high pressure coolant capability	K036
STCAR/L27-CHP	TetraForce-Cut external grooving/parting adapter for high pressure coolant capability	K036
T		
TESTBARHYDRO...	Torque test bar for hydraulic chuck	K131
TJSGJETBT...	SpinJet high speed spindle	K151
TJSGJETC...	SpinJet high speed spindle	K152
TJSGJETCAT40	SpinJet high speed spindle	K153
TJSGJETER32	SpinJet high speed spindle	K151
TJSGJETHSKA63	SpinJet high speed spindle	K152
TJSGJETST20	SpinJet high speed spindle	K153
TJSSHAFTLOCKKEYGJET	SpinJet shaft lock key	K156
TJSTSDDISPLAY...	SpinJet wireless RPM display	K154
TOOLCLAMP...	Tool clamp fixture	K149
TW-B-...	Blade for FixedTorqueWrench	K159
TW-D-□.□NM	Handle for FixedTorqueWrench	K159
W		
WRENCHCOOLTUBEHSK...	Wrench for HSK cooling tube	K149
WRENCHER...	Wrench for ER nut and ER collet chuck	K042, K144
WRENCHM□□SEMC...	Wrench for cutter arbor	K044, K148
WRENCHMAXIN□□HOOK	Wrench for power chuck holder	K049, K144

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Worldwide Network





Tungaloy Corporation Head Office
11-1 Yoshima Kogyodanchi
Iwaki 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
tungaloy.com/jp

Iwaki Plant
Products: Cutting Tools

Nagoya Plant
Products: Cutting Tools

Kyushu Plant
Products: CBN
PCD Tools
Deep Hole Drills

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Products: Cutting Tools
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Civil Engineering Tools

Tungaloy-NTK America Inc.
3726 N. Ventura Drive
Arlington Heights
IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford
Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C/ Los Arellano 113
Parque Industrial Siglo XXI
Aguascalientes, AGS
Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
tungaloy.com/mx

Tungaloy-NTK do Brasil Ltda.
Avd. Independencia N4158
Residencial Flora
13280-000 Vinhedo
São Paulo, Brazil
Phone: +55-19-38262757
Fax: +55-19-38262757
tungaloy.com/br

Tungaloy-NTK Germany GmbH.
Katzbergstr. 3a
D-40764 Langenfeld, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
tungaloy.com/de

Tungaloy France s.a.s
Les Fjords
19 avenue de Norvège
91140 Villebon Sur Yvette, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
tungaloy.com/fr

Tungaloy Italia S.r.l.
Viale Sarca 336/Edificio 13
20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
tungaloy.com/it

Tungaloy Czech s.r.o
Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
tungaloy.com/cz

Tungaloy Ibérica S.L.
C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
tungaloy.com/es

Tungaloy Scandinavia AB
Bultgatan 38, 442 40
Kungälv, Sweden
Phone: +46-462119200
Fax: +46-462119207
tungaloy.com/se

Tungaloy Rus, LLC
Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
tungaloy.com/ru

Tungaloy Polska Sp. z o.o.
ul. Irysowa 1, 55-040 Bielany
Wrocławskie, Poland
Phone: +48 607 907 237
tungaloy.com/pl

Tungaloy-NTK UK Ltd.
Suite 3, Pioneer House, Mill Street,
Cannock, WS11 0EF, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
tungaloy.com/uk

Tungaloy Hungary Kft
Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
tungaloy.com/hu

Tungaloy Turkey
Serifali Mah.bayraktar
Bulvari Kule Sk. No:26
34775 Umraniye / Istanbul / Turkey
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
tungaloy.com/tr

Tungaloy Benelux b.v.
Tjalk 70
NL-2411 NZ Bodegraven Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
tungaloy.com/nl

Tungaloy Croatia
Ulica bana Josipa Jelačića 87,
10430 Samobor, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
tungaloy.com/hr

Tungaloy Cutting Tool (Shanghai) Co. Ltd.
Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
tungaloy.com/cn

Tungaloy-NTK Cutting Tool (Thailand) Co.,Ltd.
Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok
10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
tungaloy.com/th

Tungaloy Cutting Tools Taiwan Co. Ltd.
9F. No.293, Zhongyang Rd,
Xinzhuang Dist, New Taipei City,
24251 Taiwan
Phone: +886-2-8521-9986
Fax: +886-2-8521-8935
tungaloy.com/tw

Tungaloy Singapore (Pte.), Ltd.
62 Ubi Road 1
#06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
tungaloy.com/sg

Tungaloy-NTK Vietnam LLC
3rd Floor, Licogi 13 Tower, 164 Khuat Duy Tien, Nhan Chinh, Thanh Xuan District, Hanoi, Vietnam
Phone: +84 24 63282086
tungaloy.com/vn

Tungaloy India Pvt. Ltd.
One International Center,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai -400013, India
Phone: +91-22-6124-8803
Fax: +91-22-6124-8899
tungaloy.com/in

Tungaloy Korea Co., Ltd
#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
tungaloy.com/kr

Tungaloy Malaysia Sdn Bhd
50 K-2, Kelana Mall, Jalan
SS6/14, Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
tungaloy.com/my

Tungaloy Australia Pty Ltd
Unit 68 1470 Ferntree Gully Road
Knoxfield 3180 Victoria, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
tungaloy.com/au

PT. Tungaloy Indonesia
Ruko Blok AA.10 No3&5, Grand
Wisata, Lambangjaya, Tambun
Selatan, Bekasi, 17510 Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
tungaloy.com/id





Tungaloy Corporation (Head office)
11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima, 970-1144 Japan
Phone: +81-246-36-8501 Fax: +81-246-36-8542
tungaloy.com

Tungaloy-NTK America Inc.
3726 N Ventura Drive, Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394 Fax: +1-888-554-8392
tungaloy.com/us

Tungaloy Canada
432 Elgin St. Unit 3, Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779 Fax: +1-519-758-5791
tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.
C Los Arellano 113, Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone:+52-449-929-5410 Fax:+52-449-929-5411
tungaloy.com/mx





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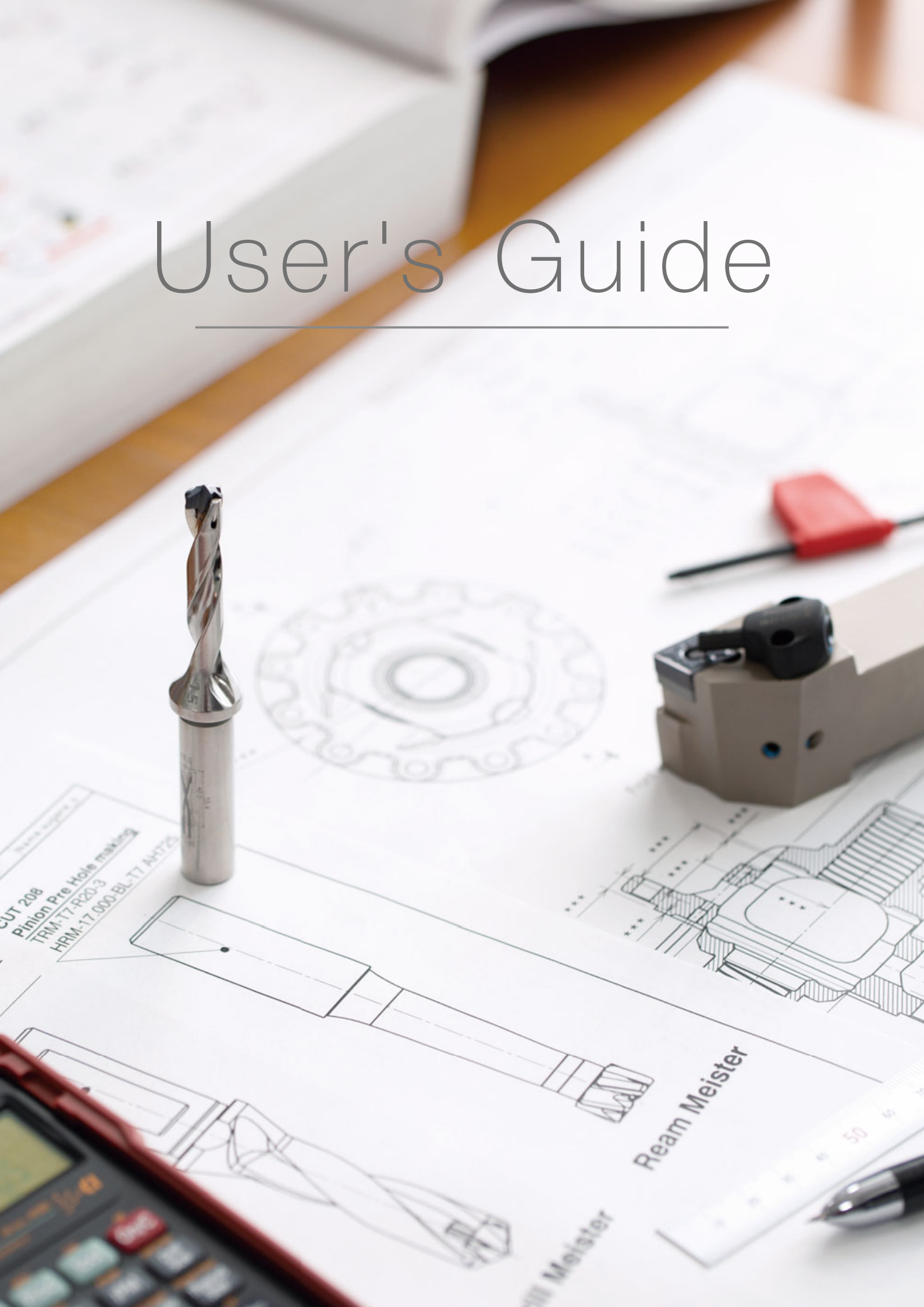


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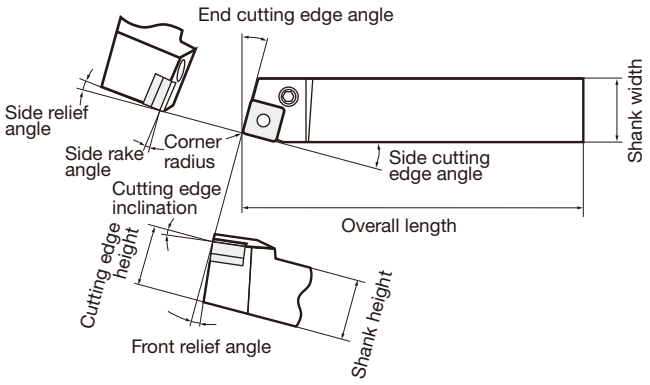


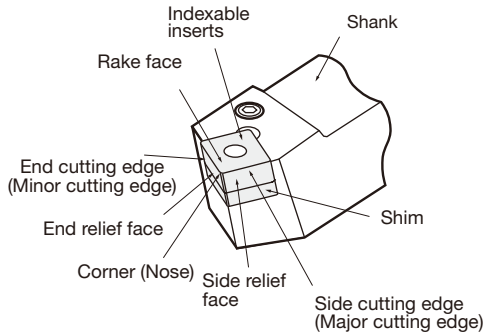
Technical Reference L003 -

Parts for Tools L118 -

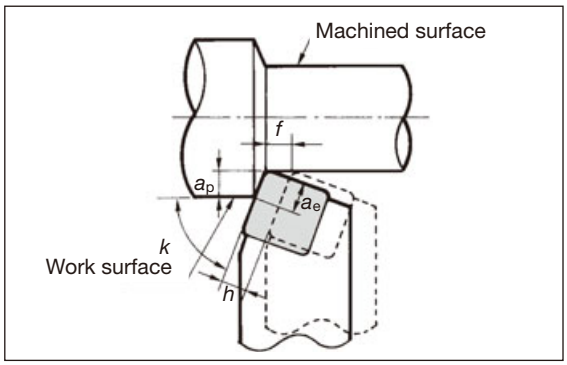
Turning Tools

Name of tools parts



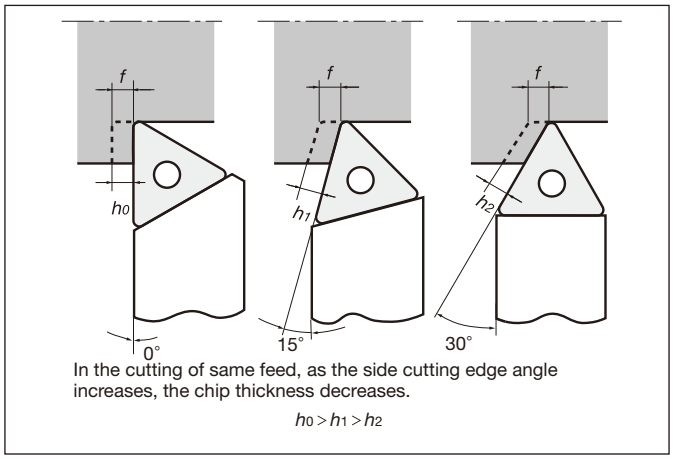


Relating angles between tool and workpiece



a_p … Depth of cut (Distance between work surface and machined surface)
a_e … Length of cutting edge engaging in cutting.
k … Cutting edge angle (Angle to be made by cutting edge and work surface)
f … Feed per revolution
h … Thickness to be cut per revolution
Machined surface … Workpiece surface after having machined.
Work surface … Workpiece surface to be cut.

● Effect of side cutting edge angle



In the cutting of same feed, as the side cutting edge angle increases, the chip thickness decreases.

$h_0 > h_1 > h_2$

● Honing

TAC indexable inserts of steel cutting grades are honed.
Honing specifications are shown in the following table.

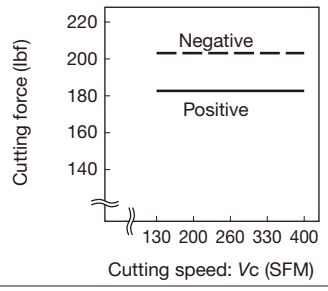
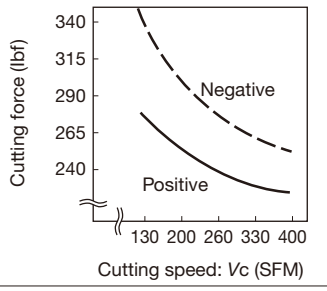
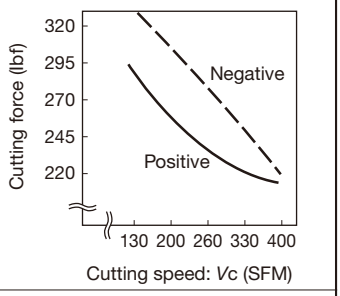
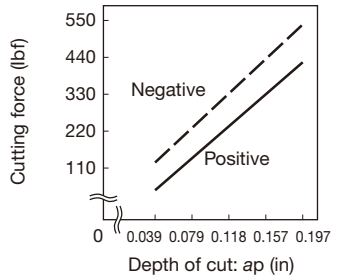
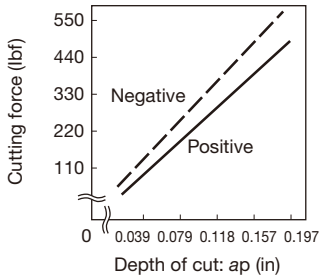
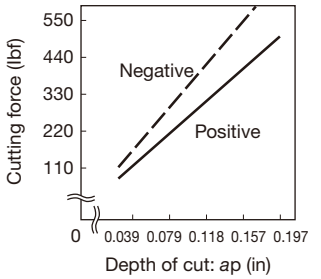
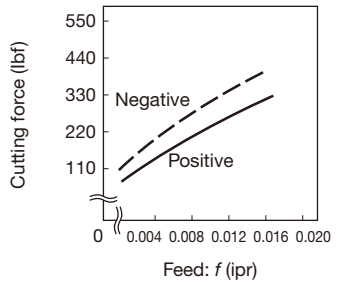
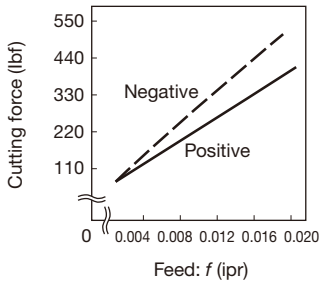
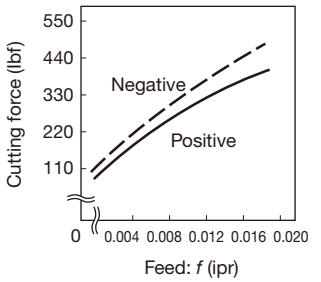
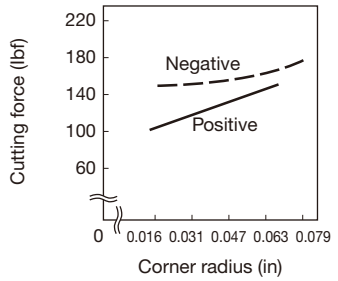
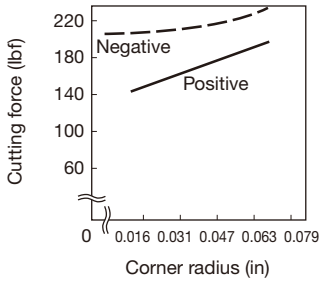
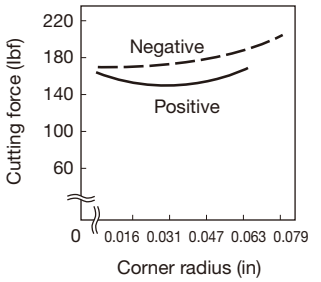
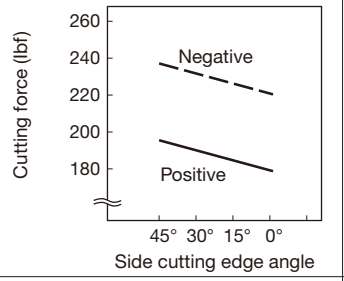
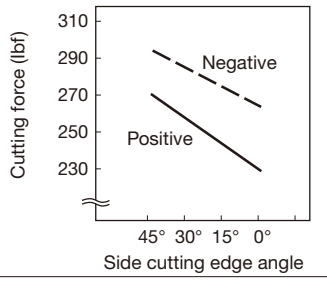
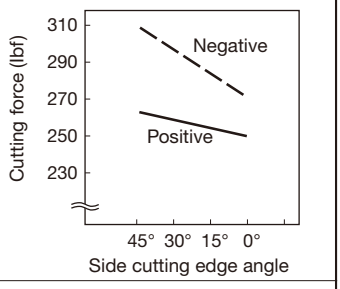
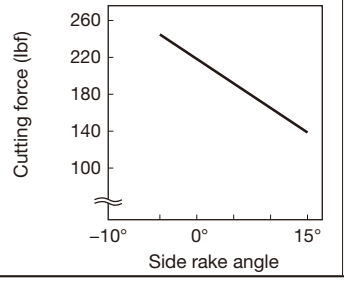
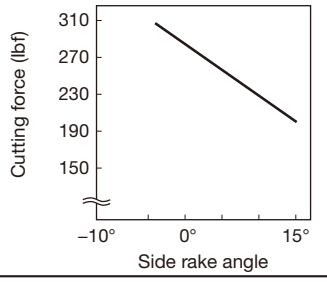
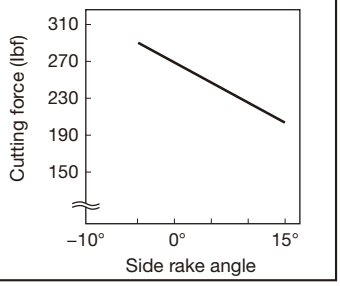
Edge condition	Shape
Sharp edge	
Round honing	
Chamfered honing	

● Effects of tool geometry on cutting phenomena

Increasing \ Phenomena	Flank wear	Crater wear	Edge strength	Cutting force	Surface finish	Chattering	Cutting edge temperature	Chip shape and flow
Cutting edge inclination	–	Decrease	Lower	Radial force decrease	–	Less tendency	Lower	Effect on flow direction
Side rake angle	–	Decrease	Lower	Decrease	–	–	Lower	Effect on shape
Relief angle	Decrease	–	Lower	Decrease	–	Likely to occur	Lower	–
End cutting edge angle	Decrease	–	Lower	Radial force decrease	Roughen	Less tendency	Lower	–
Side cutting edge angle	Decrease	Decrease	Increase	Radial force decrease	–	Likely to occur	Increase	Decrease thickness
Nose radius	Decrease to some level		Increase	Increase	Improve	Likely to occur	Increase	Effect on flow direction
Honing width	Increase	–	Increase	Increase	–	Likely to occur	Increase	–

Turning Tools

Relations between cutting force and cutting conditions or cutting phenomena

Condition	Grey cast iron (HB130)	Stainless steel (HB145)	Carbon steel (HB230)
Cutting speed and cutting force f = 0.008 ipr a_p = 0.079" Side cutting edge angle 0° Corner radius RE = 0.016"			
Depth of cut and cutting force V_c = 330 SFM f = 0.008 ipr Side cutting edge angle 0° Corner radius RE = 0.016"			
Feed and cutting force V_c = 330 SFM a_p = 0.079" Side cutting edge angle 0° Corner radius RE = 0.016"			
Corner radius and cutting force V_c = 330 SFM f = 0.008 ipr a_p = 0.047" Side cutting edge angle 0°			
Side cutting edge angle and cutting force V_c =330 SFM f = 0.008 ipr a_p = 0.079" Corner radius RE = 0.016"			
Side rake angle and cutting force V_c = 330 SFM f = 0.008 ipr a_p = 0.079" Side cutting edge angle 0° Corner radius RE 0.008"			

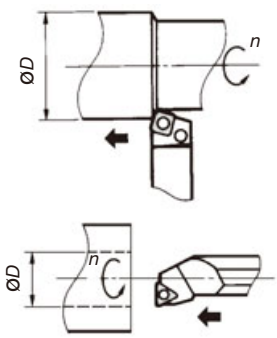
* 9.8N = 1kgf

Calculation formulas for turning

● Cutting speed

External turning

Internal turning



When calculating cutting speed from number of revolutions:

$$Vc = \frac{\pi \times \text{ø}D \times n}{3.82}$$

V_c : Cutting speed (sfm)
n : Number of revolution (rpm)
øD : Diameter of workpiece (in)
$\pi \approx 3.14$

When calculating required number of revolutions from cutting speed:

$$n = \frac{Vc \times 3.82}{\pi \times \text{ø}D}$$

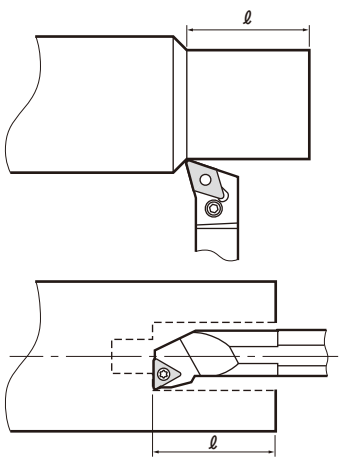
Example : Calculating the cutting speed when turning a ø6 mm-diameter workpiece at 250 rpm

$$V_c = \frac{3.14 \times 6 \times 250}{3.82} = 392 \text{ sfm}$$

● Cutting time on external and internal turning

External turning

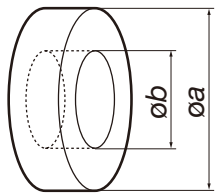
Internal turning



$$T_{(\text{min})} = \frac{\ell}{f \times n}$$

T : Cutting time (min)
ℓ : Cutting length (in)
f : Feed (ipr)
n : Number of revolution (rpm)

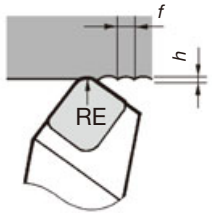
● Cutting time on face turning



$$T_{(\text{min})} = \frac{\pi \times (\text{ø}a^2 - \text{ø}b^2)}{4000 \times v_c \times f}$$

V_c : Cutting speed (sfm)
f : Feed (ipr)
T : Cutting Time (min)

● Theoretical surface roughness



$$h_{(\mu\text{m})} = \frac{f^2}{8 \times r} \times 1000$$

h : Surface roughness (µm)
f : Feed (ipr)
r : Nose radius (in) (RE)
( ) The notation in the brackets is the one used in the catalog (ISO compliant)

● Power consumption

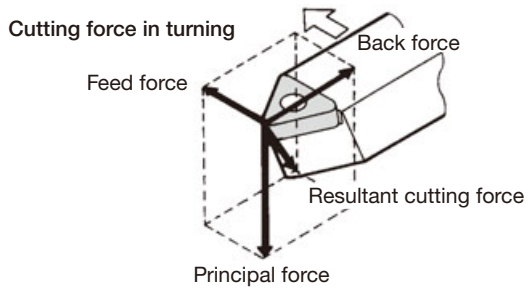
$$P_{c(\text{HP})} = \frac{F \times Vc}{33000}$$

P_c : Power requirement (HP)
F : Cutting force (N)
V_c : Cutting speed (sfm)

Turning Tools

Cutting forces

(1) Finding from the diagram based on experimental data.
(2) In case determining by simplified equation:



$$F = k_c \times a_p \times f \times 1000 \quad \text{(lb-force)}$$

F : Cutting force (lb-force)
k_c : Specific cutting force KPI (Kilo pound force)
a_p : Depth of cut (in)
f : Feed (ipr)

Example :
Calculating the cutting force when cutting a high carbon steel (1055) at f = 0.007 ipr and ap = 0.118".
$F = 499 \times 0.118 \times 0.0078 \times 1000$
= 460 lb-force

● Calculating power requirement

$$P_c \text{ (kW)} = \frac{k_c \times a_p \times v_c \times f}{33}$$

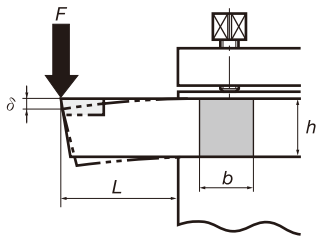
$_c$: Net power requirement (H)
k_c : Specific cutting force (KPI) [Refer to the Table below]
v_c : Cutting speed (sfm)
a_p : Depth of cutting (in)
f : Feed (ipr)

Value of specific cutting force (k_c)

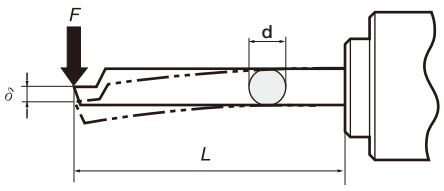
Workpiece material (JIS)	Tensile strength (PSI)	Hardness (HB)	Value of specific cutting force on feed k_c (KPI)				
			0.0016 (ipr)	0.004 (ipr)	0.008 (ipr)	0.016 (ipr)	0.039 (ipr)
SS400, S15C	56,565	100	497	412	355	302	247
S35C, S40C	85,572	170	612	506	426	363	302
S50C, SCr430	113,855	230	711	583	497	426	348
SCM440, SNCM439	142,137	300	782	640	548	470	384
SDK	225,992 (56HRC)	56HRC	1,217	996	853	725	598
FC200	(160HB)	160	370	284	236	194	149
FCD600	(200HB)	200	483	370	306	254	194
Aluminum alloy	(89HB)	89	196	164	138	117	97
Aluminum			152	126	107	93	75
Magnesium alloy			57	57	57	57	57
Brass			157	157	157	157	157

● Bending stress and tool deflection

Square shank



Round shank



Bending stress

(1) Square shank

$$S \text{ (PSI)} = \frac{6 \times F \times L \times 145}{b \times h^2}$$

(2) Round shank

$$S \text{ (PSI)} = \frac{32 \times F \times L \times 145}{\pi \times d_3}$$

Tool deflection (in)

(1) Square shank

$$\delta \text{ (in)} = \frac{4 \times F \times L^3}{E \times b \times h^3}$$

(2) Round shank

$$\delta \text{ (in)} = \frac{64 \times F \times L^3}{3 \times \pi \times E \times d_4}$$

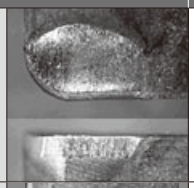
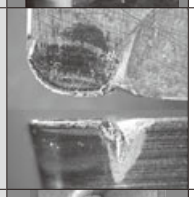
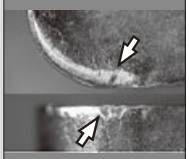
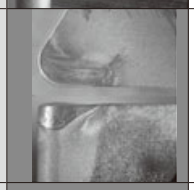
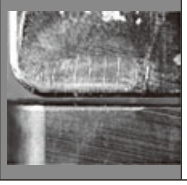
S : Bending stress in shank (PSI)
F : Cutting force (lb)
L : Overhang length of tool (in)
b : Shank width (in) : 〔B〕
h : Shank height (in) : 〔H〕
d : Shank diameter (in) : 〔DCONMS〕
E : Modulus of elasticity of shank material (lb/in²)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

(Ref.) Values of E

Material	MPa (SPI)	{kgf/mm²}
Steel	30,457,980	30,457,980
Cemented Carbide	81,221,280 ~ 89,923,560	81,221,280 ~ 89,923,560

Troubleshooting in turning

Typical tool failure		Countermeasure		
		Tool grade	Cutting conditions	
Flank wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Change to wet cutting	• Decrease honing width • Increase relief angle • Increase end cutting edge angle • Increase corner radius • Select free-cutting chipbreaker • Increase rake angle
Crater wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Change to wet cutting	• Increase rake angle • Select an appropriate chipbreaker • Increase side cutting edge angle • Increase corner radius
Notch wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed	• Increase rake angle • Increase side cutting edge angle
Fracture		• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve looseness in machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size • Increase corner radius
Chipping		• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve looseness in machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size
Flaking		• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed	• Reduce rake angle • Increase corner radius • Increase honing width
Plastic deformation		• Change to more wear resistant grade **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Reduce depth of cut • Supply cutting fluid in adequate volume	• Increase relief angle • Increase rake angle • Reduce corner radius • Reduce side cutting edge angle • Select a free-cutting chipbreaker
Chip welding		• Use a grade which has a low tendency to adhere to workpiece material **Cemented carbide → Coated carbide or cermet**	• Increase cutting speed • Increase feed • Change to water-insoluble cutting fluid • Change to wet cutting	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width
Built-up edge				
Thermal cracking		• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Change to dry cutting • Supply cutting fluid in adequate volume • Reduce depth of cut • Change to water-insoluble cutting fluid	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width

Turning Tools

Troubleshooting in turning

Problem	Cause	Countermeasure	
		Tool	Cutting conditions and others
Deteriorated surface roughness	• Increased tool wear	• Select a more wear resistant grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a larger nose radius • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Select a proper feed • Decrease the cutting speed • Use a cutting fluid
	• Edge chipping	• Use a tougher grade • Select a chipbreaker with strong cutting edges • Use a largely honed insert • Increase the side cutting edge angle • Use a larger shank size	• Decrease the depth of cut • Decrease the feed • Use a more rigid machine • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
	• Chip welding • Built-up-edge	• Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Increase the cutting speed • Increase the feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Vibration and chatter	• Use a tougher grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert • Use a larger shank size	• Use a proper cutting speed • Decrease the feed • Decrease the depth of cut • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Deteriorated dimensional accuracy	• Improper insert accuracy	• Use an insert of closer tolerance (from M class to G class)	
	• Incomplete engagement of tool and workpiece	• Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Use a more lightly honed insert	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Burr occurrence	• Unsuitable cutting speed		• Decrease the cutting speed • Increase the feed • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the relief angle • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert	
Edge breakout	• Improper cutting speed		• Decrease the feed • Decrease the depth of cut
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the side cutting edge angle • Use an insert with a larger nose radius • Use a more lightly honed insert • Use a larger shank size	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Fuzzy surface finish	• Improper cutting conditions		• Increase the cutting speed • Select a proper feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade. • Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert	

Chipbreakers

Chip controllability

Necessity of chip control

①Why is chip control needed?
②Effect of improper chip control

Necessity of chip control (Problems and effects)

Problems	Effects
1. Scattering of chips and coolant. 2. Wrapping around the workpiece and the tool. 3. Accumulation on the tool, jig, and machining facilities.	1. Disturbs unmanned and automated machining. 2. Disturbs high-speed and high-efficiency machining. 3. Degrades finished surface. 4. Threatens operator's safety. 5. Reduced operation rate.

Additional problems when chips are not properly controlled

①Why is chip control needed?

What is chip?

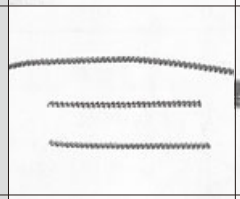
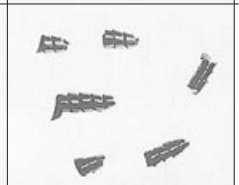
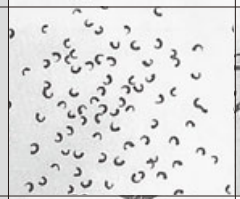
For making a product from a workpiece, removed objects produced by a tool which is set to cut to a specified depth with the relative motion of the tool and the workpiece.

Problems when chips are not properly controlled

②Effect of improper chip control

- Effects on quality → • Defective work. • Defective surface finish • Chip entangling
- Effects on operation → • Increased number of man-hours for handling. • Increased tool costs. • Troublesome chip handling. • Machine stoppage and reduced operation rate.
- Effect on safety and health. → • Stain and damage on machine caused from improper carrying-out of chips. • Dangerous effects on the human body. (Injury and burns on hand, etc.)

Effective measures → **"Chipbreaker"**

Classi-fication	Chip shape: Depth of cut: small	Chip shape: Depth of cut: large	Description of chip shape	Acceptability	Effect
Shape A			Chips irregularly entangled	Not acceptable	• Wrapping around the tool or workpiece or accumulation around the cutting point, hindering cutting • Possible damage to the machined surface
Shape B			Long continuous spiral chips $\ell > 2"$	Acceptable	• Bulky during transport in the automatic line • May be preferred when one operator handles one machine
Shape C			Short spiral chips $\ell < 2"$	Acceptable	• Smooth chip flow • Difficult to scatter • Favorable shape
Shape D			"C" or "9" shaped chips (Around one coiling)	Acceptable	• Favorable shape if not scattering • Not bulky and easy to transport
Shape E			Excessively broken chips. Thin pieces or connected in a form of wave as shown in the figure left	Not acceptable	• Readily scattering. If scattering is the only trouble, it may be acceptable because the chip cover, etc. may be used. • Tend to cause chatter, causing harm on the finished surface roughness or tool life.

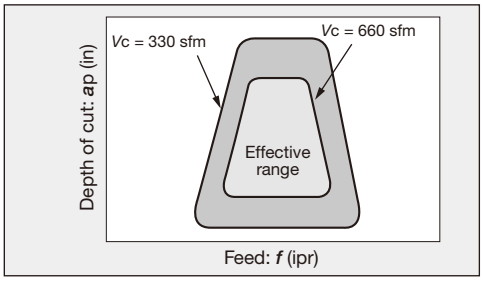
Chipbreakers

Factors affecting chip control

(1) Cutting conditions
1 Feed
2 Depth of cut
3 Cutting speed

- Of these, feed has the greatest effect followed by depth of cut and cutting speed in order listed.
- Feed is proportionate to the thickness of chips.
- Depth of cut is proportionate to the width of chips.
- There are optimum values (effective range) in feed and depth of cut.
- Cutting speed is in inverse proportion to chip thickness. Effective range becomes narrow at high speed.

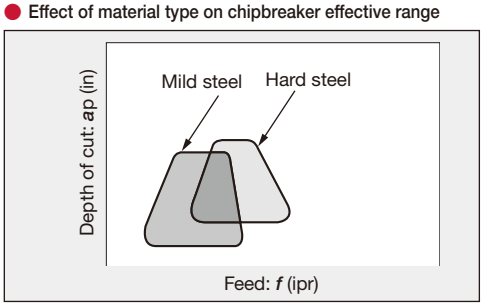
● Effect of cutting speed on chipbreaker effective range



(2) Workpiece material
1 Alloy element
2 Hardness
3 Heat treatment condition

- These are related to thickness of chips and ease of curling.
- Mild steel chips are thicker than those of hard steel.
- Hard steel chips are liable to curl more than those of mild steel.
- Chips that do not curl are thin. As an exception, in case of mild steel even if thick, may not curl.

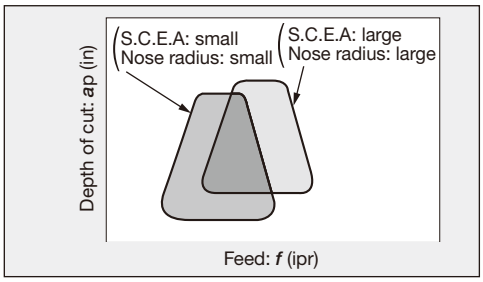
● Effect of material type on chipbreaker effective range



(3) Tool geometry
1 Side cutting edge angle
2 Nose radius

- Side cutting edge angle is relative to chip thickness and width
- Side cutting edge angle is preferably small.
- Nose radius is relative to thickness and width and the direction of flowing out.
- In finishing, small nose radius, whilst for rough cutting, large nose radius is better.

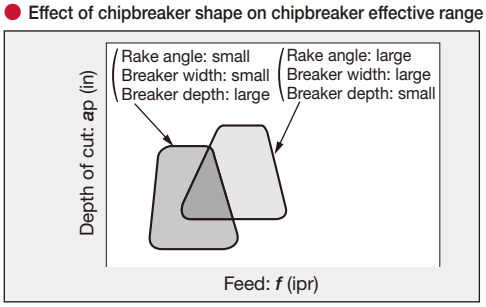
● Effect of tool geometry on chipbreaker effective range



(4) Shape of chipbreaker
1 Rake angle
2 Chipbreaker width
3 Chipbreaker depth

- Rake angle is in inverse proportion to chip thickness.
- Depending on the Workpiece material, there is an optimum value.
- Chipbreaker width is selected proportionately to feed.
- Narrow at low feed and wide at high feed.
- Chipbreaker depth is to be selected so as to be inversely proportionate to feed.
- Deep at low feed and shallow at high feed.

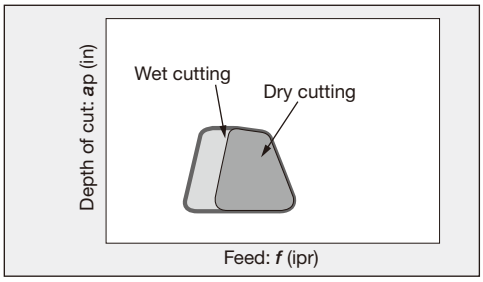
● Effect of chipbreaker shape on chipbreaker effective range



(5) Coolant

- Effective range is wider with wet cutting.
- Especially at low feed range is liable to curl.

● Effect of with/without of coolant on chipbreaker effective range



(6) Machine
1 Rigidity
2 Power limit

- The machine has enough power and mechanical strength.
- Select the machine consistent with the size of Workpiece material to be used.

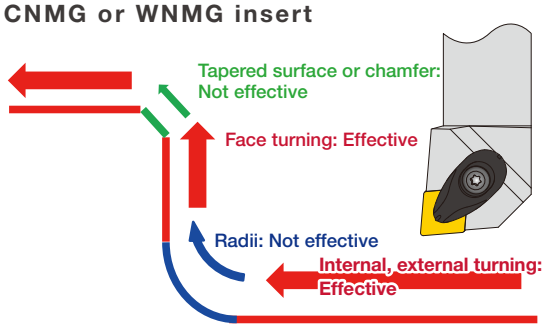
Wiper Insert

Machining program compensation for wiper -SW / -FW insert

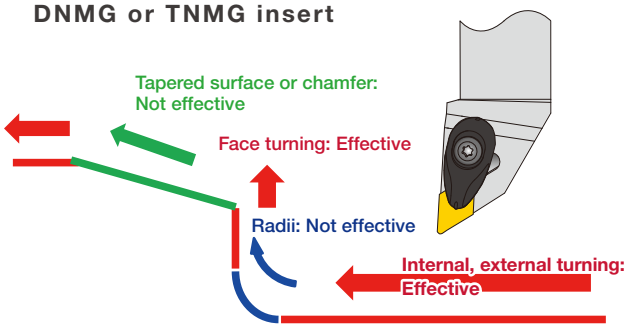
The nose radius on a wiper insert has a different configuration from that on standard ISO insert's. Machining program adjustments are, therefore, required to generate a correct offset for the wiper insert to machine the correct workpiece dimension. No compensation is needed, however, for the positive, CCMT-SW wiper insert.

Wiper effectiveness (surface finish quality improvement) by applications

CNMG or WNMG insert

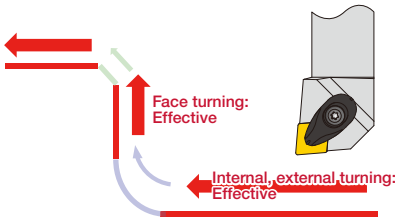
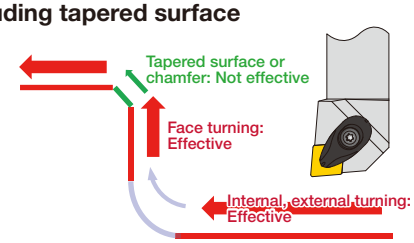
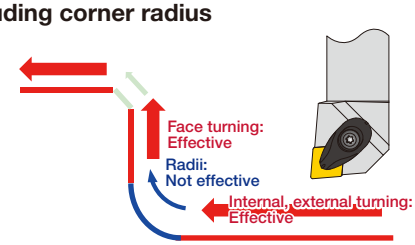
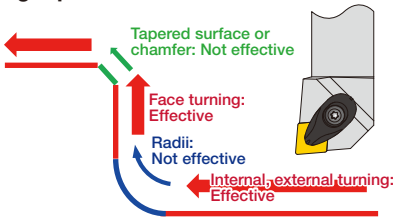


DNMG or TNMG insert



Program compensations by insert shapes and applications

Match your insert shape and application to find the proper compensation method.

Application \ Insert shape	CNMG/WNMG -SW/FW	DNMG/TNMG -SW/FW	CCMT-SW
	Type **L**	Type **J, G, F**	Type **L**
Internal, External and Face turning 	Proceed to Compensation ① (See Page L012)	Proceed to Compensation ④ (See Page L013)	No compensation needed
Including tapered surface 	Proceed to Compensation ①, ② (See Page L012)	Proceed to Compensation ④, ⑤ (See Page L013 - L014)	↑
Including corner radius 	Proceed to Compensation ①, ③ (See Page L012)	Proceed to Compensation ④ (See Page L013) Proceed to Compensationt ⑥ (See Page L014)	↑
Including tapered surface and corner radius 	Proceed to Compensation ①, ②, ③ (See Page L012)	Proceed to Compensation ④, ⑤, ⑥ (See Page L013 - L014)	↑

Wiper Insert

Compensations for CNMG / WNMG -SW / -FW

Compensations ① Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.001	0.001
R0.031	0.002	0.002
R0.047	0.002	0.002

(Unit: in)

Compensations ② Program compensations for tapered surface (proceed after ①) (in)

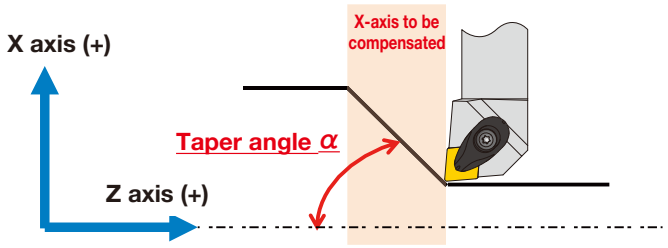
To machine tapered surfaces, compensate the nose radius position in the x-axis position to obtain the correct workpiece dimension.

Compensations for x-axis when using CNMG or WNMG-SW/-FW (Tool approach angle: L) insert

Match the insert nose radius and the angle of the surface taper to find the value in Table 1 below to compensate the x-axis position.

For **CNMG/WNMG-SW/-FW (Type L)**
Compensation values for x-axis (in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0
R0.031	0	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.005	0.005	0
R0.047	0	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.006	0.006	0



Compensations ③ Program compensation for corner radii (proceed after ①) (in)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0.002	+0.005
R0.031	0.003	+0.007
R0.047	0.003	+0.007

(Unit: in)

Compensations for DNMG / TNMG -SW / -FW

Compensations ④ Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

DNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.001
R0.031	0.009	0.002
R0.047	0.005	0.001

(Unit: in)

TNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.002
R0.031	0.008	0.002
R0.047	0.006	0.002

(Unit: in)

TNMG-SW/-FW (Type G)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.001
R0.031	0.008	0.001
R0.047	0.006	0.001

(Unit: in)

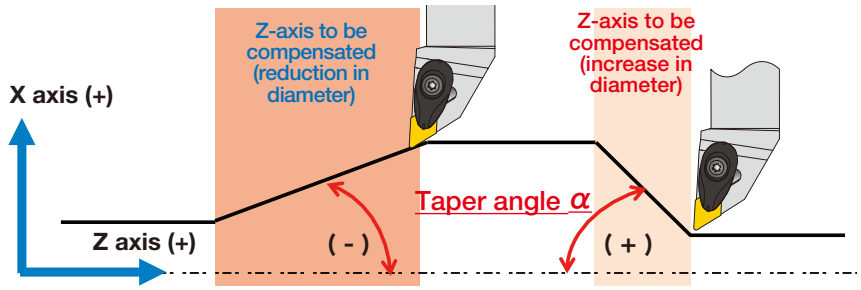
TNMG-SW/-FW (Type F)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.001	0.009
R0.031	0.001	0.008
R0.047	0.001	0.006

(Unit: in)

Compensations ⑤ Program compensations for tapered surface (proceed after ④) (in)

To machine tapered surfaces with DNMG or TNMG-SW/-FW insert, compensate both the x-axis and z-axis positions. Since these inserts are commonly used for profiling, to machine a tapered surface with a gradual reduction in diameter, the z-axis position has to be compensated in the negative direction.



Compensations for x- and z-axes when using DNMG or TNMG-SW/-FW

Match the insert nose radius and the angle of the surface taper to find the value in below to compensate the x-axis and/or z-axis positions.

For DNMG-SW/-FW (Type J)

X-axis compensation values for plus-tapered surface (increase in diameter)(in)

(Unit: in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	-0.0004	-0.0004	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0024	-0.0031	-0.0039	-0.0055	-0.0075	-0.0079	-0.0079	-0.0075	-0.0075	-0.0075	0
R0.031	0	0.0004	0.0008	0.0008	0.0012	0.0012	0.0008	0.0004	0.0000	-0.0008	-0.0020	-0.0035	-0.0059	-0.0067	-0.0059	-0.0051	-0.0047	-0.0043	0
R0.047	0	0.0008	0.0016	0.0020	0.0024	0.0028	0.0028	0.0024	0.0016	0.0008	-0.0008	-0.0035	-0.0067	-0.0075	-0.0063	-0.0055	-0.0051	-0.0059	0

Z-axis compensation values for minus-tapered surface (reduction in diameter)(in)

Nose radius (in)	Taper angle α (θ)				
	-0.984	-0.787	-0.591	-0.394	-0.197
R0.016	0.013	0.013	0.013	0.013	0.013
R0.031	0.012	0.013	0.013	0.013	0.013
R0.047	0.013	0.014	0.015	0.016	0.016

(Unit: in)

* Match the taper angle and insert nose radius to find the value in Table 2 and compensate the NC program by either adding or deducting the value.

Example:
Tapering a surface of +45° (increase in diameter) with a R0.031" insert.
Current NC program: X3.937"
Compensation value: -0.001"
Parameter after compensation: X3.936"

Wiper Insert

Compensations for DNMG / TNMG -SW / -FW

● Compensations ⑤ Program compensations for tapered surface (proceed after ④) (in)

For TNMG-SW/-FW (Type J)



X-axis compensation values for plus-tapered surface (increase in diameter) (in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0	0	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0020	-0.0028	-0.0039	-0.0055	-0.0071	-0.0098	-0.0110	-0.0110	-0.0106	-0.0106	0
R0.031	0	0.0004	0.0008	0.0012	0.0016	0.0016	0.0016	0.0012	0.0008	0	-0.0008	-0.0024	-0.0043	-0.0075	-0.0087	-0.0079	-0.0075	-0.0083	0
R0.047	0	0.0008	0.0020	0.0028	0.0031	0.0035	0.0039	0.0035	0.0031	0.0024	0.0012	-0.0008	-0.0039	-0.0087	-0.0102	-0.0098	-0.0098	-0.0122	0

(Unit: in)

Z-axis compensation value for minus-tapered surface (reduction in diameter) (in)

Nose radius (in)	Taper angle α(θ)				
	-0.984	-0.787	-0.591	-0.394	-0.197
R0.016	0.0165	0.0165	0.0165	0.0161	0.0157
R0.031	0.0138	0.0126	0.0130	0.0134	0.0130
R0.047	0.0165	0.0142	0.0150	0.0154	0.0146

(Unit: in)

For TNMG-SW/-FW (Type G)

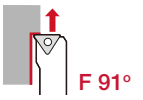


X-axis compensation values for plus-tapered surface (increase in diameter) (in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0020	-0.0028	-0.0035	-0.0047	-0.0063	-0.0087	-0.0110	-0.0114	-0.0114	-0.0114	-0.0126	0
R0.031	0	0.0004	0.0008	0.0008	0.0012	0.0008	0.0008	0.0004	-0.0004	-0.0012	-0.0024	-0.0039	-0.0067	-0.0098	-0.0098	-0.0098	-0.0110	-0.0157	0
R0.047	0	0.0012	0.0024	0.0031	0.0035	0.0039	0.0043	0.0039	0.0035	0.0028	0.0016	-0.0004	-0.0035	-0.0071	-0.0071	-0.0071	-0.0079	-0.0134	0

(Unit: in)

For TNMG-SW/-FW (Type F)



X-axis compensation values for plus-tapered surface (increase in diameter) (in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	-0.0012	-0.0020	-0.0031	-0.0039	-0.0051	-0.0051	-0.0043	-0.0039	-0.0035	-0.0031	-0.0028	-0.0024	-0.0020	-0.0020	-0.0016	-0.0012	-0.0008	0
R0.031	0	-0.0016	-0.0020	-0.0028	-0.0035	-0.0047	-0.0039	-0.0028	-0.0020	-0.0012	-0.0004	0.0004	0.0012	0.0020	0.0028	0.0035	0.0043	0.0051	0
R0.047	0	-0.0012	-0.0016	-0.0020	-0.0028	-0.0035	-0.0020	-0.0004	0.0012	0.0028	0.0043	0.0059	0.0071	0.0087	0.0098	0.0110	0.0126	0.0138	0

(Unit: in)

● Compensations ⑥ Program compensation for corner radii (proceed after ④) (in)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

DNMG-SW/-FW (Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0008	+0.0079
R0.047	0.0039	+0.0134

(Unit: in)

TNMG-SW/-FW(Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0012	+0.0051
R0.047	0.0043	+0.0142

(Unit: in)

TNMG-SW/-FW(Type G, Type F)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0008	+0.0059
R0.047	0.0035	+0.0150

(Unit: in)

Additional information on offsetting -SW / -FW wiper inserts

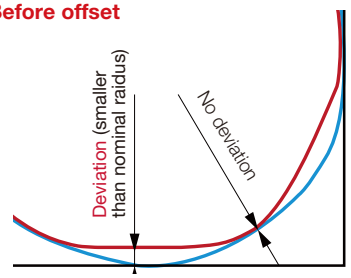
Compensations ①, ④ Tool offsets (Compensations for X- and Z-axis)

Why need to offset ?

Ex. When using DNMG433

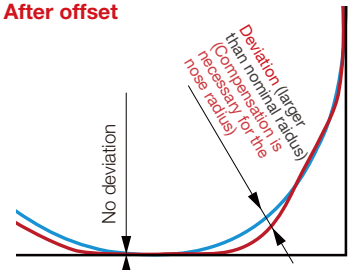
The wiper insert does not provide the exact corner radius. A deviation from the standard nose radius shape as shown below will always occur when going into a corner. An additional program adjustment is, therefore, required to achieve the correct corner radius or tapered surface dimension on the workpiece.

Before offset



Wiper nose radius' contour is slightly smaller than the nominal radius.
→ The nose radius profile deviates from the required corner radius, thus the actual corner profile will be incorrect.

After offset



Wiper nose radius' contour is partially larger than the nominal radius.
→ No compensations necessary for ID, OD, or face turning.
Meanwhile, due to these deviations, compensations to the NC program are necessary when turning corners and tapered surfaces for the correct workpiece dimensions.

Compensations ③, ⑥ Program compensation for corner radii (proceed after ①, ④) (in)

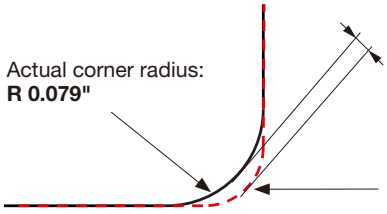
Compensation for corner radius

Ex. When using DNMG433

Example: to machine a corner radius = R0.079", using insert nose radius = R0.047".

For standard ISO insert: DNMG433-**
Input R0.8 for G2 or G3 (circular interpolation) to compensate the nose radius deviation.

Wiper insert
For wiper insert: DNMG433-SW/-FW
Input **R0.055"**(= R0.031" + 0.013" from the list) for the nose radius, instead of R0.8, to compensate the nose radius deviation.



The deviation generated when using the ISO insert parameters for the wiper insert.
0.004"

Theoretical corner radius shape when R1.2 (=nominal nose radius) is programmed for the wiper insert
The actual corner radius becomes smaller than the required radius due to the insert radius deviation.
Corner radius = R0.065"
(R0.079" - 0.013")

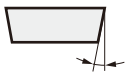
Designation system for Insert

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
G	G-shape (Tungaloy's symbol)	70°	
M	Rhombic	86°	
V		35°	
Y	Y-shape (Tungaloy's symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

❶ Shape

Note: For rhombic and parallelogram inserts, use the smaller nose angle.

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others
X	Special



❷ Relief angle

Symbol (class)	Tolerance (inch)		
	Cutting point	Thickness (S)	I.C. dia. (IC)
A	±0.0002	±0.0001	±0.0001
F	±0.0002	±0.0001	±0.0005
C	±0.0005	±0.0001	±0.0001
H	±0.0005	±0.0001	±0.0005
E	±0.001	±0.001	±0.001
G	±0.001	±0.005	±0.001
J	±0.0002	±0.001	±0.002 ~ ±0.005
K	±0.0005	±0.001	±0.002 ~ ±0.005
L	±0.001	±0.001	±0.002 ~ ±0.005
M	±0.003 ~ ±0.007	±0.005	±0.002 ~ ±0.005
N	±0.003 ~ ±0.007	±0.001	±0.002 ~ ±0.005
U	±0.005 ~ ±0.015	±0.005	±0.003 ~ ±0.01

❸ Accuracy

	❶	❷	❸	❹	❺
[Example]	T	N	M	G	3
[Example]	C	C	G	T	3

❹ Groove and hole

Symbol	Hole	Shape of hole	Chip-breaker	Shape
N	Without	-	Without	
R			Single-sided	
F			Double-sided	
A	With	Cylindrical hole	Without	
M			Single-sided	
G			Double-sided	
W		Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C J X		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	

❺ Size (I.C)

Symbol		Dimensions (in)	
Normal series	Small series	I.C.	Fraction
(1.2)	5	0.156	5/32
(1.5)	6	0.187	3/16
(1.8)	7	0.219	7/32
2	(8)	0.250	1/4
(2.5)	0	0.313	5/16
3		0.375	3/8
4		0.500	1/2
5		0.625	5/8
6		0.750	3/4
7		0.875	7/8
8		1.000	1
(10)		1.250	1-1/4

ANSI Designation

● Detailed accuracy

Corner angles larger than 55°

(in)

Inscribed circle	Tolerance on inscribed circle dia. (IC)		Tolerance on corner height (M)		Shape
	J,K,M,N (class)	U (class)	J,K,M,N (class)	U (class)	
0.250	±0.002	±0.003	±0.003	±0.005	H W O R P S T C,E,M
0.375					
0.500	±0.003	±0.005	±0.005	±0.008	
0.625	±0.004	±0.007	±0.006	±0.010	
0.750					
1.000	±0.005	±0.010	±0.007	±0.015	

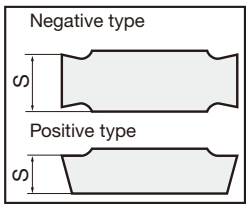
For angles at 55° (M-Class)

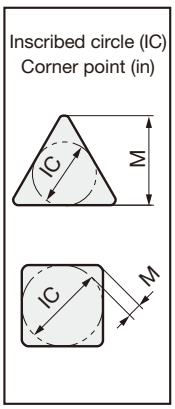
(in)

Inscribed circle	Tolerance on inscribed circle dia. (IC)	Tolerance on corner height (M)	Applicable insert shape
0.250	±0.002	±0.004	D
0.375			
0.500	±0.003	±0.006	
0.625	±0.004	±0.007	
0.750			

● **Note on insert thickness**

Thickness of insert with chpbreaker grooves is defined as shown to the right.





Symbol		Thickness (in)	
Normal series	Small series		
-	2	0.062	1/16
1.5	3	0.094	3/32
2	4	0.125	1/8
2.5	5	0.156	5/32
3	6	0.187	3/16
3.5	-	0.219	7/32
4	-	0.250	1/4
5	-	0.313	5/16
6	-	0.375	3/8



⑥ Thickness

[Example]

⑥	⑦	⑧	⑨		⑩
3	2				TM
2.5	1	F	N	-	JS

(Optional symbol) (Optional symbol)

⑦ Corner radius



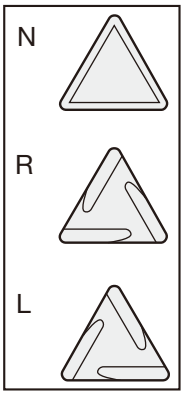
Symbol	Corner radius RE (in)	
V	0.001	-
0	0.004	1/256
0.5	0.008	1/128
1	0.016	1/64
2	0.031	1/32
3	0.047	3/64
4	0.062	1/16
5	0.078	5/64
6	0.094	3/32
7	0.109	7/64
8	0.125	1/8

⑧ Major cutting edge

Symbol	Cutting edge	Shape
F	Sharp	

⑨ Hand of insert

Symbol	Hand
R	Right
L	Left
N	Neutral



⑩

Our company's own symbols showing cutting edge conditions.
For details, refer to page B007.

Insert hole size chart

Insert hole size		
	I.C.	Diameter
Negatives	1/4	0.089
	3/8	0.150
	1/2	0.203
	5/8	0.250
	3/4	0.312
	1	0.359
	1 1/4	0.346
Positives	5/32	0.087
	3/16	0.087
	13/64	0.110
	7/32	0.094
	1/4	0.110
	5/16	0.134
	3/8	0.173
	1/2	0.217
	5/8	0.217

Designation System for ISO Inserts

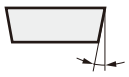
● How to decide the insert designation (conforms to JIS B4120-1998, ISO 1832 / AM1:1998)

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
G	G-shape (Tungaloy's symbol)	70°	
M	Rhombic	86°	
V		35°	
Y	Y-shape (Tungaloy's symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

① Shape

Note: For rhombic and parallelogram inserts, use the smaller nose angle.

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others
X	Special



② Relief angle

Symbol (class)	Tolerance (mm)		
	Corner height (M)	Thickness (S)	I.C. dia. (IC)
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
J	±0.005	±0.025	±0.005 ~ ±0.13
K	±0.013	±0.025	±0.05 ~ ±0.13
L	±0.025	±0.025	±0.05 ~ ±0.13
M	±0.08 ~ ±0.18	±0.13	±0.05 ~ ±0.13
N	±0.08 ~ ±0.18	±0.025	±0.05 ~ ±0.13
U	±0.13 ~ ±0.38	±0.13	±0.08 ~ ±0.25

③ Accuracy

	①	②	③	④	⑤
[Example]	T	N	M	G	16
[Example]	C	C	G	T	09

④ Groove and hole

Symbol	Hole	Shape of hole	Chip-breaker	Shape
N	Without	-	Without	
R			Single-sided	
F			Double-sided	
A	With	Cylindrical hole	Without	
M			Single-sided	
G			Double-sided	
W		Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	Special			

⑤ Cutting edge length and I.C. symbol

* R		S		C		W		T		D		V		K		I.C. dia.
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	
		03	3.97	03	4.0			06	6.9	04	4.8					3.97
		04	4.76	04	4.8			08	8.2	05	5.8	08	8.3			4.76
05	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
		05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56
06	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
		06	6.35	06	6.5	04	4.3	11	11	07	7.8	11	11.2			6.35
		07	7.94	08	8.1	05	5.4	13	13.8	09	9.7					7.94
08	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525
10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
12	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1			12.7
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875
16	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3					19.05
20	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20
		22	22.225	22	22.6			38	38.5	27	27.1					22.225
25	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25
25	25.4	25	25.4	25	25.8			44	44	31	31					25.4
31	31.75	31	31.75	32	32.2			55	55	38	38.8					31.75
32	32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32

*When M0 is included in Designation, the inscribed-circle diameter is metric size. (mm)

● Detailed accuracy for J,K,L,M,N and U classes

For inserts with nose corner angles larger than 55°

(mm)

Inscribed circle	Tolerance on inscribed circle dia. (IC)		Tolerance on corner height (M)		Applicable insert shape
	J,K,L,M,N (class)	U (class)	J,K,L,M,N (class)	U (class)	
6.35	±0.05	±0.08	±0.08	±0.13	H W O R P S T C,E,M
9.525					
12.7	±0.08	±0.13	±0.13	±0.2	
15.875	±0.1	±0.18	±0.15	±0.27	
19.05					
25.4	±0.13	±0.25	±0.18	±0.38	
31.75	±0.15	±0.25	±0.2	±0.38	
32					

For M-type inserts with nose corner angles of 55° (Shape: D), 35° (Shape: V), 25° (Shape: Y)

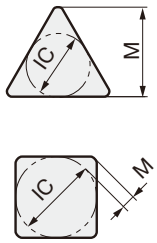
(mm)

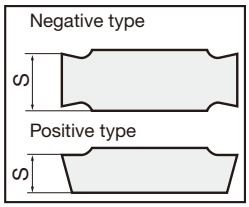
Inscribed circle	Tolerance on inscribed circle dia. (IC)	Tolerance on corner height (M)	Applicable insert shape
6.35	±0.05	±0.11	D
9.525			
12.7	±0.08	±0.15	
15.875	±0.1	±0.18	
19.05			
6.35	±0.05	±0.16	V
9.525			Y

● Insert thickness

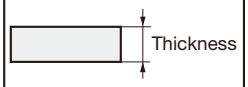
For many of the inserts with chipbreaker, the insert height of the cutting edge is lower. In that case, the insert thickness outlined in the drawing of external dimensions is equivalent of "S" in the figure on the right.

Inscribed circle (IC)
Corner height (M)





Symbol	Thickness (mm)
X1	1.39
01	1.59
T1	1.98(1.79)
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52



⑥ Thickness

[Example]

⑥	⑦				⑩
04	08			-	TM
T3	04	F	N	-	JS
⑥	⑦	⑧	⑨		⑩

(Optional symbol) (Optional symbol) (Supplementary symbol)

⑦ Corner radius



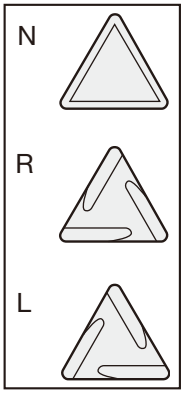
Symbol	Corner radius RE (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2
24	2.4
28	2.8
32	3.2

⑧ Major cutting edge

Symbol	Cutting edge	Shape
F	Sharp	
E	Rounded	
W.T	Chamfered	
S	Combination	

⑨ Hand of insert

Symbol	Hand
R	Right
L	Left
N	Neutral



⑩ Chipbreaker

Symbol	Applications	Symbol	Applications
01 (TF)	Precision finishing (Basic selection)	AFW	Small depth of cut and high feed (Wiper type Inserts)
TS	Finishing (Basic selection)	ASW	Small depth of cut and high feed (Wiper type Inserts)
TSF	Finishing (Basic selection)	CB	Medium cutting
TM	Medium cutting (Basic selection)	CM	Medium cutting of cast irons
THS	Medium to heavy cutting (Basic selection)	All-round	Medium cutting
TRS	Medium to heavy cutting	A	Finishing (Right and left hand)
TUS	Heavy cutting	B	Finishing (Right and left hand)
DM	Medium cutting	C	Finishing (Right and left hand)
HRF	Finishing	D	Finishing (Right and left hand)
HRM	Finishing to medium cutting	P	Finishing of Aluminum alloys
HMM	Finishing to medium cutting	W	Finishing (Angular type)
SF	Finishing of stainless steels	PSF	Finishing (Positive type)
SS	Finishing of stainless and mild steels	PSS	Finishing to light cutting (Positive insert)
SM	Medium cutting of stainless steels	PS	Finishing to medium cutting (Positive type Basic selection)
S	Medium cutting of stainless steels	PM	Medium cutting (Positive type)
SH	Medium to heavy cutting of stainless steels	AL	Finishing to medium cutting of aluminium alloys
SA	For heat-resisting alloys and stainless steels	RS	Medium cutting (For round inserts)
ZF	Finishing and profiling	W□□	Finishing (Angular type)
ZM	Finishing to medium cutting and profiling	H□□	Finishing to medium cutting (Parallel)
NS	Finishing and profiling	11	Finishing
NM	Finishing to medium cutting and profiling	61	Small depth of cut and high feed (For round inserts)
AS	Small depth of cut and high feed	S1	Finishing (For KNMX type)
TA	Medium cutting	J08,J10	For small lathes
TQ	Medium cutting	JS	For small lathes
AM	Small depth of cut and high feed	JRP	For small lathes
FW	Finishing (Wiper type)	JPP	For small lathes
SW	Finishing to medium cutting (Wiper type)	JSP	For small lathes

Designation system for Toolholders

A,C	Clamp-on
D	Double clamp ("One Double")
E	Eccentric pin lock
M	Multi-clamp
P	Pin-lock
S	Screw-on
T	Taper-lock
W	Wedge-on

1 Clamping system

Symbol	Shape	Offset
A	90°	Without
B	75°	Without
C	90°	Without
D	45°	Without
E	60°	Without
F	91°	Without
G	91° / 91°	With
J	93°	With
K	75°	With
L	95° / 95°	With
N	63°	Without
P	62.5°	Without
Q	45°	With
R	75°	Without
S	45°	With
V	72.5°	Without
X*	100°	With
Y	80°	With

*mark: Tungaloy's symbol

3 Cutting edge style

(Example) **1 A** **2 C** **3 L** **4 N**

2 Insert shape

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
W	Trigon

4 Relief angle of insert

C	0°
B	5°
C	7°
D	15°
E	20°
P	11°

ANSI Designation

10	0.625	0.625	4.500
12	0.750	0.750	4.500
64	0.750	1.000	8.000
66	0.750	1.250	8.000
16	1.000	1.000	6.000
85	1.000	1.250	6.000
86	1.000	1.500	7.000
20	1.250	1.250	7.000
24	1.500	1.500	7.000
32	2.000	2.000	14.000
No.	Width	Height	Length

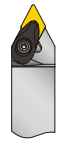
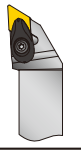
⑦ Toolholder shank size (in)

S = Single wall pocket construction. full pocket construction when letter position is Vacant

⑥ Pocket style

⑤	⑥	⑦		⑧
R	S	16	-	4

⑤ Hand of tool

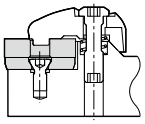
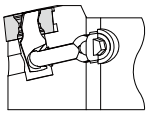
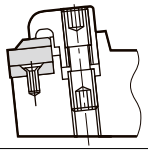
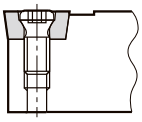
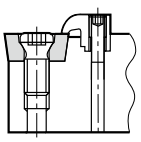
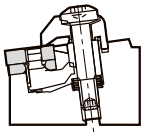
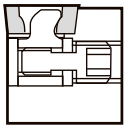
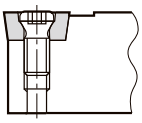
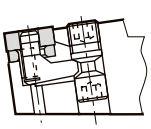
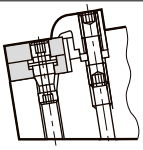
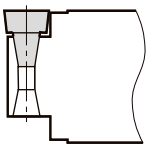
L	
N	
R	

⑨ Insert size I.C.

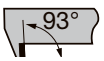
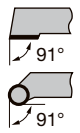
Symbol	Inscribed circle (in)
3	0.375
4	0.500
5	0.625
6	0.750

Designation System for External Toolholders

① Clamping system

A Double Clamping		JP Side lever clamping			
C Clamp-on		JS Screw-on		X Double Clamping	
D One-Double		JT Side clamping		S Screw-on	
P Lever-lock		M Multi clamping		T Taper-lock	

③ Cutting edge style

Symbol	Shape	Offset					
A	 90°	Without	H	 100°	With	P *	 117.5°	Without
			I	 76.5°	Without	Q *	 45°	With
			J	 93°	With	S	 45°	With
B	 75°	Without	J2 *	 93°	Without	V	 72.5°	Without
C	 90°	Without	K	 75°	With	U	 93°	With
D	 45°	Without	L	 95° 95°	With	X	 100°	With
E		Without	L2 *	 95° 95°	Without	Y	 80°	With
F	 91°	With	N	 63°	Without	Z	 93°	Without
G	 91° 91°	With	N3 *	 63°	With	No mark: ISO symbol *mark: Tungaloy's symbol		
			P *	 62.5°	Without			

(Example) A W L N R

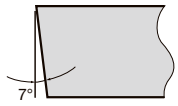
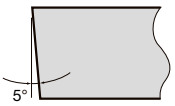
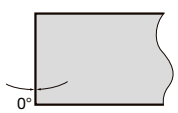
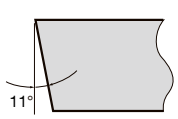
(Example) P T G N R

① ② ③ ④ ⑤

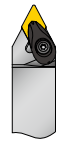
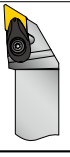
② Insert shape

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
W	Trigon

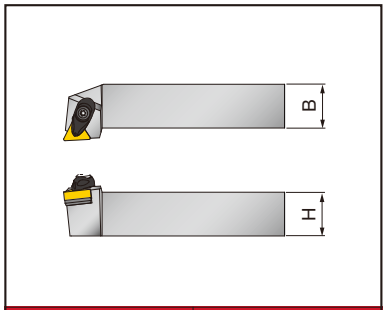
④ Relief angle of insert

C	 7°
B	 5°
N	 0°
P	 11°

⑤ Hand of tool

L	
N	
R	

ISO Designation

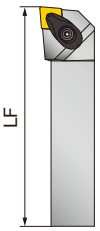


⑥ Height: H (mm) | ⑦ Width: B (mm)

Shank size

F	80
F	85*
H	100
X	120
K	125
M	150
P	170
Q	180
R	200
S	250
T	300
U	350

*MiniForceTurn



⑧ Holder length

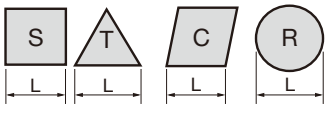
RD	Ceramic insert with dimple
C	For ceramic insert
A	Turning A

⑪ Added symbol

⑥	⑦	⑧			⑪
25	25	M	08	-	A
20	20	K	3		3
			⑨		⑩

⑨ Insert size

Symbol	Inscribed circle (mm)
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4



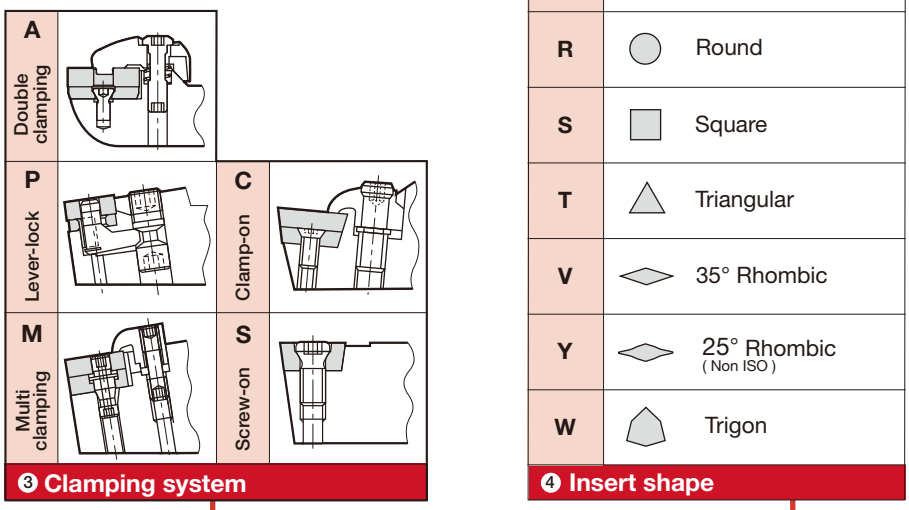
In the ISO metric system, edge length of inserts is expressed by L in 2 digits.

⑩ Insert thickness

Symbol	Thickness (mm)
2	3.18
3	4.76



Designation system for Toolholders



A **10** - **S** **C**

❶ ❷ ❸ ❹

❶ Bar composition

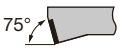
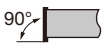
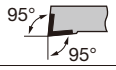
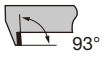
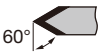
A	Steel shank with oil hole
E	Carbide shank with steel head & oil hole
C	Carbide shank with steel head
S	Steel shank

❷ Bar diameter (in)

06	0.375
08	0.500
10	0.625
12	0.750
16	1.000
20	1.250

Metric: The diameter of the bar is shown in mm.

ANSI Designation

Symbol	Style	Offset	Symbol	Style	Offset	Symbol	Style	Offset
A	 90°	Without	G	 91°	With	S	 45°	With
				 91°		V	 72.5°	Without
			J	 93°	With	U	 93°	With
B	 75°	Without	K	 75°	With	X *	 100°	With
C	 90°	Without	L	 95° 95°	With	Y	 80°	With
D	 45°	Without	N	 63°	Without	Z	 93°	Without
E	 60°	Without	P *	 62.5°	Without	Note *mark: Tungaloy standard No mark: ISO standard		
F	 91°	With	Q *	 45°	With			

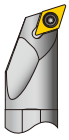
5 Cutting edge style

N	0°
B	5°
C	7°
D	15°
E	20°
P	11°

6 Relief angle of insert

5	6	7	8		9
L	C	R	3	-	D14

7 Hand of tool

R	
L	
N	Neutral

8 Insert size I.C.

Symbol	Inscribed circle (in)
3	0.375
4	0.500
5	0.625
6	0.750

9 Min. bore diameter (in)

Stream Jet Bar	
D14	14/16 (ø0.875)

Designation System for Internal Toolholders

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
Y	25° Rhombic (Non ISO)
W	Trigon

⑤ Insert shape

A	Double clamping		
P	Lever-lock	C	Clamp-on
M	Multi clamping	S	Screw-on

④ Clamping system

A 12 M - S T

① ② ③ ④ ⑤

① Bar composition

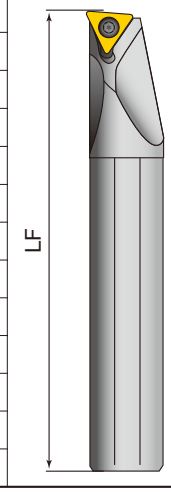
A	Steel shank with oil hole
E	Carbide shank with steel head & oil hole
C	Carbide shank with steel head
S	Steel shank
T	Steel shank reinforced with carbide plates (“Tsuppari-Ichiban”)
JS	J series Steel shank

② Bar diameter

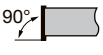
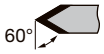
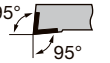
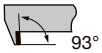
Bar diameter is shown in mm.

③ Toolholder length (mm)

F	80
G	90
H	100
J	110
K	125
L	130
M	150
P	170
Q	180
R	200
S	250
T	300
U	350

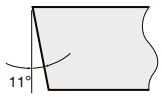


ISO Designation

Symbol	Style	Offset
A		Without
B		Without
C		Without
D		Without
E		Without
F		With
G		With
J		With
K		With
L		With
N		Without
P*		Without
Q*		With
S		With
V		Without
U		With
X*		With
Y		With
Z		Without

Note
*mark: Tungaloy standard
No mark: ISO standard

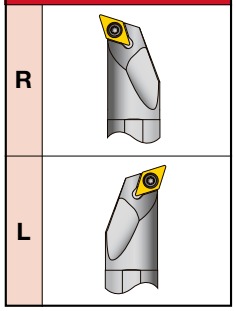
6 Cutting edge style

C	
B	
N	
P	
X	Special

7 Relief angle of insert

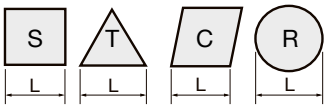
6 U **7** P R **8** 11 **9** 02 C **10** - **11** D140

8 Hand of tool



9 Insert size

For M, S, & C types conformed to ISO



"In ISO metric system, a two digit number indicates the edge length (L) of the insert to be used in mm.
If the insert thickness is different for the same edge length, add the thickness symbol (S) (two digit number).

In above example, TP□□1102□□

10 Oil hole

Only "Tsuppari-Ichiban" holder

11 Min. bore diameter (mm)

Stream Jet Bar		Tsuppari-Ichiban	
D140	ø14	D14	ø14

Designation System for CBN / PCD Inserts

CBN Insert

Regular type

T 2 QP - CNGA120404 -L

① ② ③ ④ ⑤

① "T" means 10 pieces per package.

② Number of corners

③ Type

QP	Flat-brazed type inserts
QS	WavyJoint

④ ISO symbol

⑤ Special feature & chipbreaker

Without, SR	Standard cutting edge	SP	Standard cutting edge (MiniForce-Turn)
F	Sharp edge	-HP	With chipbreaker
-L	Excellent wear resistance	-HS	With chipbreaker
-LF	Lower cutting force, superior sharpness	-HF	With chipbreaker
-LC	Excellent crater wear resistance	-HM	With chipbreaker
-H, HC	Excellent fracture resistance	W	With wiper
-E	Lower cutting force	W□	With wiper
LT	For smooth machining with lower cutting force		

Regrindable type

TNGA 330.5 - QBN

① ②

① ANSI symbol

② CBN inserts

For TUNGCUT

S G N 200 - 020 -S

① ② ③ ④ ⑤ ⑤

① Number of edge

S	Single corner

② Application

G	Grooving
T	Turning•Grooving

③ For use

N	Non breaker
H	High feed

④ Groove width (mm)

200	2

⑤ Corner radius: RE (mm)

020	0.2

⑤

Without	Lower cutting force
-S, -SR	Standard cutting edge
-H	Excellent fracture resistance

For XG R/L

XG R 63 15 S - QBN

① ② ③ ④ ⑤

① For grooving tool GX-type

② Hand of Insert

L	Left
R	Right

③ Groove width (mm)

10	1
15	1.5

④ Corner radius: RE (mm)

S	0.2

⑤ CBN inserts

For TUNGTHREAD

1 QP - 16 E R 60 - 014 -SP

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Number of corners

② Type

QP	Flat-brazed type inserts

③ Type

16	9.525

④ Internal/ External

E	External

⑤ Hand of Insert

R	Right

⑥ Thread profile

60	60°

⑦ Corner radius: RE (mm)

014	0.14

⑧ Special feature & chipbreaker

-SP	Standard cutting edge (TungThread)

PCD Insert

Regular type

1 **QP** - **CCGT 32.50.5** **-NS**

① Number of corners

② Type

QP	Flat-brazed type inserts

③ ANSI symbol

⑧ Special feature & chipbreaker

-NS	With chipbreaker

Regrindable type

TPGW 21.51 **DIA**

① ANSI symbol

② PCD inserts

For DUOJCUT

JX **D** **X** **12** **R** **20** **F**

① For grooving tool JSXX-type

② Application

D	Turning and deep grooving

② Chipbreaker style

X	General purpose

④ Insert size (mm)

12	ø12
16	ø16

⑤ Hand of Insert

R	Right

⑥ Groove width (mm)

20	2
25	2.5

⑦ Special feature & chipbreaker

F	Sharp edge

CBN Inserts

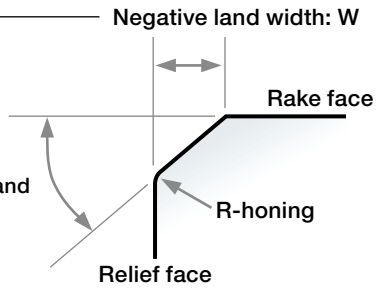
Edge preparation specifications

CBN inserts with special edge preparation specifications are made to order. Refer to the following description.

Designation system for edge specifications

Example:
Negative land width: 0.13 mm
Negative land angle: -25°
With R-honing

S	0	1	3	2	5
Shape	Negative land width: W			Negative land angle: α	



T … Chamfered
S … Chamfered + R-honing
E … R-honing alone
F … Sharp edge

● Standard edge specifications

Grade	BXA10	BXA20	BR35F	BXM10	BXM20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX910	BX930
Negative insert	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	S01315
Positive insert	S01325	S01325	S01325	S01325	S01325	–	S00515	S00515	S00515	–	T01315	S00515	S01315	S00515

5 edge preparation options covering various hard turning

● Edge preparations turning applications

Negative land angle → Large

Negative land width: Wide

W (in) \ α	15°	25°	35°
0.002	LF	-	LC
0.005	L	Standard SR	-
0.007	-	-	H HC

BXA10, BXA20, BR35F inserts

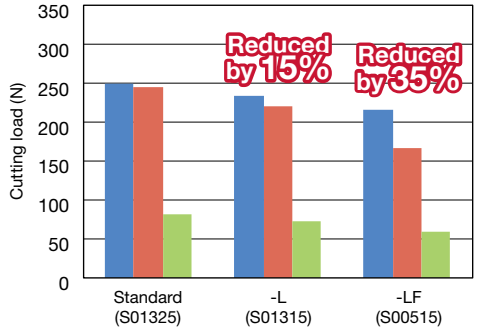
● Selections of edge preparations

Allows you to select the most suited types of edge prep for your applications

	Problem	Solution
SR Standard (S01325)	Generates burrs	LF (S00515)
	Generates flank wear	L (S01315)
	Generates crater wear	LC (S00535)
	Generates fractures	H, HC (S01835)

● Cutting loads

The -L and -LF provide reduced cutting loads over the standard edge prep type

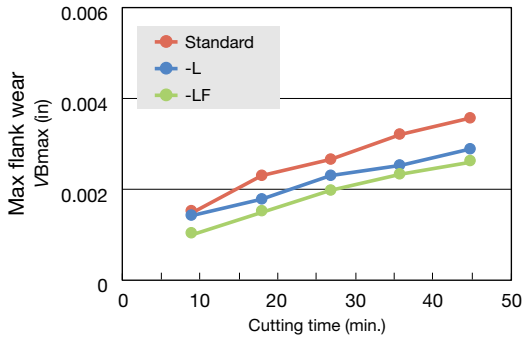


H

Insert : 2QP-CNGA 432
Workpiece material : 4140 (Alloy steel, 60HRC)
Cutting speed : *Vc* = 328 sfm
Feed : *f* = 0.012 ipr
Depth of cut : *ap* = 0.008"
Coolant : Dry

● Flank wear

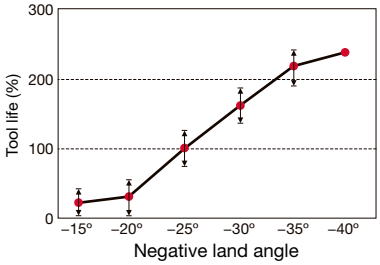
The -L and -LF provide reduced flank wear over the standard edge prep type



H

Insert	: 2QP-CNGA 432
Workpiece material	: 4140 (Alloy steel, 60HRC)
Cutting speed	: *Vc* = 427 sfm
Feed	: *f* = 0.006 ipr
Depth of cut	: ap = 0.008"
Coolant	: Wet

Relationship between negative land angle and tool life in interrupted turning

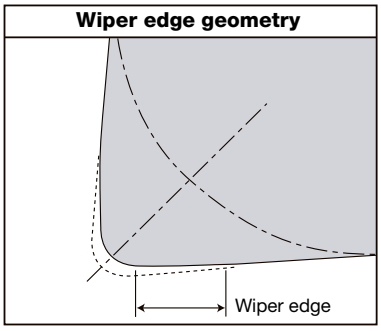


Insert	: TNGN 331 QBN BX270
Edge preparation	-□□°+ R-honing
Workpiece material	: 4140 (Alloy steel, 60HRC)
Cutting speed	: *Vc* = 328 sfm
Feed	: *ap* = 0.01"
Depth of cut	: Dry
Coolant	

•For interrupted cutting, large negative land angle is favorable to minimize fracture.

Wiper insert

● A finishing edge (wiper edge) is formed at the point of intersection between corner radius and straight cutting edge.



• Effect of wiper edge

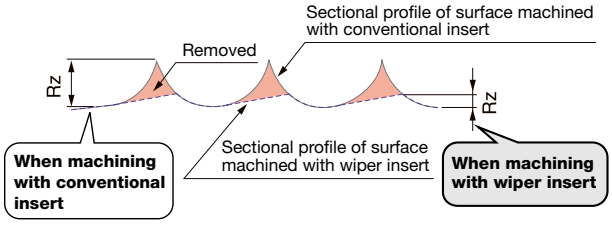
● Doubles the productivity → Reduced machining time

The wiper edge can double the feed rate and moreover does not deteriorate the surface roughness. (Note: Feed rate: *f < 0.3 mm/rev)

● Superior surface roughness → By integrating roughing and finishing into one process, productivity can be increased.

Compared with conventional inserts only with corner radius, surface roughness can be improved with the wiper edge.

■ Profiles of surface roughness



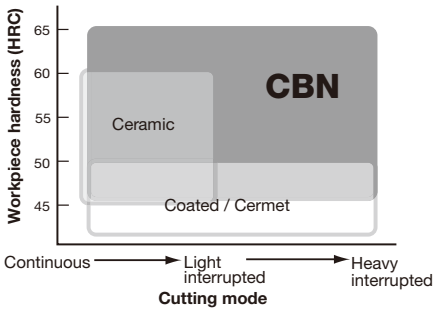
■ Recommended toolholders for wiper inserts

	2QP-CNGA 43* FW	3QP-WNGA 43* FW	2QP-DNGA 43*-WJ	3QP-TNGA 33*-WG
End cutting angle	95°		93°	91°
External toolholder	ACLNR/L**4-A	AWLNR/L**4-A	ADJNR/L**4-A	ATGNR/L**3-A ATFNR/L**3-A
	DCLNR/L**12	DWLNR/L**08	DDJNR/L**15	DTGNR/L**16 DTFNR/L**16
Internal toolholder	A**-ACLNR/L4-D...	A**-AWLNR/L**4-D...	A**-ADUNR/L4-D...	A**-ATFNR/L3-D...

CBN Grades

H CBN series for hardened steel and hard material

Application area



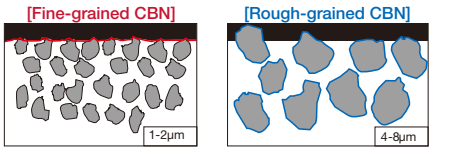
Necessity of CBN grades

The condition necessary to cut the work

Material is:
Hardness of tool ≥ Hardness of tool X 3

● Hardened steel (60HRC) →700 Hv ● Cemented carbide →1600 Hv
● CBN (BX360) →3300 Hv

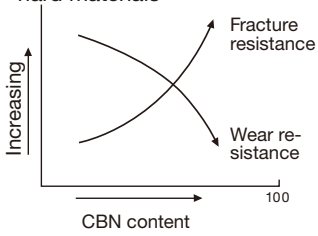
Relation of CBN grain size, surface roughness, and cutting speed



Fine grained CBN provided with sharp cutting edge.
Good surface roughness

Rough grained CBN. CBN particles are hold firmly.
Allows high speed machining

● Features of CBN grades for machining hardened steel and other hard materials



Fewer CBN content ⇨ Increasing wear resistance
Much CBN content ⇨ Increasing impact resistance

Basic selection of CBN grades in machining of hardened steel and hard material

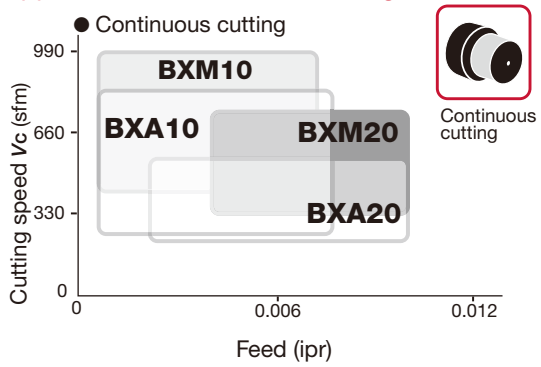
● Coated CBN grades

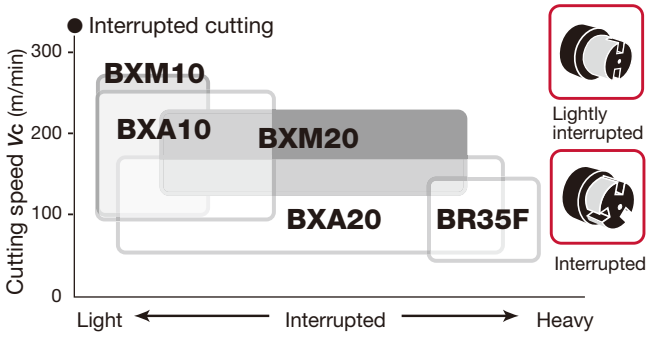
BXA10 For continuous and light interrupted cutting
BXA20 For general purpose, less than *Vc* = 590 sfm
BR35F For Interrupted cutting
BXM10 For high speeds cutting
BXM20 For general purpose, more than *Vc* = 590 sfm

● Uncoated CBN grades

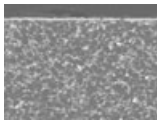
BX310 For high speeds / Priority on wear resistance in continuous cutting
BX330 For medium speeds / Priority on surface quality
BX360 For low to medium speeds / General purpose grade with excellent fracture resistance
BX380 For low to medium speeds / Priority on fracture resistance in heavy interrupted cutting

Application area of coated CBN grades





Effects of Coated CBN grades



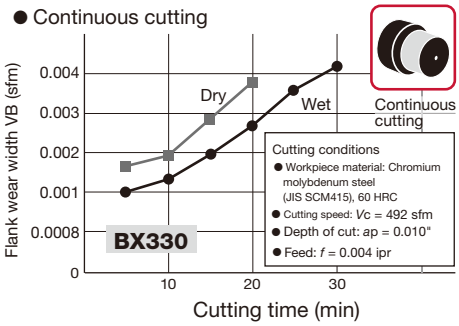
Coated on hard CBN
Hardness:
CBN > Coating layer

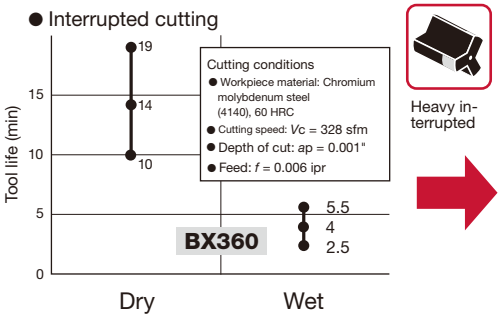
● **Protect CBN from oxidation wear**
Since the coating layer intercepts air, oxidation wear of CBN can be prevented.

● **Peeling of coating layer can be prevented**
Hard and deformation resistant CBN is excellent substrate material.

Improved resistance to flank wear

Effects of coolant in machining of hardened steel



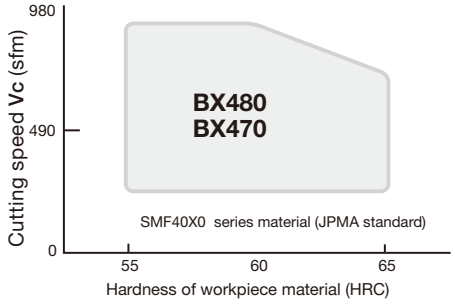


- In continuous cutting, wet cutting is superior to dry cutting in tool life for wear.
- In interrupted cutting, dry cutting is superior to wet cutting in tool life for fracture.

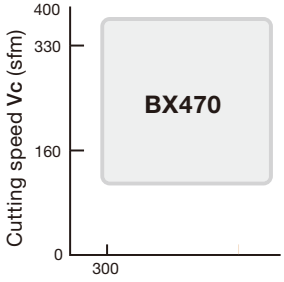
Sintered metal CBN series for sintered metal

■ Application area

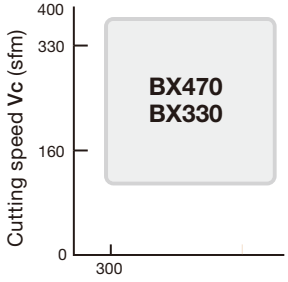
● Ferrous Sintered metal



● Valve seat (Plunge cutting)



● Valve seat (Traverse cutting)

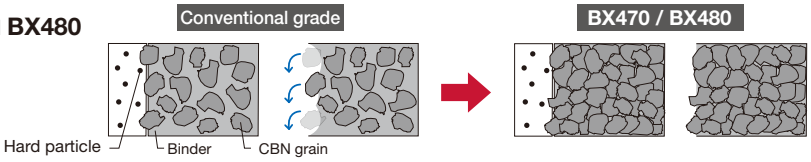


BX470
Priority on burr prevention and surface finish

BX480
Priority on wear resistance and versatility

Features of BX470 and BX480

● Machining of sintered metal with hard particles



Binder phase are selectively worn away by hard particles.
⇨ Wear proceeds with falling-out of CBN grains,

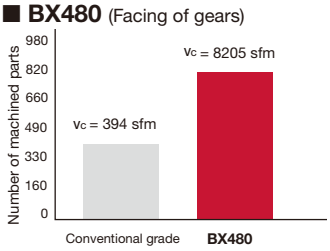
By increasing CBN content, wear of binder layer is suppressed.
⇨ Improved wear resistance

● Features of **BX470** and **BX480**

CBN content: 95 vol%
Hv = 4100 ~ 4300

The world highest CBN content as a commercially available material.

■ BX480 (Facing of gears)



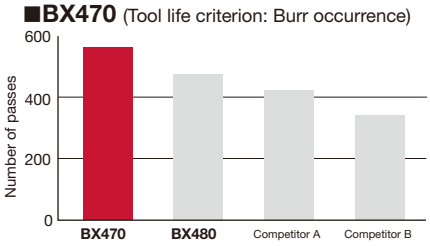
Cutting conditions
- Workpiece material: Sintered metal (> HRA60)
- Insert: DCMW11T308
- Depth of cut: **ap** = 0.008" ~ 0.020"
- Feed : **f** = 0.003 ipr
- Coolant : Water soluble type
- Interrupted cutting

■ BX470/BX480 Tool failure after machining sintered metal



Cutting conditions
- Workpiece material: Sintered metal (> HRA60), Nitriding, Hard particles included
- Cutting speed: **Vc** = 361 sfm
- Depth of cut: **ap** = 0.006"
- Feed: **f** = 0.004 ipr
- Coolant : Water soluble type
- Interrupted cutting

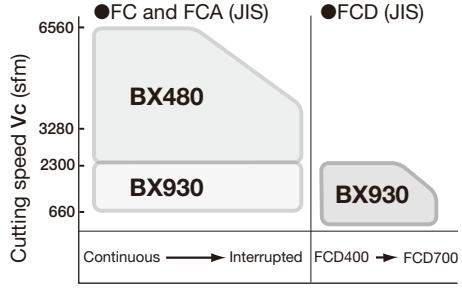
■ BX470 (Tool life criterion: Burr occurrence)



Cutting conditions
- Workpiece material: Ferrous Sintered metal
- Cutting speed: **Vc** = 328 sfm
- Depth of cut: **ap** = 0.006" ~ 0.012"
- Feed: **f** = 0.003 ~ 0.010 ipr
- Dry and interrupted cutting

K CBN series for grey cast iron and ductile cast iron

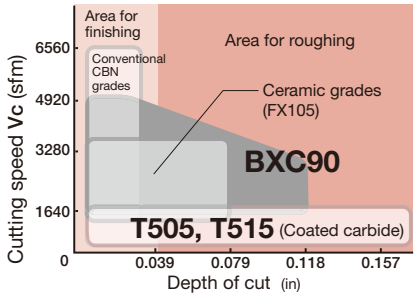
■ Application area



BX480
· General purpose, first choice grade.

BX930
· Dedicated grade for machining ductile Cast iron

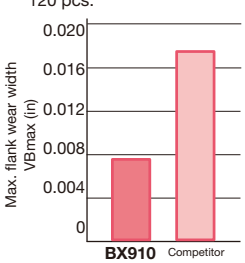
● FC Solid coated CBN grades



BXC90
· One-piece solid structure
· Applicable for small to large depths of cut

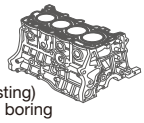
■ Machining of cylinder liners (Machining example of **BX910**)

●Wear width after machining 120 pcs.



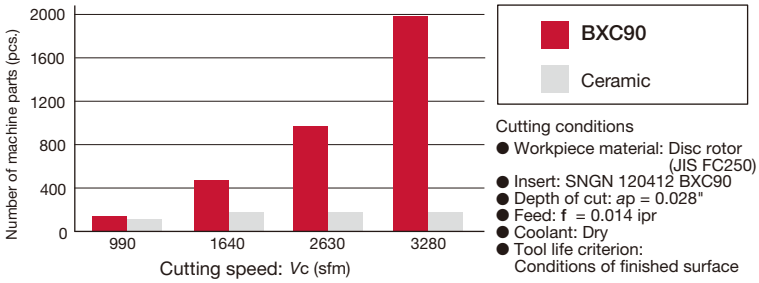
●Tool failure after machining 120 pcs.





Cutting conditions
- Workpiece material: Cylinder liner (Spin casting) Machining type: Finish boring
- Cutting speed: **Vc** = 3,281 sfm
- Machine: Special purpose machine
- Coolant: Wet

■ Tool life comparison in machining of disc brakes

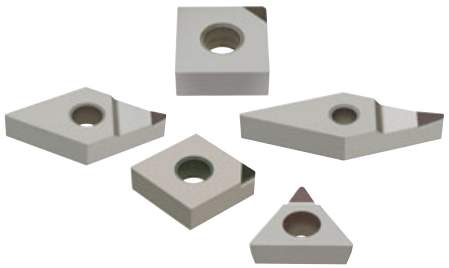


Cutting conditions
- Workpiece material: Disc rotor (JIS FC250)
- Insert: SNGN 120412 BXC90
- Depth of cut: ap = 0.028"
- Feed: f = 0.014 ipr
- Coolant: Dry
- Tool life criterion: Conditions of finished surface

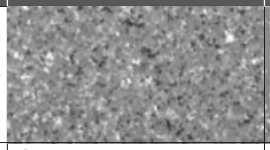
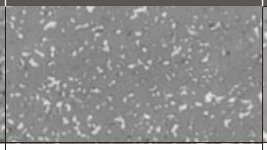
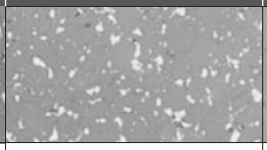
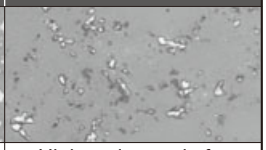
BX910 For machining cylinder liners

PCD grade, DIA series

Expanded product line allows DIA tools to be applied to wider workpiece materials and cutting conditions.

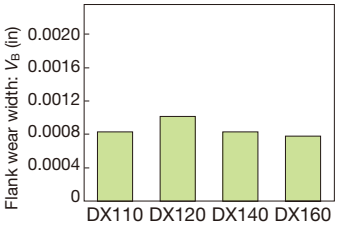


Features and applications (Physical and mechanical properties)

	DX110	DX120	DX140	DX160
Grade				
Property	Super fine grained grade. Excels in surface finish.	Fine grained grade. Excels in surface finish.	General purpose grade	High purity grade for hard materials
Approx. grain size of diamond (μm)	< 1	5	13	28
Hardness (Hv)	8500 →			10000 (Harder)
Wear resistance	→			Higher
Grindability (Cutting edge sharpness)	Better ←			

Cutting performance (Wear resistance)

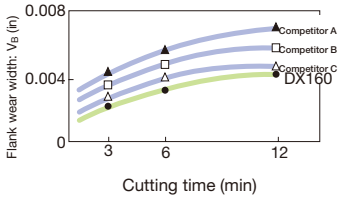
When machining aluminium alloy:



Continuous external turning

- Workpiece material: 10 % Si, aluminum alloy
- Insert: SPGN120308-DIA
- Toolholder: CSBPR2525M4
- Cutting speed: v_c = 1,640 sfm
- Feed: f = 0.004 ipr
- Depth of cut: a_p = 0.020"
- Coolant: Dry cutting
- Cutting time: 30 min

When machining FRP:



Face milling

- Workpiece material: Fiber reinforced plastics (FRP)
- Insert: SFCN42ZFN-DIA
- Milling cutter: THF4408RIA
- Cutting speed: v_c = 3,091 sfm
- Feed: f = 0.004 ipr
- Depth of cut: a_p = 0.059"
- Coolant: Dry cutting

Grade selection guide

First choice
Excellent finish
DX110

Suitable for finishing aluminum alloys and copper alloy

Good electrical discharge machinability

Complex shape tools
DX120

High diamond content compared to DX110. Suitable for high-speed machining

High speed machining
DX140

Ideal for machining hard materials
Suited for machining bi-metal (ex.aluminum+cast iron) components

High wear resistance
DX160

STANDARD CUTTING CONDITIONS

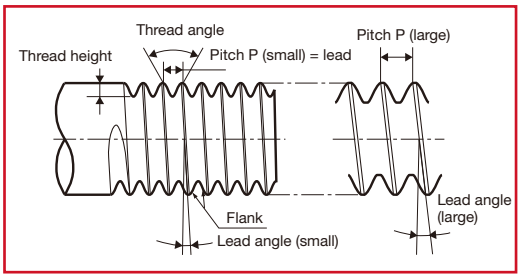
ISO	Workpiece material	Grade DX110	DX120	DX140	DX160	Cutting speed v_c (sfm)	Depth of cut a_p (in)	Feed f (ipr)
N	Aluminum alloys (Si < 12 %)	◎	○	○		4921 (3281 - 8202)	0.020 (0.002 - 0.079)	0.004 (0.002 - 0.008)
	Aluminum alloys (Si ≥ 12 %)	◎	○	○	○	1969 (1312 - 2625)	0.020 (0.002 - 0.079)	0.004 (0.002 - 0.008)
	Copper, brass	◎	○			2625 (1640 - 4921)	0.020 (0.002 - 0.079)	0.004 (0.002 - 0.008)
	Phosphor bronze	◎	○	○		1312 (984 - 1640)	0.020 (0.002 - 0.079)	0.004 (0.002 - 0.008)
	Carbon, graphite		○	○	◎	1312 (984 - 1640)	0.020 (0.002 - 0.079)	0.004 (0.002 - 0.008)
	FRP		○	○	◎	2297 (1640 - 3281)	0.008 (0.002 - 0.020)	0.002 (0.001 - 0.004)
	Plastics	◎	○	○		2297 (1640 - 3281)	0.008 (0.002 - 0.020)	0.001 (0.0004 - 0.002)
	Cemented carbides			○	◎	49 (33 - 66)	0.004 (0.002 - 0.008)	0.001 (0.0004 - 0.002)
	Green ceramics			○	◎	427 (328 - 492)	0.020 (0.002 - 0.079)	0.002 (0.001 - 0.004)

(Note) ◎ : First choice ○ : Second choice

Fundamentals of screw threads

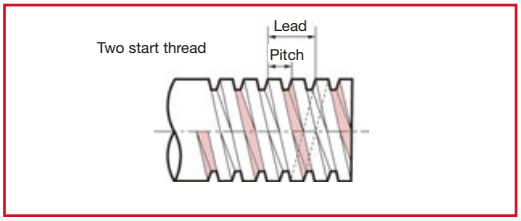
Relationship between lead, lead angle and pitch

1. Lead is the axial distance a screw advances in one rotation. In single start screw, the lead is equal to the pitch.
2. The inclination angle of a threaded groove is called lead angle. In screws of the same diameter, the lead angle increases as the pitch increases.
3. The side face of a completed thread groove is called flank. The distance between the crest and the root is called thread height.



Single and multi start thread

1. The single start thread has a single groove. Two start thread or three start thread has two grooves or three grooves respectively.
2. The pitch of multi start thread is the distance of adjoining groove.
3. When viewing the section of the multi start thread, the pitch is same as that of the single start thread. The lead of the two or three start thread is twice or three times the pitch. The multi start thread is mainly used for trapezoidal threads.



Tolerance class of threads

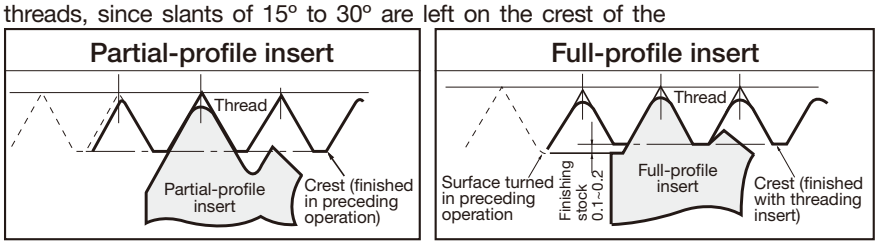
Tolerance classes of screw threads are expressed as follows:
Metric coarse external thread: 6h, 6g Metric coarse internal thread: 5H, 6H
These classes are ranked with tolerances of thread diameter, pitch, thread angle, etc. For fastening applications, 6H- and 6g-class (former JIS second class) threads, manufactured by cutting or rolling, are generally used. 5H- and 4h-class threads (former JIS first class) are generally finished by grinding.
For example, M8-6g means metric coarse external thread of 6g tolerance class.

TAC threading insert

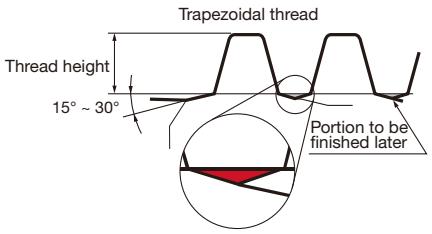
Difference between full-profile and partial-profile insert

Full-profile insert

In the full-profile insert, the major diameter of the thread is finished by the profiled finishing edge as shown in Figure below. Therefore, about 0.1 mm of finishing stock must be left on the outer surface of the workpiece before threading. In trapezoidal threads, since slants of 15° to 30° are left on the crest of the thread as shown in Figure below, these portions must be finished by another tool later.
Full-profile insert could produce no burr and good thread by the profiled finishing edge.



When machining trapezoidal threads:



Partial-profile insert

Partial-profile inserts can not be used for finishing of the crest, but can be applied to a wide range of pitches.

For example

Designation	Pitch (mm)	TPI	Insert radius RE (mm)
16ERA60	0.5 ~ 1.5	48 ~ 16	0.06
16ERG60	1.75 ~ 3	14 ~ 8	0.22

Corner radii of inserts are fitted to the thread of the smallest pitch.

Difference between external and internal use inserts

In full-profile inserts for metric and unified threads, the corner radius and thread height differ from those for the external and internal use insert respectively. Therefore, the right hand insert for external use and the left hand insert for internal use are not the same tool.
Since the rake angles of toolholders are -10° for external toolholders and -15° for internal toolholders, the external / internal toolholders can not be used for machining internal / external thread.
In Whitworth thread, though the external thread and internal thread have the same thread form, the external and internal toolholders are incompatible because of the different rake angle.

For example

Designation	Applicable inserts	Insert radius R RE (in)	Thread hight (in)	Rake angle of holders
16ER20ISO	External	0.010	0.060	-10°
16IL20ISO	Internal	0.006	0.051	-15°

Shim replacement method of ST-type tools

Compensated lead angle of tool and tool relief angle

When the pitch is large or the screw diameter is small, the lead angle becomes large and the effective relief angle on the advance flank side β_2 becomes small. In particular, this will cause shorter life of the insert in the case of trapezoidal screw with small flank angle. It is ideal without any interference for the thread cutting insert to have an equal relief angle on both right and left. Replace the shim so that the rake face of insert faces the thread groove direction (that is, $\beta = \beta_3$).

Calculating the thread lead angle

The thread lead angle is calculated as follows:

$$\beta = \tan^{-1}(\ell / \pi d) = \tan^{-1}(nP/\pi d)$$

β : Thead lead angle
ℓ : Lead
n : No. of threads
P : Pitch
d : Pitch diameter

Calculating the relief angle of tool

The relief angle β_1 is calculated as follows:

$$\beta_1 = \tan^{-1}(\tan\theta \cdot \tan\alpha)$$

The α of a standard toolholder is 10° for external threading and 15° for internal threading.

Included angle 2θ	θ	β_1	
		External threading tool	Internal threading tool
60°	30°	5.8°	8.8°
55°	27.5°	5.2°	7.9°
30°	15°	2.7°	4.1°
29°	14.5°	2.6°	4°

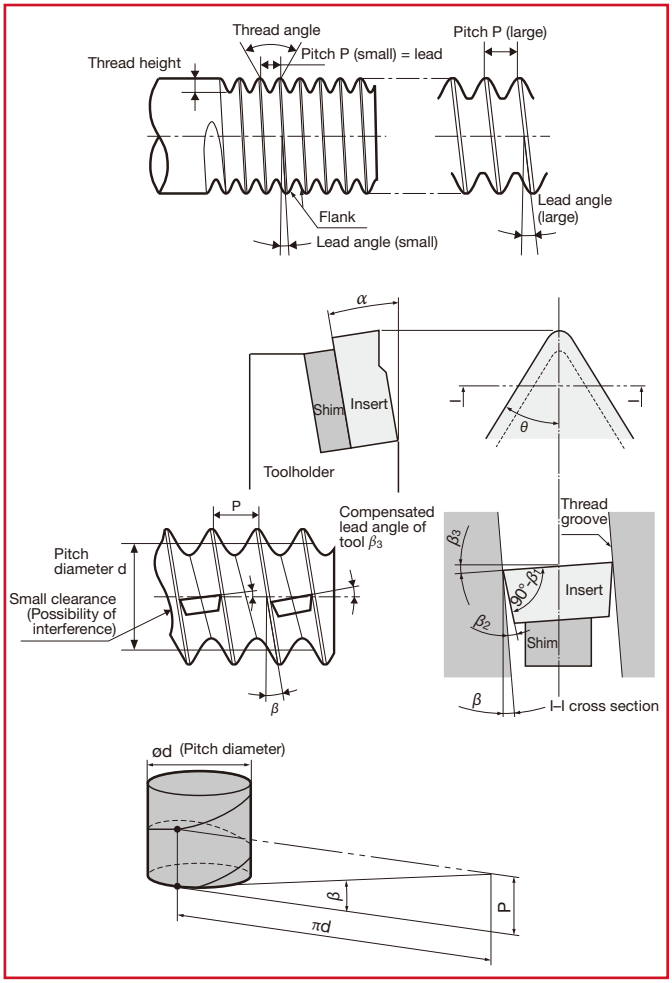
Accordingly, the effective relief angle is calculated as follows:

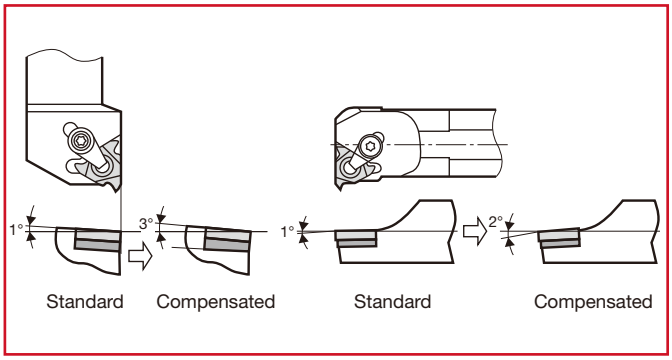
$$\beta_2 = \beta_1 + \beta_3 - \beta$$

β : Thread lead angle
β_2 : Effective relief angle of tool
β_3 : Compensated lead angle of tool

In other words, $\beta_1 = \beta_2$ when the thread lead angle is equal to the compensated lead angle of tool. Namely, the relief angle of the tool itself is equal to the effective relief angle. If the wrong compensated lead angle is used, $\beta_1 > \beta_2$. The effective relief angle becomes smaller and cause the interference between the frank side of insert and the thread groove. Therefore, carry out compensation of the lead angle so that the following range is obtained:

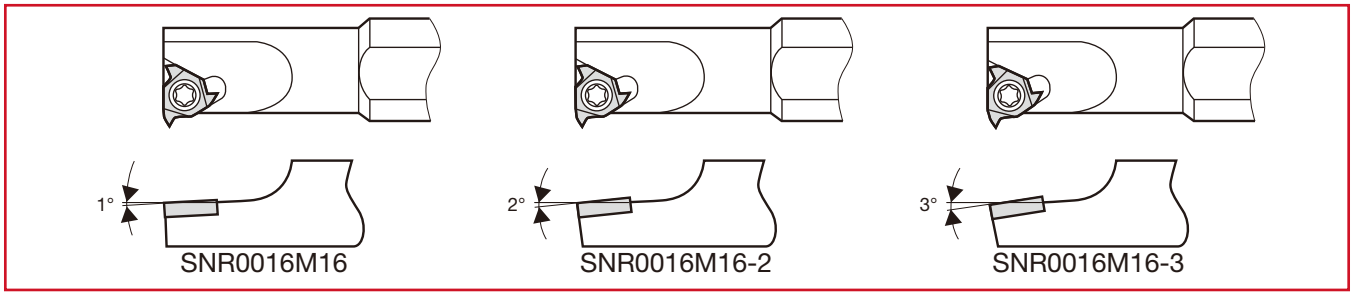
±1° when the thread angle is 60° and 55°
±0.5° when the thread angle is 30° and 29°





Compensation of lead angle for shim less internal toolholders

When using internal threading toolholders without shim, the above-mentioned method can not be applied for lead angle compensation. Therefore, special toolholders for large lead angles are available as shown below. The final figure of the designation (-2 or -3) indicates 2° or 3° lead angle to be used respectively. For the toolholders without these figures, please check GAMP of toolholders by catalog.



Type of shim and compensated lead angle of tool

The designation of the shim and compensated lead angles of tool are shown in the table.

Compensated lead angles of tool β3	-2°	-1°	0°	1°	2°	3°	4°
Shim	□□□-98	□□□-99	□□□-0	□□□-1	□□□-2	□□□-3	□□□-4

Note: The last numeral of the shim designation is the compensated lead angle.v

■ Toolholders and applicable shims

Shim replacement method of ST-type tools

Screw-on / clamp-on dual toolholders

Toolholder designation	Shim	
	R	L
CER/L □□□□□ 16DT	AE16-□DT	AN16-□DT
CER/L □□□□□ 22DT	GXE22-□DT	GXN22-□DT
TCNR/L □□□□□ 16DT	AN16-□DT	AE16-□DT
TCNR/L □□□□□ 22DT	GXN22-□DT	GXE22-□DT

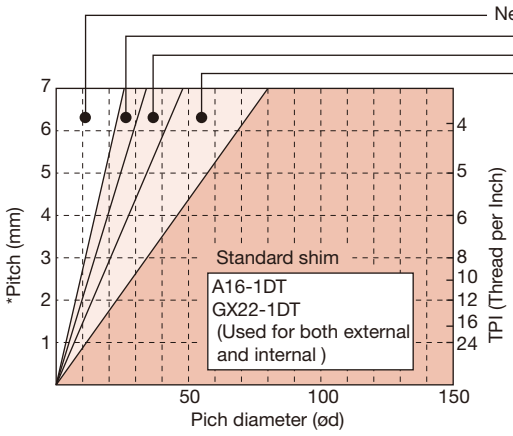
Note: Standard shim is AE16-1DT or GX22-1DT. Other types are optional.

Clamp-on type toolholders

Toolholder designation	Shim	
	R	L
CER/L □□□□□ 16-T	AE16-□	AN16-□
CER/L □□□□□ 22-T	NXE22-□	NXN22-□
CER/L □□□□□ 27-T	NXE27-□	NXN27-□
CNR/L □□□□□ 16	AN16-□	AE16-□
CNR/L □□□□□ 22	NXN22-□	NXE22-□
CNR/L □□□□□ 27	NXN27-□	NXE27-□
B-CER/L □□□ 16	AE16-□	AN16-□

Note: Standard shim is □□□□□-1. Other types are optional.

■ Shim selection guide for screw-on / clamp-on dual ST-type tools

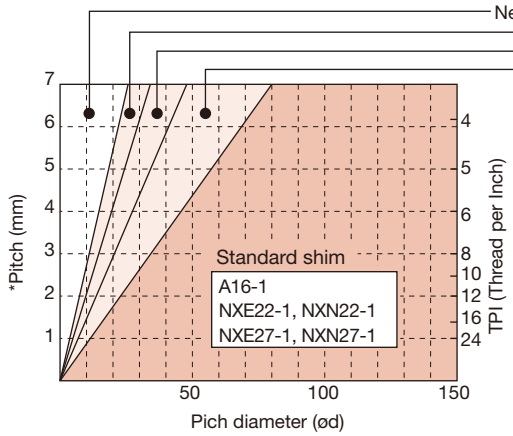


* For the multi start thread lead (multiplied by the pitch and No. of threads)

● **List of exchangeable shims**

	Designation	D30	Designation	D30	Designation	D30	Designation	D30
β3 = 4°	AE16-4DT	●	AN16-4DT	●	GXE22-4DT	●	GXN22-4DT	●
β3 = 3°	AE16-3DT	●	AN16-3DT	●	GXE22-3DT	●	GXN22-3DT	●
β3 = 2°	AE16-2DT	●	AN16-2DT	●	GXE22-2DT	●	GXN22-2DT	●
β3 = 1° Standard shim	A16-1DT	●	A16-1DT	●	GX22-1DT	●	GX22-1DT	●
β3 = 0°	AE16-0DT	●	AN16-0DT	●	GXE22-0DT	●	GXN22-0DT	●
β3 = -1°	AE16-99DT	●	AN16-99DT	●	GXE22-99DT	●	GXN22-99DT	●
β3 = -2°	AE16-98DT	●	AN16-98DT	●	GXE22-98DT	●	GXN22-98DT	●
Applicable toolholders	CER--16DT TCNL--16DT		CEL--16DT TCNR--16DT		CER--22DT TCNL--22DT		CEL--22DT TCNR--22DT	

■ Shim selection guide for clamp-on type ST-tools



* For the multi start thread lead (multiplied by the pitch and No. of threads)

● **List of exchangeable shims**

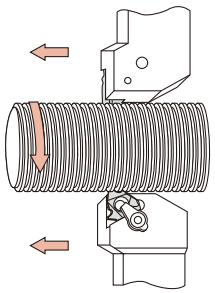
	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30
β3 = 4°	AE16-4	●	AN16-4	●	NXE22-4	●	NXN22-4	●	NXE27-4		NXN27-4	
β3 = 3°	AE16-3	●	AN16-3	●	NXE22-3	●	NXN22-3	●	NXE27-3		NXN27-3	
β3 = 2°	AE16-2	●	AN16-2	●	NXE22-2	●	NXN22-2	●	NXE27-2		NXN27-2	
β3 = 1° Standard shim	A16-1	●	A16-1	●	NXE22-1	●	NXN22-1	●	NXE27-1	●	NXN27-1	●
β3 = 0°	AE16-0	●	AN16-0	●	NXE22-0	●	NXN22-0	●	NXE27-0		NXN27-0	
β3 = -1°	AE16-99	●	AN16-99	●	NXE22-99	●	NXN22-99	●	NXE27-99		NXN27-99	
β3 = -2°	AE16-98	●	AN16-98	●	NXE22-98	●	NXN22-98	●	NXE27-98		NXN27-98	
Applicable toolholders	CER--16T CNL--16 B-CER--16		CEL--16T CNR--16 B-CEL--16		CER--22T CNL--22		CEL--22T CNR--22		CER--27T CNL--27		CEL--27T CNR--27	

● : Line up

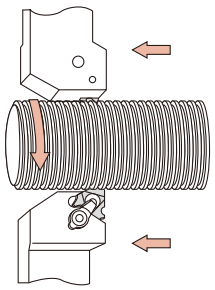
Threading Methods and Combinations

External threading

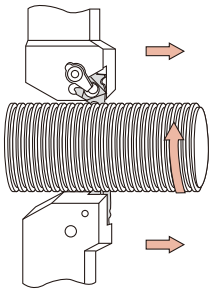
Right hand thread



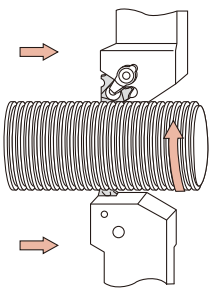
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

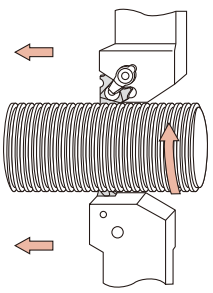


Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①

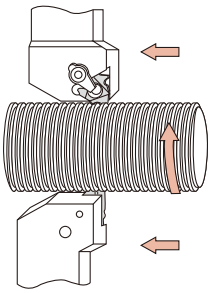


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

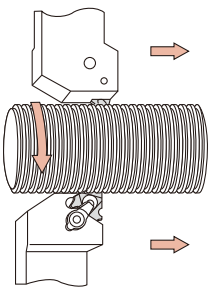
Left hand thread



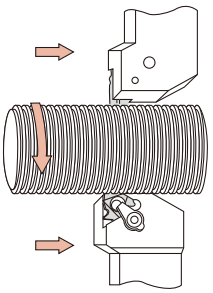
Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③



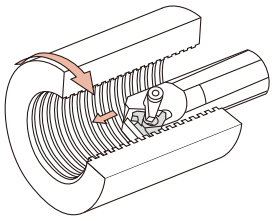
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



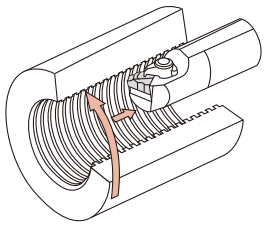
Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③

Internal threading

Right hand thread

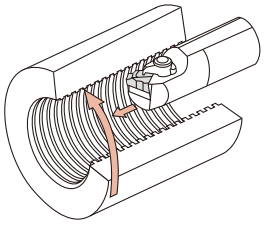


Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	②

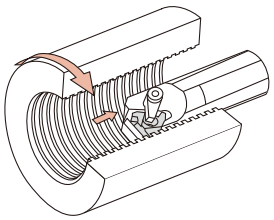


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	③

Left hand thread



Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	④

Standard shim

No.	New	No.	New
①	A16-1DT	②	A16-1DT
	A16-1		A16-1
	GX22-1DT		GX22-1DT
	NXE22-1		NXN22-1
	NXE27-1		NXN27-1
③	AE16-99DT	④	AN16-99DT
	AE16-99		AN16-99
	GXE22-99DT		GXN22-99DT
	NXE22-99		NXN22-99
	NXE27-99		NXN27-99

Infeed per Pass and Number of Passes

ISO metric full-profile inserts (for external)

Pitch		0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread		0.32	0.47	0.63	0.79	0.95	1.11	1.27	1.58	1.9	2.21	2.53	2.85	3.16	3.48	3.8
Total depth of cut		0.42	0.57	0.73	0.89	1.05	1.21	1.37	1.68	2	2.31	2.63	2.95	3.26	3.58	3.9
Number of passes	1	0.15	0.18	0.25	0.25	0.3	0.3	0.3	0.3	0.35	0.35	0.4	0.4	0.45	0.5	0.5
	2	0.12	0.12	0.2	0.2	0.25	0.25	0.25	0.25	0.3	0.3	0.35	0.35	0.35	0.35	0.4
	3	0.1	0.12	0.13	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.3	0.3	0.3	0.3
	4	0.05	0.1	0.1	0.14	0.15	0.16	0.2	0.23	0.2	0.25	0.25	0.25	0.25	0.25	0.25
	5		0.05	0.05	0.1	0.1	0.15	0.15	0.2	0.2	0.21	0.2	0.2	0.25	0.23	0.25
	6				0.05	0.05	0.1	0.12	0.15	0.15	0.2	0.2	0.2	0.2	0.2	0.2
	7						0.05	0.1	0.15	0.15	0.15	0.15	0.2	0.2	0.2	0.2
	8							0.05	0.1	0.15	0.15	0.15	0.15	0.18	0.15	0.15
	9								0.05	0.1	0.15	0.15	0.15	0.15	0.15	0.15
	10									0.1	0.1	0.13	0.15	0.15	0.15	0.15
	11									0.05	0.1	0.1	0.15	0.13	0.15	0.15
	12										0.05	0.1	0.1	0.1	0.15	0.15
	13											0.1	0.1	0.1	0.15	0.15
	14											0.05	0.1	0.1	0.1	0.15
	15												0.1	0.1	0.1	0.1
	16												0.05	0.1	0.1	0.1
	17													0.1	0.1	0.1
	18													0.05	0.1	0.1
	19														0.1	0.1
	20														0.05	0.1
	21															0.1
	22															0.05
	23															
	24															

(Unit: mm)

ISO metric full-profile inserts (for internal)

Pitch		0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread		0.29	0.43	0.58	0.72	0.87	1.01	1.16	1.45	1.74	2.03	2.32	2.61	2.9	3.19	3.48
Total depth of cut		0.39	0.53	0.68	0.82	0.97	1.11	1.26	1.55	1.84	2.13	2.42	2.71	3	3.29	3.58
Number of passes	1	0.08	0.1	0.14	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.35	0.35	0.4	0.4
	2	0.07	0.09	0.13	0.13	0.16	0.18	0.18	0.22	0.22	0.25	0.25	0.25	0.25	0.25	0.25
	3	0.07	0.08	0.11	0.12	0.14	0.16	0.17	0.2	0.2	0.22	0.22	0.22	0.22	0.22	0.22
	4	0.06	0.08	0.1	0.11	0.12	0.14	0.16	0.18	0.18	0.2	0.2	0.2	0.2	0.2	0.2
	5	0.06	0.07	0.08	0.1	0.12	0.12	0.14	0.16	0.16	0.18	0.18	0.18	0.2	0.2	0.19
	6	0.05	0.06	0.07	0.09	0.1	0.1	0.12	0.15	0.15	0.16	0.18	0.18	0.18	0.18	0.18
	7		0.05	0.05	0.07	0.08	0.09	0.1	0.1	0.14	0.14	0.16	0.16	0.16	0.16	0.17
	8				0.05	0.05	0.07	0.08	0.1	0.13	0.13	0.14	0.14	0.14	0.14	0.16
	9						0.05	0.06	0.08	0.12	0.12	0.14	0.14	0.14	0.14	0.15
	10							0.05	0.06	0.1	0.11	0.12	0.12	0.13	0.13	0.14
	11								0.05	0.08	0.1	0.12	0.12	0.13	0.13	0.14
	12									0.06	0.1	0.1	0.12	0.12	0.13	0.13
	13									0.05	0.07	0.1	0.11	0.12	0.12	0.13
	14										0.05	0.09	0.1	0.12	0.12	0.13
	15											0.07	0.1	0.11	0.12	0.12
	16											0.05	0.09	0.1	0.12	0.12
	17												0.08	0.1	0.1	0.12
	18												0.05	0.1	0.1	0.1
	19													0.08	0.1	0.1
	20													0.05	0.1	0.1
	21														0.08	0.1
	22														0.05	0.1
	23															0.08
	24															0.05

(Unit: mm)

Unified full-profile inserts

		For external							For internal						
TPI		24	20	18	16	14	12	8	24	20	18	16	14	12	8
Height of thread		0.67	0.8	0.89	1.01	1.15	1.34	2.01	0.61	0.74	0.82	0.92	1.05	1.23	1.84
Total depth of cut		0.77	0.9	0.99	1.11	1.25	1.44	2.11	0.71	0.84	0.92	1.02	1.15	1.33	1.94
Number of passes	1	0.25	0.25	0.28	0.3	0.3	0.3	0.35	0.2	0.2	0.2	0.2	0.25	0.25	0.3
	2	0.22	0.2	0.23	0.25	0.25	0.25	0.3	0.16	0.16	0.18	0.18	0.2	0.2	0.25
	3	0.15	0.16	0.18	0.18	0.23	0.21	0.25	0.12	0.13	0.15	0.16	0.18	0.18	0.22
	4	0.1	0.14	0.15	0.15	0.18	0.18	0.22	0.1	0.12	0.14	0.14	0.16	0.16	0.2
	5	0.05	0.1	0.1	0.1	0.14	0.15	0.2	0.08	0.1	0.1	0.11	0.13	0.13	0.18
	6		0.05	0.05	0.08	0.1	0.12	0.2	0.05	0.08	0.1	0.1	0.1	0.1	0.16
	7				0.05	0.05	0.1	0.16		0.05	0.05	0.08	0.08	0.1	0.14
	8						0.08	0.16				0.05	0.05	0.08	0.12
	9						0.05	0.12						0.08	0.12
	10							0.1						0.05	0.1
	11							0.05							0.1
	12														0.05
	13														
	14														

(Unit: mm)

Whitworth full-profile inserts

		For external									For internal								
TPI		20	19	18	16	14	12	11	10	8	20	19	18	16	14	12	11	10	8
Height of thread		0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08	0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08
Total depth of cut		0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18	0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18
Number of passes	1	0.25	0.28	0.3	0.3	0.3	0.3	0.3	0.35	0.35	0.2	0.2	0.22	0.22	0.25	0.25	0.25	0.3	0.35
	2	0.2	0.22	0.24	0.25	0.25	0.25	0.25	0.3	0.3	0.18	0.18	0.18	0.18	0.21	0.21	0.21	0.25	0.3
	3	0.18	0.18	0.18	0.18	0.23	0.2	0.2	0.23	0.25	0.16	0.16	0.17	0.17	0.2	0.2	0.2	0.22	0.25
	4	0.15	0.15	0.15	0.14	0.2	0.18	0.18	0.2	0.23	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.2	0.22
	5	0.1	0.1	0.1	0.12	0.16	0.15	0.15	0.15	0.22	0.12	0.13	0.14	0.14	0.16	0.16	0.16	0.16	0.2
	6	0.05	0.05	0.05	0.1	0.1	0.14	0.14	0.14	0.2	0.08	0.1	0.1	0.12	0.14	0.14	0.14	0.14	0.18
	7				0.05	0.05	0.12	0.12	0.12	0.18	0.05	0.05	0.05	0.1	0.1	0.1	0.12	0.12	0.16
	8						0.1	0.12	0.12	0.16				0.05	0.05	0.1	0.1	0.12	0.14
	9						0.05	0.1	0.1	0.14						0.1	0.1	0.1	0.12
	10							0.05	0.05	0.1						0.05	0.1	0.1	0.11
	11									0.05							0.05	0.05	0.1
	12																		0.05
	13																		
	14																		
	15																		

(Unit: mm)

Infeed per Pass and Number of Passes

30° Trapezoidal (TR) inserts

		For external					For internal				
Pitch		2	3	4	5	6	2	3	4	5	6
Height of thread		1.25	1.75	2.25	2.75	3.5	1.25	1.75	2.25	2.75	3.5
Total depth of cut		1.35	1.85	2.35	2.85	3.6	1.35	1.85	2.35	2.85	3.6
Number of passes	1	0.25	0.25	0.3	0.3	0.3	0.2	0.22	0.25	0.25	0.25
	2	0.2	0.22	0.25	0.25	0.25	0.18	0.2	0.22	0.22	0.22
	3	0.2	0.2	0.22	0.2	0.23	0.18	0.18	0.2	0.2	0.21
	4	0.18	0.18	0.2	0.2	0.2	0.16	0.16	0.2	0.18	0.2
	5	0.15	0.17	0.18	0.18	0.18	0.15	0.16	0.17	0.18	0.18
	6	0.12	0.16	0.16	0.16	0.18	0.13	0.16	0.16	0.16	0.18
	7	0.1	0.14	0.15	0.16	0.16	0.1	0.14	0.16	0.16	0.16
	8	0.1	0.14	0.14	0.15	0.16	0.1	0.14	0.14	0.15	0.16
	9	0.05	0.12	0.14	0.14	0.16	0.1	0.12	0.14	0.14	0.16
	10		0.12	0.12	0.14	0.16	0.05	0.12	0.12	0.14	0.16
	11		0.1	0.12	0.14	0.16		0.1	0.12	0.14	0.16
	12		0.05	0.12	0.12	0.15		0.1	0.12	0.12	0.15
	13			0.1	0.12	0.15		0.05	0.1	0.12	0.15
	14			0.1	0.12	0.15			0.1	0.12	0.15
	15			0.05	0.12	0.14			0.1	0.12	0.14
	16				0.1	0.14			0.05	0.1	0.14
	17				0.1	0.12				0.1	0.12
	18				0.1	0.12				0.1	0.12
	19				0.05	0.12				0.1	0.12
	20					0.12				0.05	0.12
	21					0.1					0.1
	22					0.1					0.1
	23					0.05					0.1
	24										0.05
	25										
	26										

(Unit: mm)

29° Trapezoidal (TR) inserts

		For external			For internal		
TPI		8	6	5	8	6	5
Height of thread		1.88	2.41	2.92	1.88	2.41	2.92
Total depth of cut		1.98	2.51	3.02	1.98	2.51	3.02
Number of passes	1	0.25	0.25	0.25	0.22	0.22	0.22
	2	0.22	0.22	0.22	0.2	0.2	0.2
	3	0.2	0.2	0.2	0.18	0.18	0.18
	4	0.18	0.18	0.18	0.16	0.18	0.18
	5	0.16	0.17	0.18	0.16	0.16	0.16
	6	0.16	0.16	0.16	0.16	0.15	0.16
	7	0.16	0.16	0.16	0.15	0.15	0.15
	8	0.14	0.14	0.14	0.14	0.14	0.14
	9	0.14	0.14	0.14	0.14	0.14	0.14
	10	0.12	0.14	0.14	0.12	0.14	0.14
	11	0.1	0.14	0.14	0.1	0.14	0.14
	12	0.1	0.12	0.14	0.1	0.12	0.14
	13	0.05	0.12	0.12	0.1	0.12	0.12
	14		0.12	0.12	0.05	0.12	0.12
	15		0.1	0.12		0.1	0.12
	16		0.1	0.12		0.1	0.12
	17		0.05	0.12		0.1	0.12
	18			0.12		0.05	0.12
	19			0.1			0.1
	20			0.1			0.1
	21			0.05			0.1
	22						0.05
	23						
	24						
	25						
	26						

(Unit: mm)

PT full-profile inserts

		For external				For internal		
TPI		28	19	14	11	19	14	11
Height of thread		0.6	0.86	1.16	1.48	0.86	1.16	1.48
Total depth of cut		0.7	0.96	1.26	1.58	0.96	1.26	1.58
Number of passes	1	0.25	0.28	0.3	0.3	0.22	0.25	0.25
	2	0.2	0.2	0.25	0.25	0.2	0.22	0.22
	3	0.1	0.18	0.2	0.22	0.18	0.18	0.18
	4	0.1	0.15	0.15	0.18	0.16	0.14	0.18
	5	0.05	0.1	0.11	0.15	0.1	0.12	0.15
	6		0.05	0.1	0.12	0.05	0.1	0.13
	7			0.1	0.11	0.05	0.1	0.12
	8			0.05	0.1		0.1	0.1
	9				0.1		0.05	0.1
	10				0.05			0.1
	11							0.05
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

(Unit: mm)

NPT full-profile inserts

		For external				For internal		
TPI		18	14	11.5	8	14	11.5	8
Height of thread		1.14	1.47	1.79	2.58	1.47	1.79	2.58
Total depth of cut		1.24	1.57	1.89	2.68	1.57	1.89	2.68
Number of passes	1	0.2	0.25	0.25	0.3	0.22	0.22	0.25
	2	0.18	0.22	0.22	0.25	0.2	0.2	0.2
	3	0.17	0.2	0.2	0.2	0.18	0.18	0.2
	4	0.16	0.18	0.18	0.2	0.18	0.18	0.2
	5	0.14	0.17	0.18	0.2	0.16	0.16	0.2
	6	0.12	0.16	0.17	0.2	0.14	0.16	0.2
	7	0.12	0.12	0.16	0.18	0.12	0.16	0.18
	8	0.1	0.12	0.14	0.18	0.12	0.14	0.18
	9	0.05	0.1	0.12	0.16	0.1	0.12	0.16
	10		0.05	0.12	0.16	0.1	0.12	0.16
	11			0.1	0.14	0.05	0.1	0.14
	12			0.05	0.14		0.1	0.14
	13				0.12		0.05	0.12
	14				0.1			0.1
	15				0.1			0.1
	16				0.05			0.1
	17							0.05
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

(Unit: mm)

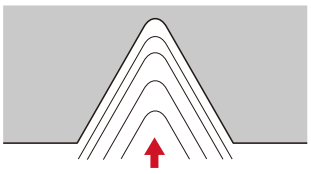
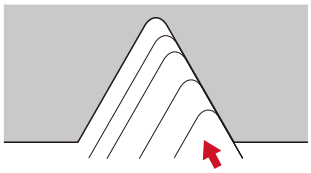
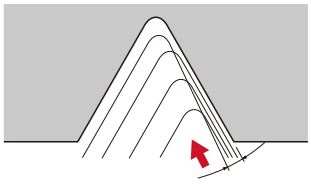
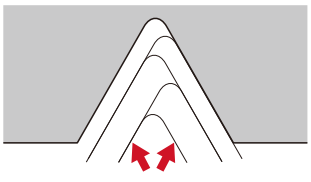
Threading guidelines

Determine the infeed per pass and number of threads whilst referring to the table and description below.

Pitch (mm)	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5 ~
TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5 ~
No. of passes	4 ~ 6	4 ~ 7	4 ~ 8	5 ~ 9	6 ~ 10	7 ~ 12	7 ~ 12	8 ~ 14	10 ~ 16	11 ~ 18	11 ~ 18	11 ~ 19	12 ~ 24

Note:
- When using the full-profile insert, set the total infeed amount by taking the finish stock of 0.1mm into account.
- Set the first infeed to 150 ~ 200% of nose R and do not allow it to exceed 0.5 mm.
- The infeed amount during the final pass must be a minimum of 0.05 mm. No zero cuts should be made. (Extra small infeed or zero cutting of work hardened surfaces will reduce tool life.)
- The partial-profile insert or inside diameter insert has small nose R. Reduce the infeed per pass and increase the no. of passes.
- Regarding standard infeed per passes and no. of passes, please refer to page L039.

Infeed methods for threading tools

Infeed method	Features
 Straight infeed (radial infeed)	• Most simple and usual method Suitable for relatively small pitch threads of easily machinable material. • Chip contact length on right and left is longer, causing chattering, with increased load on the nose end. • When the half included angle is not symmetrical to the right and left, infeeding in the direction of 1/2 of the included angle will ensure equal machining with right and left cutting edges.
 Single edge infeed (flank infeed)	• Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control. • Edge on the right (with zero infeed) tends to be worn heavily.
 Modified single-edge infeed (flank infeed)	• Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control. • Edge on the right performs some cutting, therefore wear of this edge can thus be suppressed.
 Alternating flank infeed	• Suitable for large pitch threads or easy to tear material. Effectively prevents chattering. • Chips are discharged alternately in right and left directions, resulting possibly in entanglement. • Right and left edges are used alternately, ensuring uniform wear and extending tool life.

Selection of ST-type Toolholders

Selection of internal threading toolholders

Relation between internal toolholders and machinable threads

In the tables starting from next page, the relationships between toolholders, inserts, threads to be machined, and shims to be replaced are shown. In these tables, the criteria are set as follows.

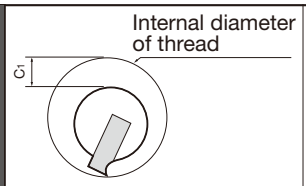
- **The minimum machining diameter.**
- **The L/D ratio of the toolholder.**
- **The lead angle of the thread.**
- **Cutting conditions**

Especially when machining near the minimum machining diameter, the compensation for the lead angle should be done carefully.
Moreover, in threading, because chips generally can not be broken into small pieces, the shank size should be selected in consideration of adequate clearance (C_1).

Symbols

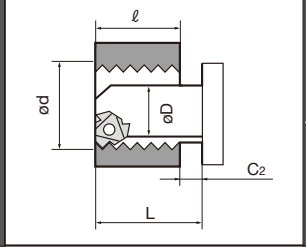
- ◯ Recommended
- • Usable
- 2 Needs replacing of the shim. "2" indicates "Change to the shim for 2° lead angle".
- Unusable

Clearance C_1

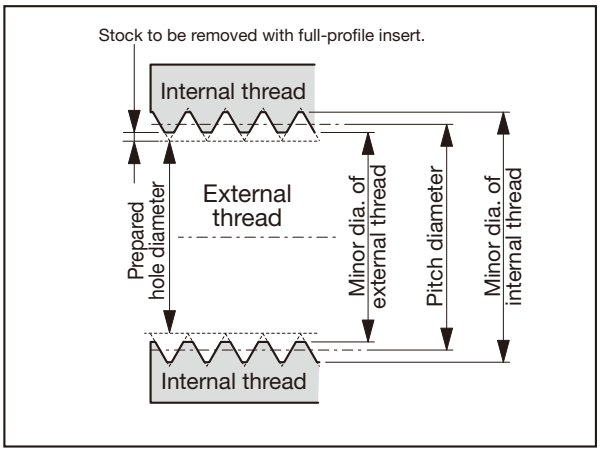


$C_1 \geq 3$ mm
(1 mm for 6IR insert holders)

Overhang ratio L/D



Steel shank	L/D ≤ 2→◯
Carbide shank	L/D ≤ 3→◯



How to use the tables

①Firstly, find the nominal thread diameter. Example: M35 X 1.5
②The table indicates that the lead angle is 0°48′.
③The Cat. No. of the insert to be used corresponds with IR15ISO.
④By following the row to the right, • and ◯ marks are found. The ◯ mark indicates the optimum toolholder type. The toolholders of • mark are usable, but less rigid because the shank diameter against the threading diameter is smaller than those of ◯ marked toolholder. In this example, CNR0025R16 and TCNR0020R16DT are the optimum toolholders. The insert Cat.No. is 16IR15ISO.
⑤In the case of M33 X 3 thread, the lead angle is 1°46′. By following the row to the right. 2 mark is found. This indicates that the shim should be replaced to 2° type. For calculation of the lead angle, refer to page L036.

Metric fine screw thread (ISO)

(For full size of this table, see page L044.)

Nominal size	Pitch	Effective diameter	Lead angle	Shank material	Steel shank															Carbide shank								"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR				22IR			6IR				11IR				16IR			16IR			22IR	
				Holder Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
				Insert Cat. No.																														
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		◯									•		•		•		•	◯				
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		◯					•		•		•		•		•		•	◯				
M33×3	3	31.05	1°46′	IR30ISO											2															•	2				
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×2	2	34.7	1°03′	IR20ISO											•	◯				•		•		•		•		•		•	◯				
M36×3	3	34.05	1°[illegible]																											•	2				
M38×1.5	1.5	[illegible]																						•		•		•		•	•	◯			
																								•		•		•		•	•				

Metric coarse screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																Carbide shank								"Tsuppari-Ichiban"	
				Insert size	6IR				11IR				16IR		22IR				27IR		6IR				11IR		16IR		22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0010K11-3	SNR0013L11-2	SNR0013L11-3	SNR0016M16-2	SNR0016M16-3	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC-2	SNR0010M11SC-3	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR00025S22DT	(TCNR00032T22DT)
M10	1.5	9.03	3°02′	IR15ISO																										
M11	1.5	10.03	2°44′	IR15ISO		○																○								
M12	1.75	10.86	2°56′	IR175ISO		○																○								
M14	2	12.7	2°52′	IR20ISO		•		○														•		○						
M16	2	14.7	2°29′	IR20ISO	•		○														•		○							
M18	2.5	16.38	2°47′	IR25ISO																										
M20	2.5	18.38	2°29′	IR25ISO																										
M22	2.5	20.38	2°14′	IR25ISO																										
M24	3	22.05	2°29′	IR30ISO																										
M27	3	25.05	2°11′	IR30ISO									○														○			
M30	3.5	27.73	2°18′	IR35ISO																										
M33	3.5	30.73	2°05′	IR35ISO											○															
M36	4	33.4	2°11′	IR40ISO											○															
M39	4	36.4	2°00′	IR40ISO											•		2												2	
M42	4.5	39.08	2°06′	IR45ISO											•		2												2	
M45	4.5	42.08	1°57′	IR45ISO											•		2												2	
M48	5	44.75	2°02′	IR50ISO											•		2	2											2	2
M52	5	48.75	1°52′	IR50ISO											•		2	2											2	2
M56	5.5	52.43	1°55′	IR55ISO																										
M60	5.5	56.43	1°47′	IR55ISO															2											
M64	6	60.1	1°49′	IR60ISO															2											
M68	6	64.1	1°42′	IR60ISO															2	2										

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank									
				Insert size	6IR				11IR						6IR				11IR					
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3
M9×0.75	0.75	8.51	1°36′	IR075ISO																				
M9×1	1	8.32	2°11′	IR10ISO																				
M10×0.75	0.75	9.51	1°26′	IR075ISO																				
M10×1	1	9.35	1°57′	IR10ISO	○										○									
M10×1.25	1.25	9.19	2°29′	IR125ISO																				
M11×0.75	0.75	10.51	1°18′	IR075ISO																				
M11×1	1	10.35	1°46′	IR10ISO	○										○									
M12×1	1	11.35	1°36′	IR10ISO	•		○								•		○							
M12×1.25	1.25	11.19	2°02′	IR125ISO	○										○									
M12×1.5	1.5	11.03	2°29′	IR15ISO	○										○									
M14×1	1	13.35	1°22′	IR10ISO																				
M14×1.25	1.25	13.19	1°44′	IR125ISO	•		○								•		○							
M14×1.5	1.5	13.03	2°06′	IR15ISO	•		○								•		○							
M15×1	1	14.35	1°16′	IR10ISO																				
M15×1.5	1.5	14.03	1°57′	IR15ISO	•		○								•		○							
M16×1	1	15.35	1°11′	IR10ISO					○															
M16×1.5	1.5	15.03	1°49′	IR15ISO	•		○								•		○							
M17×1	1	16.35	1°07′	IR10ISO					○										○					
M17×1.5	1.5	16.03	1°42′	IR15ISO	•		•			○					•		○							
M18×1	1	17.35	1°03′	IR10ISO					○										○					
M18×1.5	1.5	17.03	1°36′	IR15ISO	•		•			○					•		•			○				
M18×2	2	16.7	2°11′	IR20ISO	•		•			○					•		•			○				
M20×1	1	19.35	0°57′	IR10ISO					•			○							•				○	
M20×1.5	1.5	19.03	1°26′	IR15ISO					•			○							•				○	
M20×2	2	18.7	1°57′	IR20ISO	•		•			○					•		•			•			○	

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Selection of ST-type Toolholders

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank														"Tsuppari-Ichiban"	
				Insert size	6IR				11IR					16IR				6IR				11IR					16IR						16IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
M22×1	1	21.35	0°51′	IR10ISO					•		○											•			○						•		
M22×1.5	1.5	21.03	1°18′	IR15ISO	•		•		•		○							•		•		•			○						•		
M22×2	2	20.7	1°46′	IR20ISO	•		•			•		○						•		•			•			○							
M24×1	1	23.35	0°47′	IR10ISO							○			•								•			○						•		
M24×1.5	1.5	23.03	1°11′	IR15ISO	•		•				○			•				•		•		•			○						•		
M24×2	2	22.07	1°39′	IR20ISO	•		•			•		○						•		•			•			○							
M25×1	1	24.35	0°45′	IR10ISO					•		○			•											○				•			•		
M25×1.5	1.5	24.03	1°08′	IR15ISO	•		•		•		○			•				•		•					○				•			•		
M25×2	2	23.7	1°32′	IR20ISO	•		•			•		○			•			•		•			•			○							
M26×1.5	1.5	25.03	1°06′	IR15ISO	•		•		•		•			○				•		•		•			•				•			○		
M27×1	1	26.35	0°42′	IR10ISO					•		•			○								•			•				•			○		
M27×1.5	1.5	26.03	1°03′	IR15ISO	•		•		•		•			○				•		•		•			•				•			○		
M27×2	2	25.7	1°25′	IR20ISO	•		•		•		•			○				•		•		•			•				•			○		
M28×1	1	27.35	0°40′	IR10ISO					•		•			○								•			•				•			○		
M28×1.5	1.5	27.03	1°01′	IR15ISO	•		•		•		•			○				•		•		•			•				•			○		
M28×2	2	26.7	1°22′	IR20ISO	•		•		•		•			○				•		•		•			•				•			○		
M30×1	1	29.35	0°37′	IR10ISO					•		•			○								•			•				•			○		
M30×1.5	1.5	29.03	0°57′	IR15ISO					•		•			○								•			•				•			○		
M30×2	2	28.7	1°16′	IR20ISO	•		•		•		•			○				•		•		•			•				•			○		
M30×3	3	28.05	1°57′	IR30ISO											○													○					
M32×1.5	1.5	31.03	0°53′	IR15ISO					•		•			○			○					•			•				•			•	○	
M32×2	2	30.07	1°11′	IR20ISO	•		•		•		•			○			○	•		•		•			•				•			•	○	

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank															Carbide shank													"Tsuppari-Ichiban"	
				Insert size	6IR				11IR				16IR				22IR			6IR				11IR				16IR				16IR		22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		○										•		•			•	○			
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		•	○					•		•		•		•			•	○			
M33×3	3	31.05	1°46′	IR30ISO											2															•	2			
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	○									•		•			•	○			
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	○									•		•			•	○			
M36×2	2	34.7	1°03′	IR20ISO	•		•		•		•		•		•	○					•		•		•		•			•	○			
M36×3	3	34.05	1°36′	IR30ISO											2															•	2			
M38×1.5	1.5	37.03	0°44′	IR15ISO					•		•		•		•	○									•		•			•	•	○		
M39×1.5	1.5	38.03	0°43′	IR15ISO					•		•		•		•	○									•		•			•	•	○		
M39×2	2	38.7	0°58′	IR20ISO					•		•		•		•	○									•		•			•	•	○		
M39×3	3	37.05	1°29′	IR30ISO									•		•	○											•			•	•	○		
M40×1.5	1.5	39.03	0°42′	IR15ISO					•		•		•		•	○									•		•			•	•	○		
M40×2	2	37.8	0°57′	IR20ISO					•		•		•		•	○									•		•			•	•	○		
M40×3	3	38.05	1°26′	IR30ISO									•		•	○											•			•	•	○		
M42×1.5	1.5	41.03	0°40′	IR15ISO					•		•		•		•	○									•		•			•	•	○		
M42×2	2	40.7	0°54′	IR20ISO					•		•		•		•	○									•		•			•	•	○		
M42×3	3	40.05	1°22′	IR30ISO									•		•	○											•			•	•	○		
M42×4	4	39.4	1°51′	IR40ISO															2														•	2
M45×1.5	1.5	44.03	0°37′	IR15ISO					•		•		•		•	•	○								•		•			•	•	○	○		
M45×2	2	43.7	0°50′	IR20ISO					•		•		•		•	•	○								•		•			•	•	○	○		
M45×3	3	43.05	1°16′	IR30ISO									•		•	•	○					•		•		•		•			•	•	○	○		
M45×4	4	42.4	1°43′	IR40ISO															2														•	2
M48×1.5	1.5	47.03	0°35′	IR15ISO					•		•		•		•	•	○								•		•			•	•	○	○		
M48×2	2	46.7	0°47′	IR20ISO					•		•		•		•	•	○								•		•			•	•	○	○		
M48×3	3	46.05	1°11′	IR30ISO									•		•	•	○										•			•	•	○	○		
M48×4	4	45.4	1°36′	IR40ISO															2														•	2

2 : Change the shim to AN16-2
2 : Change the shim to NXN22-2
2 : Change the shim to AN16-2DT
2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																		Carbide shank								"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR						22IR					6IR			11IR				16IR		16IR			22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	(CNR0040T22)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
M50×1.5	1.5	49.03	0°33′	IR15ISO					•		•		•		•	•	○	•														•	•	○	○			
M50×2	2	48.7	0°45′	IR20ISO					•		•		•		•	•	○															•	•	○	○			
M50×3	3	48.05	1°08′	IR30ISO									•		•	•	○															•	•	○	○			
M52×1.5	1.5	51.03	0°32′	IR15ISO					•		•		•		•	•	•	○														•	•	○	○			
M52×2	2	50.7	0°43′	IR20ISO					•		•		•		•	•	•	○														•	•	○	○			
M52×3	3	50.05	1°06′	IR30ISO									•		•	•	○	•														•	•	○	○			
M52×4	4	49.4	1°29′	IR40ISO															•	•	•	•														•	•	○
M55×1.5	1.5	54.03	0°30′	IR15ISO					•		•		•		•	•	○	•														•	•	○	○			
M55×2	2	53.7	0°41′	IR20ISO					•		•		•		•	•	•	○														•	•	○	○			
M55×3	3	53.05	1°02′	IR30ISO									•		•	•	•	○														•	•	○	○			
M55×4	4	52.4	1°24′	IR40ISO															•	•	•	•	○													•	•	○
M56×1.5	1.5	55.03	0°30′	IR15ISO					•		•		•		•	•	•	○														•	•	○	○			
M56×2	2	54.7	0°40′	IR20ISO					•		•		•		•	•	•	○														•	•	○	○			
M56×3	3	54.05	1°01′	IR30ISO									•		•	•	•	○														•	•	○	○			
M56×4	4	53.4	1°22′	IR40ISO															•	•	•	•	○													•	•	○
M58×1.5	1.5	57.03	0°29′	IR15ISO					•		•		•		•	•	•	○														•	•	○	○			
M58×2	2	56.7	0°39′	IR20ISO					•		•		•		•	•	•	○														•	•	○	○			
M58×3	3	56.05	0°59′	IR30ISO									•		•	•	•	○														•	•	○	○			
M58×4	4	55.4	1°19′	IR40ISO															•	•	•	•	○													•	•	○
M60×1.5	1.5	59.03	0°28′	IR15ISO					•		•		•		•	•	•	○														•	•	○	○			
M60×2	2	58.7	0°37′	IR20ISO					•		•		•		•	•	•	○														•	•	○	○			
M60×3	3	58.05	0°57′	IR30ISO									•		•	•	•	○														•	•	○	○			
M60×4	4	57.4	1°16′	IR40ISO															•	•	•	•	○													•	•	○

Unified coarse screw thread (UNC)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank																	Carbide shank									"Tsuppari-Ichiban"	
				Insert size	11IR						16IR			22IR					27IR			11IR							16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR0025S22DT	(TCNR0032T22DT)
7/16-14UNC	14	9.93	3°20′	(IR14UN)																												
1/2-13UNC	13	11.43	3°07′	(IR13UN)																												
9/16-12UNC	12	12.91	2°59′	IR12UN																												
5/8-11UNC	11	14.38	2°56′	(IR11UN)																												
3/4-10UNC	10	17.4	2°40′	(IR10UN)																												
7/8-9UNC	9	20.39	2°31′	IR9UN																												
1-8UNC	8	23.34	2°29′	IR8UN								○																				
1 1/8-7UNC	7	26.22	2°31′	(IR7UN)																												
1 1/4-7UNC	7	29.39	2°15′	(IR7UN)											○																		
1 3/8-6UNC	6	32.17	2°24′	(IR6UN)											○																		
1 1/2-6UNC	6	35.35	2°11′	(IR6UN)											○		2															2	
1 3/4-5UNC	5	41.15	2°15′	(IR5UN)											○		2															2	
2-4 1/2UNC	4.5	47.14	2°11′	(IR45UN)																2													
2 1/4-4 1/2UNC	4.5	53.49	1°55′	(IR45UN)																2													
2 1/2-4UNC	4	59.38	1°57′	(IR4UN)																2													
2 3/4-4UNC	4	65.73	1°46′	(IR4UN)																2	2												
3-4UNC	4	72.08	1°36′	(IR4UN)																2	2												
3 1/4-4UNC	4	78.43	1°29′	(IR4UN)																•	•	○											
3 1/2-4UNC	4	84.78	1°22′	(IR4UN)																•	•	○											
3 3/4-4UNC	4	91.13	1°16′	(IR4UN)																•	•	○											
4-4UNC	4	97.48	1°11′	(IR4UN)																•	•	○											

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Selection of ST-type Toolholders

Unified fine screw thread (UNF)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank								"Tsuppari-Ichiban"		
				Insert size	6IR				11IR		16IR				6IR				11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8-24UNF	24	8.84	2°11′	(IR24UN)																					
				IRA60																					
7/16-20UNF	20	10.29	2°15′	(IR20UN)																					
				IRA60	○										○										
1/2-20UNF	20	11.87	1°57′	(IR20UN)																					
				IRA60	•		○								•		○								
9/16-18UNF	18	13.37	1°55′	(IR18UN)																					
				IRA60	•		○								•		○								
5/8-18UNF	18	14.96	1°43′	(IR18UN)																					
				IRA60	•		○								•		○								
3/4-16UNF	16	18.02	1°36′	IR16UN					○											○					
7/8-14UNF	14	21.05	1°34′	IR14UN					•	○										•		○			
1-12UNF	12	24.03	1°36′	IR12UN								○													
1 1/8-12UNF	12	27.2	1°25′	IR12UN							○												○		○		
1 1/4-12UNF	12	30.38	1°16′	IR12UN							•		○										○		•	○	
1 3/8-12UNF	12	33.55	1°09′	IR12UN							•		•	○									○		•	•	○
1 1/2-12UNF	12	36.73	1°03′	IR12UN							•		•	○									○		•	•	○

Unified extra fine screw thread (UNEF))

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank								"Tsuppari-Ichiban"		
				Insert size	6IR		11IR				16IR				6IR		11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0006H06SC-2	SNR0008H06SC-2	SNR0010K11	SNR0010K11-2	SNR0012L11	SNR0012L11-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8	32	9.01	1°61′	IR32UN																					
7/16	28	10.52	1°57′	IR28UN	○										○										
1/2	28	12.11	1°37′	IR28UN																					
9/16	24	13.6	1°42′	IR24UN																					
5/8	24	15.19	1°27′	IR24UN																					
11/16	24	16.77	1°15′	IR24UN			○										○								
3/4	20	18.22	1°27′	IR20UN			○										○								
13/16	20	19.81	1°17′	IR20UN			•		○								•		○						
7/8	20	21.4	1°08′	IR20UN			•		○								•		○						
15/16	20	22.99	1°01′	IR20UN			•		•		○						•		○				○		
1	20	24.57	0°94′	IR20UN			•		•		○						•		•		○		○		
1 1/16	18	26.07	0°99′	IR18UN			•		•		○						•		•		○		○		
1 1/8	18	27.66	0°93′	IR18UN			•		•		○						•		•		○		○		
1 3/16	18	29.25	0°88′	IR18UN			•		•		•		○				•		•		○		•	○	
1 1/4	18	30.83	0°84′	IR18UN			•		•		•		○				•		•		○		•	○	
1 5/16	18	32.42	0°79′	IR18UN			•		•		•		○				•		•		○		•	○	
1 3/8	18	34.01	0°76′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 7/16	18	35.6	0°72′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 1/2	18	37.18	0°69′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 9/16	18	38.77	0°66′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 5/8	18	40.36	0°64′	IR18UN			•		•		•		•	•	○				•		○		•	•	○
1 11/16	18	41.95	0°61′	IR18UN			•		•		•		•	•	○				•		○		•	•	○

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Whitworth British Standard (BSW) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank		"Tsuppari-Ichiban"				
				Insert size	16IR						22IR				16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	14	9.95	3°32′	IR14W																	
1/2	12	11.34	3°40′	IR12W																	
9/16	12	12.93	2°98′	IR12W																	
5/8	11	14.4	2°92′	IR11W																	
11/16	11	15.98	2°63′	IR11W																	
3/4	10	17.42	2°66′	IR10W																	
7/8	9	20.42	2°52′	IR9W																	
1	8	23.37	2°48′	IR8W																	
1 1/8	7	26.25	2°52′	IR7W																	
1 1/4	7	29.43	2°25′	IR7W								○									
1 1/2	6	35.39	2°18′	IR6W								○									
1 3/4	5	41.2	2°25′	IR5W								•		[2]							[2]

[2] : Change the shim to NXN22-2 ◄ ► [2] : Change the shim to GXN22-2DT

Whitworth British Standard Fine (BSF) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank														Carbide shank				"Tsuppari-Ichiban"				
				Insert size	6IR		11IR		16IR					22IR					6IR		16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0006H06SC-2	SNR0008H06SC-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	18	10.21	2°52′	IR18W																							
1/2	16	11.68	2°48′	IR16W	○														○								
9/16	16	13.27	2°18′	IR16W	•	○													•	○							
5/8	14	14.71	2°25′	IR14W																							
11/16	14	16.3	2°03′	IR14W				○																			
3/4	12	17.69	2°18′	IR12W																							
7/8	11	20.75	2°03′	IR11W																							
1	10	23.77	1°95′	IR10W						○																	
1 1/8	9	26.77	1°92′	IR9W						○											○						
1 1/4	9	29.94	1°72′	IR9W						•		[2]									○		[2]				
1 3/8	8	32.89	1°76′	IR8W						•		[2]									○		[2]				
1 1/2	8	36.07	1°61′	IR8W						•		•	[2]								○		•	[2]			
1 5/8	8	39.24	1°48′	IR8W					•			•	○								○		•	•	○		
1 3/4	7	42.13	1°57′	IR7W											○		[2]										[2]
2	7	48.48	1°37′	IR7W										•			•	○								•	○
2 1/4	6	54.44	1°42′	IR6W										•			•	○								•	○
2 1/2	6	60.79	1°27′	IR6W										•			•	○								•	○
2 3/4	6	67.14	1°15′	IR6W										•			•	○								•	○
3	5	72.95	1°27′	IR5W										•			•	○								•	○
3 1/4	5	79.3	1°17′	IR5W										•			•	○								•	○

[2] : Change the shim to AN16-2 ◄ ► [2] : Change the shim to AN16-2DT

[2] : Change the shim to NXN22-2 ◄ ► [2] : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Selection of ST-type Toolholders

30° trapezoidal thread (TR) (for machine parts)

1/2

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank														Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR								22IR						27IR		16IR				16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	CNR0040T16	CNR0050U16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR22×3	3	20.5	2°40′	IR30TR																								
TR24×5	5	21.5	4°14′	IR50TR																								
TR24×3	3	22.5	2°26′	IR30TR																								
TR26×5	5	23.5	3°52′	IR50TR																								
TR26×3	3	24.5	2°14′	IR30TR		○																						
TR28×5	5	25.5	3°34′	IR50TR																								
TR28×3	3	26.5	2°04′	IR30TR		•														○								
TR30×6	6	27	4°03′	IR60TR																								
TR30×3	3	28.5	1°55′	IR30TR		•														○								
TR32×6	6	29	3°46′	IR60TR																								
TR32×3	3	30.5	1°48′	IR30TR		•		2												•				2				
TR34×6	6	31	3°32′	IR60TR																								
TR34×3	3	32.5	1°41′	IR30TR		•		2												•				2				
TR36×6	6	33	3°19′	IR60TR																								
TR36×3	3	34.5	1°35′	IR30TR		•		2	2											•				2	2			
TR38×3	3	36.5	1°30′	IR30TR		•		2	2											•				2	2			
TR40×3	3	38.5	1°25′	IR30TR	•			•	○											○				•	○			
TR42×3	3	40.5	1°21′	IR30TR	•			•	○											○				•	○			
TR44×3	3	42.5	1°17′	IR30TR	•			•	•	○										○				•	•	○		
TR46×3	3	44.5	1°14′	IR30TR	•			•	•	○										○				•	•	○		
TR48×3	3	46.5	1°11′	IR30TR	•			•	•	○										○				•	•	○		
TR50×3	3	48.5	1°08′	IR30TR	•			•	•	○										○				•	•	○		
TR52×3	3	50.5	1°05′	IR30TR	•			•	•	•	○									○				•	•	○		
TR55×3	3	53.5	1°01′	IR30TR	•			•	•	•	○									○				•	•	○		
TR60×3	3	58.5	0°56′	IR30TR	•			•	•	•	○									○				•	•	○		

2 : Change the shim to AN16-2

2 : Change the shim to AN16-2DT

30° trapezoidal thread (TR) (for machine parts)

2/2

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank															Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR						22IR							27IR			16IR			16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	(CNR0050U22)	(CNR0063V22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR65×4	4	63	1°09′	IR40TR							•			•	•	•	○										•	•	○
TR70×4	4	68	1°04′	IR40TR							•			•	•	•	○										•	•	○
TR75×4	4	73	1°00′	IR40TR							•			•	•	•	○										•	•	○
TR80×4	4	78	0°56′	IR40TR							•			•	•	•	•	○									•	•	○
TR85×4	4	83	0°53′	IR40TR							•			•	•	•	•	○									•	•	○
TR90×4	4	88	0°50′	IR40TR							•			•	•	•	•	○									•	•	○
TR95×4	4	93	0°47′	IR40TR							•			•	•	•	•	○									•	•	○
TR100×4	4	98	0°45′	IR40TR							•			•	•	•	•	○									•	•	○
TR105×4	4	103	0°42′	IR40TR							•			•	•	•	•	○									•	•	○
TR110×4	4	108	0°41′	IR40TR							•			•	•	•	•	○									•	•	○
TR115×6	6	112	0°59′	IR60TR															•	•	○								
TR120×6	6	117	0°56′	IR60TR															•	•	○								
TR125×6	6	122	0°54′	IR60TR															•	•	○								
TR130×6	6	127	0°52′	IR60TR															•	•	○								
TR135×6	6	132	0°50′	IR60TR															•	•	○								
TR140×6	6	137	0°48′	IR60TR															•	•	○								
TR145×6	6	142	0°46′	IR60TR															•	•	○								
TR150×6	6	147	0°45′	IR60TR															•	•	○								
TR155×6	6	152	0°43′	IR60TR															•	•	○								
TR160×6	6	157	0°42′	IR60TR															•	•	○								
TR165×6	6	162	0°41′	IR60TR															•	•	○								
TR170×6	6	167	0°39′	IR60TR															•	•	○								

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Parallel pipe thread (G) (for pipe) This table is also applied to PF, Rp, and PS type threads.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank										"Tsuppari-Ichiban"			
					Insert size	6IR		11IR				16IR						6IR				11IR				16IR		16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
G1/4	19	1.34	12.30	1°59′	IR19W	•	○												•		○										
G3/8	19	1.34	15.81	1°33′	IR19W	•	•		○										•		○										
G1/2	14	1.81	19.79	1°40′	IR14W				•		○												•		○						
G5/8	14	1.81	21.75	1°31′	IR14W				•		○												•		○						
G3/4	14	1.81	25.28	1°18′	IR14W			•		•		○											•		•		○		○			
G7/8	14	1.81	29.04	1°08′	IR14W			•		•		•		○									•		•		○		•	○		
G1	11	2.31	31.77	1°20′	IR11W							•		○													○		•	○		
G1-1/8	11	2.31	36.42	1°09′	IR11W							•		•	○												○		•	•	○	
G1-1/4	11	2.31	40.43	1°02′	IR11W							•		•	○												○		•	•	○	
G1-1/2	11	2.31	46.32	0°55′	IR11W							•		•	•	○											○		•	•	•	○
G1-3/4	11	2.31	52.27	0°48′	IR11W							•		•	•	•	○										○		•	•	•	○
G2	11	2.31	58.14	0°43′	IR11W							•		•	•	•	○										○		•	•	•	○
G2-1/4	11	2.31	64.23	0°39′	IR11W							•		•	•	•	•	○									○		•	•	•	○
G2-1/2	11	2.31	73.71	0°34′	IR11W							•		•	•	•	•	○									○		•	•	•	○
G2-3/4	11	2.31	80.06	0°32′	IR11W							•		•	•	•	•	○									○		•	•	•	○
G3	11	2.31	86.41	0°29′	IR11W									0	0	0	0	0												0	0	0
G3-1/2	11	2.31	98.85	0°26′	IR11W									0	0	0	0	0												0	0	0
G4	11	2.31	111.55	0°23′	IR11W									0	0	0	0	0												0	0	0
G4-1/2	11	2.31	124.25	0°20′	IR11W									0	0	0	0	0												0	0	0
G5	11	2.31	136.95	0°18′	IR11W									0	0	0	0	0												0	0	0
G6	11	2.31	162.35	0°16′	IR11W									0	0	0	0	0												0	0	0

0 : Change the shim to AN16-0

0 : Change the shim to AN16-0DT

Taper pipe thread (PT) (for pipe) This table is also applied to Rc type pipe thread.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank										"Tsuppari-Ichiban"			
					Insert size	6IR				11IR				16IR														16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
PT1/4	19	1.34	12.30	1°59′	IR19PT	○													○												
PT3/8	19	1.34	15.81	1°33′	IR19PT	•		○											•		○										
PT1/2	14	1.81	19.79	1°40′	IR14PT						○													•		○					
PT3/4	14	1.81	25.28	1°19′	IR14PT									○									•		•		○		○			
PT1	11	2.31	31.77	1°20′	IR11PT									•		○											○		•	○		
PT1 1/4	11	2.31	40.43	1°02′	IR11PT									•		•	○										○		•	•	○	
PT1 1/2	11	2.31	46.32	0°55′	IR11PT									•		•	•	○									○		•	•	•	○
PT2	11	2.31	58.14	0°43′	IR11PT									•		•	•	•	○								○		•	•	•	○
PT2 1/2	11	2.31	73.71	0°34′	IR11PT									•		•	•	•	•	○							○		•	•	•	○
PT3	11	2.31	86.41	0°29′	IR11PT											0	0	0	0	0										0	0	0
PT3 1/2	11	2.31	98.85	0°26′	IR11PT											0	0	0	0	0										0	0	0
PT4	11	2.31	111.55	0°23′	IR11PT											0	0	0	0	0										0	0	0
PT5	11	2.31	136.95	0°18′	IR11PT											0	0	0	0	0										0	0	0
PT6	11	2.31	162.35	0°16′	IR11PT											0	0	0	0	0										0	0	0
PT7	11	2.31	187.75	0°13′	IR11PT											0	0	0	0	0										0	0	0
PT8	11	2.31	213.15	0°12′	IR11PT											0	0	0	0	0										0	0	0
PT9	11	2.31	238.55	0°11′	IR11PT											0	0	0	0	0										0	0	0
PT10	11	2.31	263.95	0°10′	IR11PT											0	0	0	0	0										0	0	0
PT12	11	2.31	314.75	0°08′	IR11PT											0	0	0	0	0										0	0	0

0 : Change the shim to AN16-0

0 : Change the shim to AN16-0DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Selection of ST-type Toolholders

National taper pipe thread (NPT) (for pipe)

Nominal size	TPI	Pitch	Lead angle	Shank material	Steel shank											Carbide shank							"Tsuppari-Ichiban"			
				Insert size	6IR				16IR							6IR				16IR			16IR			
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
3/8NPT	18	1.41	1°37′	IR18NPT	•		○										•		○								
1/2NPT	14	1.81	1°40′	IR14NPT																							
3/4NPT	14	1.81	1°19′	IR14NPT					○												○			○			
1NPT	11.5	2.21	1°17′	IR115NPT					○			○									○			•	○		
1 1/4NPT	11.5	2.21	1°00′	IR115NPT					○			•	•	○							○			•	•	•	○
1 1/2NPT	11.5	2.21	0°52′	IR115NPT					○			•	•	○							○			•	•	•	○
2NPT	11.5	2.21	0°41′	IR115NPT					○			•	•	•	•	○					○			•	•	•	○
2 1/2NPT	8	3.175	0°50′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3NPT	8	3.175	0°40′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3 1/2NPT	8	3.175	0°35′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
4NPT	8	3.175	0°31′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
5NPT	8	3.175	0°25′	IR8NPT								0	0	0	0	0									0	0	0
6NPT	8	3.175	0°21′	IR8NPT								0	0	0	0	0									0	0	0
8NPT	8	3.175	0°16′	IR8NPT								0	0	0	0	0									0	0	0
10NPT	8	3.175	0°13′	IR8NPT								0	0	0	0	0									0	0	0
12NPT	8	3.175	0°11′	IR8NPT								0	0	0	0	0									0	0	0
14NPT	8	3.175	0°10′	IR8NPT								0	0	0	0	0									0	0	0
16NPT	8	3.175	0°09′	IR8NPT								0	0	0	0	0									0	0	0
18NPT	8	3.175	0°08′	IR8NPT								0	0	0	0	0									0	0	0
20NPT	8	3.175	0°07′	IR8NPT								0	0	0	0	0									0	0	0
24NPT	8	3.175	0°06′	IR8NPT								0	0	0	0	0									0	0	0

0 : Change the shim to AN16-0

0 : Change the shim to AN16-0DT

29° trapezoidal thread (ACME) (for machine parts, pipe)

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank			"Tsuppari-Ichiban"			
					Insert size	16IR						22IR					27IR		16IR			16IR		22IR	
					Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	SNR0016R16SC-3	TSNR0016Q16	TCNR0020R16DT	TCNR0025S22DT	(TCNR0032T22DT)
3/8	12	2.12	8.465	4°33′	IR12ACME																			
7/16	12	2.12	10.053	3°50′	IR12ACME																			
1/2	10	2.54	11.43	4°03′	IR10ACME																			
5/8	8	3.18	14.274	4°03′	IR8ACME																			
3/4	6	4.23	16.934	4°33′	IR6ACME																			
7/8	6	4.23	20.109	3°50′	IR6ACME																			
1	5	5.08	22.86	4°03′	IR5ACME																			
1-1/8	5	5.08	26.035	3°33′	IR5ACME																			
1-1/4	5	5.08	29.21	3°10′	IR5ACME																			
1-3/8	4	6.35	31.75	3°39′	IR4ACME																			
1-1/2	4	6.35	34.925	3°19′	IR4ACME																			
1-3/4	4	6.35	41.275	2°48′	IR4ACME																			
2	4	6.35	47.625	2°26′	IR4ACME																			

Because this thread standard is characterized with large pitch and small diameter, (that is a large lead angle) the standard inserts and toolholders can not be used for machining this thread type. The application is limited to outside of the standard.

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Threading Inserts

DUOJCUT

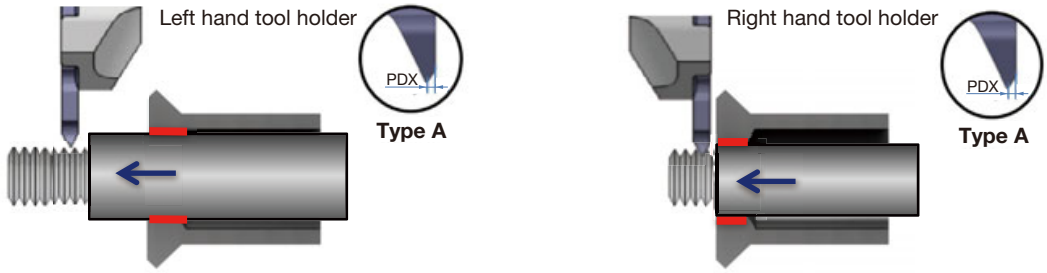
Edge Orientation and Description of Threading Inserts

	Edge Orientation		
	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

JXTG 12 F R - 60 A - 005

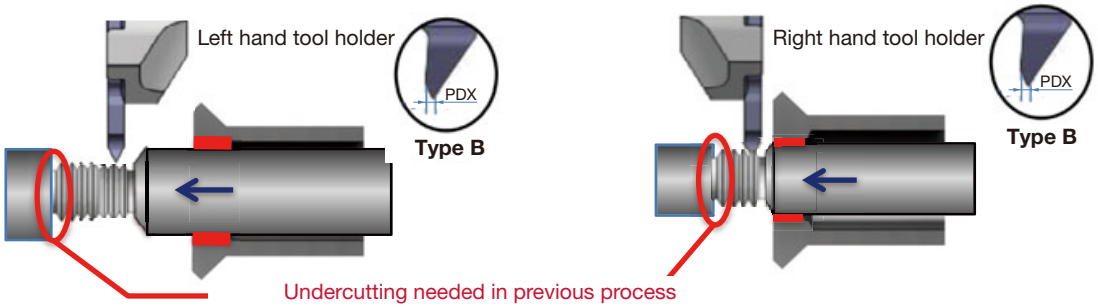
- JXTG: Insert shape
- 12: Insert size
- F: sharp edge (F: sharp edge)
- R: Hand
- 60: Thread angle
- A: Edge orientation
- 005: Corner radius

When to Use Type A Threading Insert or Type B



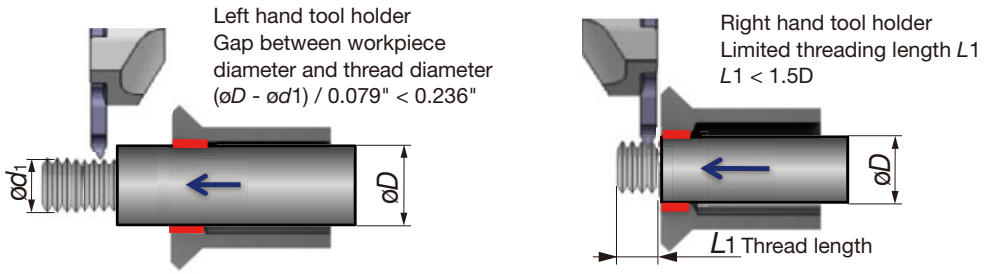
Threading close to the wall

Threading operation following back-turning

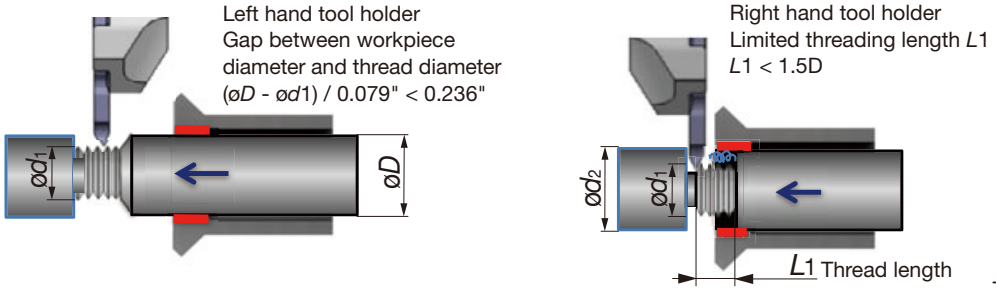


Undercutting needed in previous process

Threading Workpiece in Main Spindle



Threading operation following back-turning



Designation system for Threading Inserts

Designation system for TT-type insert

Insert

TT R 42 M -005

① Hand	
R	Right
L	Left

② Insert size (mm)	
Inscribed circle	12.7
Thickness	3.2

③ Thread type	
M	60° thread angle
W	55° thread angle

④ Corner radius (mm)	
Blank	0
-005	0.05

Toolholder

TT- 20 20 R E

① Shank height (mm)

② Shank width (mm)

③ Hand	
R	Right
L	Left

④ External or Internal	
E	External
I	Internal

Designation system for ST-type insert

16 I R 175 ISO - B

① Insert size	
Symbol	I. C. dia (mm)
6	-
11	6.35
16	9.525
22	12.7
27	15.875

② External or Internal	
E	External
I	Internal

③ Hand of cut	
R	Right hand
L	Left hand

④ Thread type	
Partial-profile inserts	
A	Pitch: 0.5 ~ 1.5 mm TPI: 48 ~ 16
AG	Pitch: 0.5 ~ 3 mm TPI: 48 ~ 8
G	Pitch: 1.75 ~ 3 mm TPI: 14 ~ 8
N	Pitch: 3.5 ~ 5 mm TPI: 7 ~ 5
Z	Pitch: 4 ~ 6 mm TPI: 6 ~ 4
Full-profile inserts	
pitch (mm)×10 or 100 TPI (Thread Per Inch) (Examples) 05: 0.5 mm pitch×10 175: 1.75 mm pitch×100 14: 14 TPI	

⑤ Thread type	
Partial-profile inserts	
60°	60° thread angle
55°	55° thread angle
TR	30° trapezoidal
ACME	29° trapezoidal
Full-profile inserts	
ISO	Metric
UN	Unified
W	Whitworth
PT	Taper pipe
NPT	National taper pipe
NPTF	National taper pipe
RAPI	API round
RD	
BAPI	API buttress
RD	Round (DIN405)
UNJ	UNJ
MJ	

⑥ Chipbreaker	
B	With (Basic selection)
M	With
CB	With
-	Without

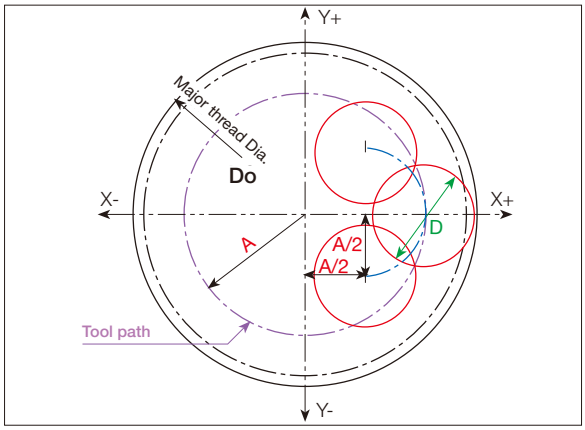
Thread Milling CNC Program for Internal Thread

THREADMILLING

Right-hand thread (climb milling) from bottom up. Program is based on tool center.
This method of programming needs no tool radius compensation value, other than an offset for wear.

$$A = \frac{Do - D}{2}$$

A = Radius of tool path
Do = Major thread diameter
D = Cutting diameter



General Program

G90 G00 G54 G43 H1X0 Y0 Z10 S (n : Number of revolutions)
G00 Z-(to thread depth)
G01 G91 G41 D1 X (A/2) Y-(A/2) Z0 F (Center of tool)
G03 X(A/2) Y(A/2) R (A/2) Z(1/8 pitch) F (Cutting edge)
G03 X0 Y0 I -(A) J0 Z (pitch)
G03 X-(A/2) Y(A/2) R (A/2) Z(1/8 pitch)
G01 G40 X -(A/2) Y-(A/2) Z0
G90 X0 Y0 Z0

Internal Thread

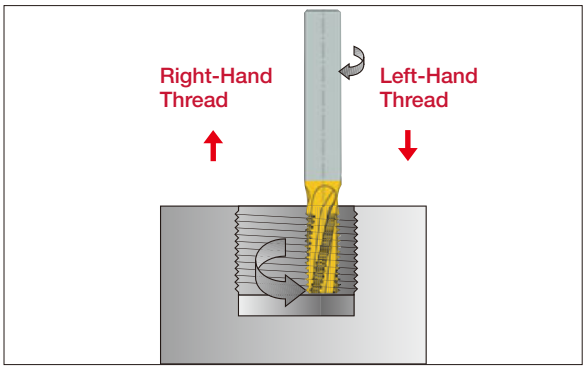
Example: M20x2.0 **IN-RH** (Thread depth 20 mm)
Tool : **MTEC1010C27 2.0ISO**
(Cutting dia. 10 mm)
A=(**Do**-**D**)/2=(20-10)/2=5
A/2=2.5
(Tool compensation of radius=0)
G90 G0 G54 G43 G17 H1X0 Y0 Z10 S4000
G0 Z-20
G01 G91 G41 D1X 2.5 Y-2.5 Z0 F840
G03 X2.5 Y2.5 R2.5 Z0.25 F420
G03 X0 Y0 I-5.0 J0 Z2.0
G03 X-2.5 Y2.5 R2.5 Z0.25
G01 G40 X-2.5 Y-2.5 Z0
G90 G0 X0 Y0 Z0
M30
%

F (Center of tool) = n x *f* x z

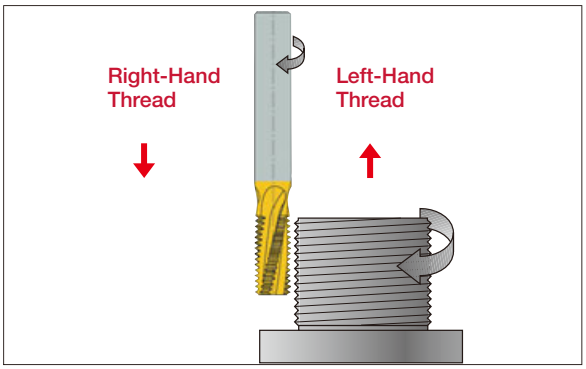
F (Cutting edge) = $\frac{Do - D}{Do}$ x n x *f* x z

n : Number of revolutions
f : rev / tooth
z : Number of edge

Internal Thread



External Thread



A thread milling operation is applicable for thread cutting in non-symmetrical parts utilizing the advantage of helical interpolation programs on modern machining centers.

For more details, please check ThreadMilling advisor.

SOLIDTHREAD Designation system

MTEC□	06	04	C	ISO
ThreadMilling Endmill Carbide	Shank Dia.	Tool Dia.	No. of Flutes C = 3 flutes D = 4 flutes E = 5 flutes F = 6 flutes	Thread Standard

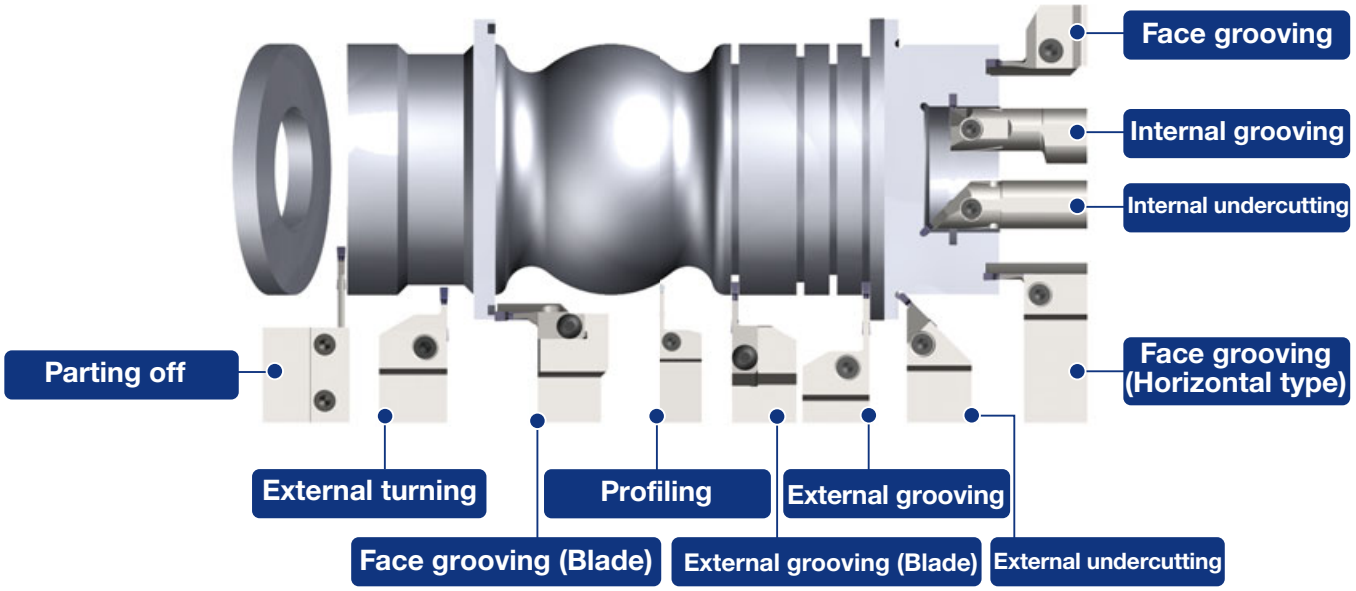
□
I - Single Point
S - Short
SH - Short for Hardened steel
B - with Coolant Bore
Q - with Coolant Bore with long neck
Z - with Coolant hole with through hole
D - with Drilling (end mill) cutting edge
E - for External thread

Grooving and Parting Tools

TUNGCUT

Features of TungCut

● Multi-functional grooving system



Mono block toolholders

High rigidity !



Adaptor

Available for various machining !



Blades with tool blocks

Suitable for large diameter machining !



● Insert Application

Insert	Application						
	Grooving			Parting	Turning		
	External	Internal	Face		External	Internal	Face
DGM / SGM	●		●	●			
DGS / SGS	●		●	●			
DGG	●		●	●			
DGL	●		●	●			
DGE	●						
DTM	●		●	●	●		●
DTE	●		●		●		●
DTX	●	●	●	●	●	●	●
DTR / STR	●		●		●		●
DTIU	● Undercutting	● Undercutting					
DTI		●				●	
DGIM / DGIS		●					
DTF			●				●
DTA					● Al wheel machining	● Al wheel machining	
SGN	●						
STH					●	●	●

Grooving and Parting Tools

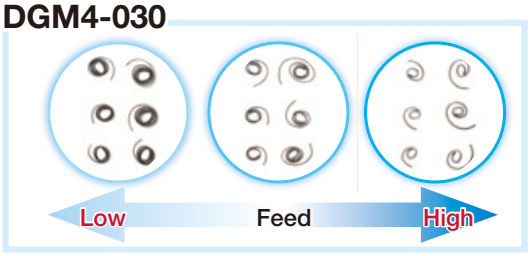
TUNGCUT

Ideal chip forms of TungCut inserts

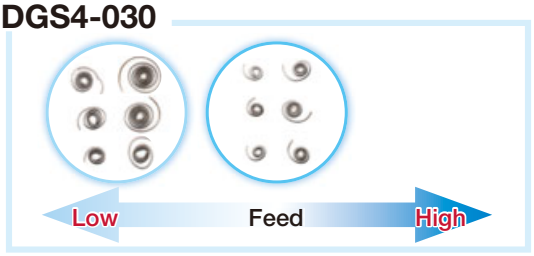
GROOVING AND PARTING

Carbon steel (1045) **P**

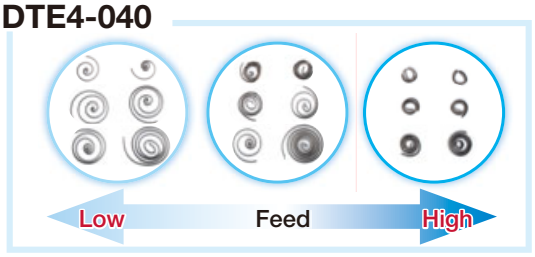
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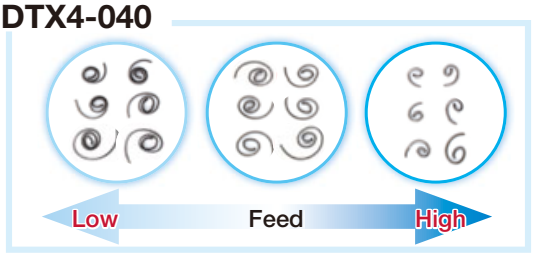
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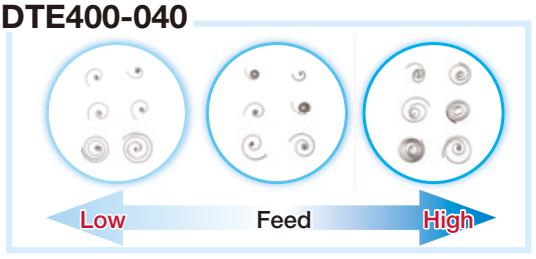
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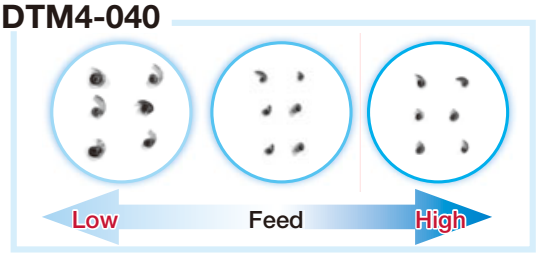
DTX4-040



DTE400-040



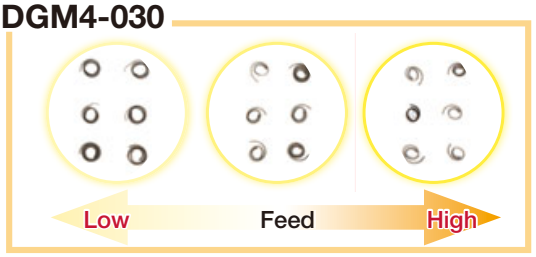
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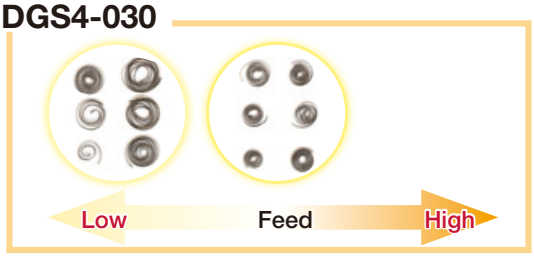
GROOVING AND PARTING

Stainless steel (304) **M**

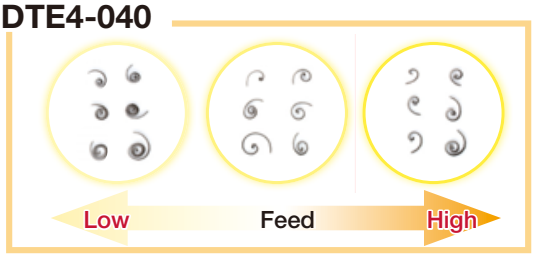
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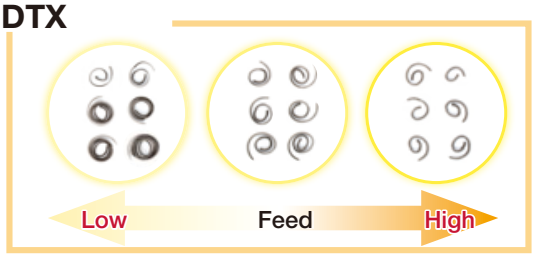
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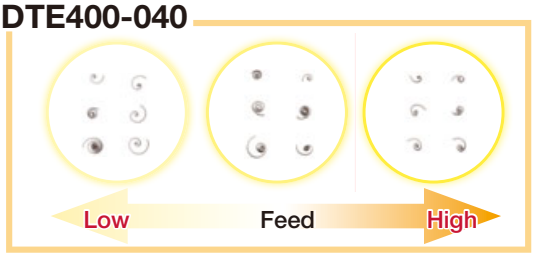
DTE4-040



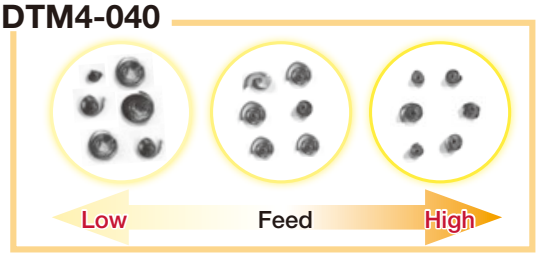
DTX



DTE400-040



DTM4-040



GROOVING, PARTING, AND TURNING

DTE

Its wide cutting edge is designed to provide good chip control at high feed rates



DTM

First choice chipbreaker for various applications. Optimized geometry for smooth chip breaking and flow



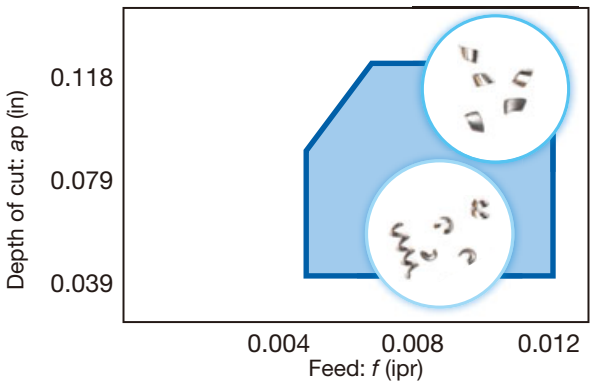
DTX

Provides good cutting performance in grooving. Its narrow cutting edge width provides excellent chip formation at low feed rates

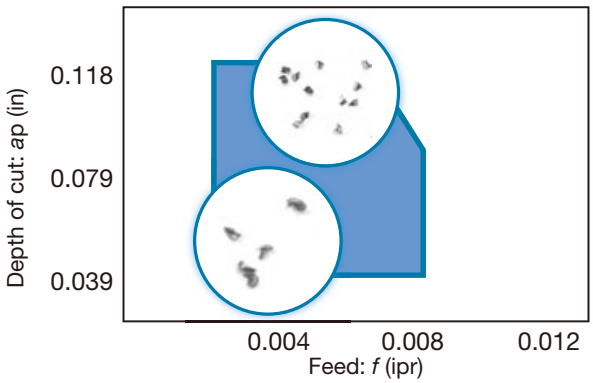


P Carbon steel
(1045)

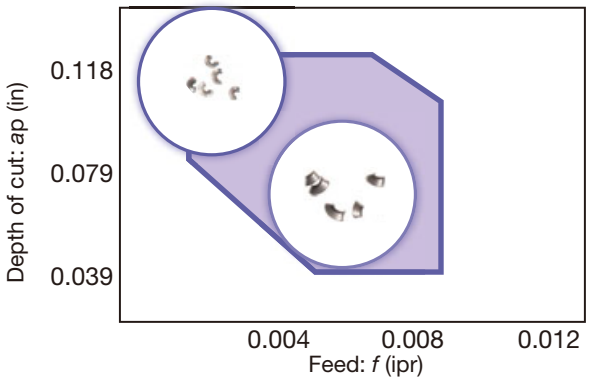
DTE4-040



DTM4-040

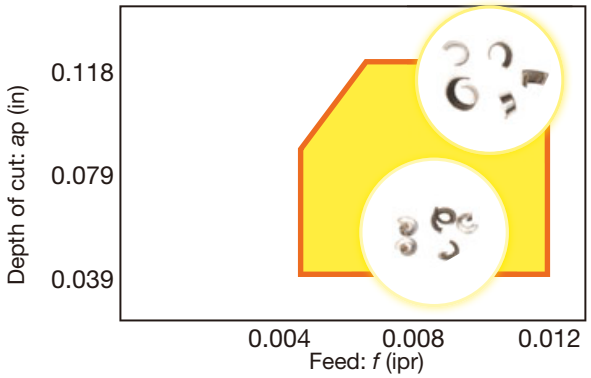


DTX4-040

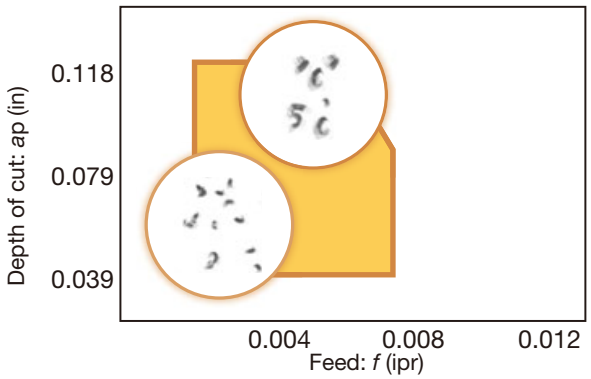


M Stainless steel
(304)

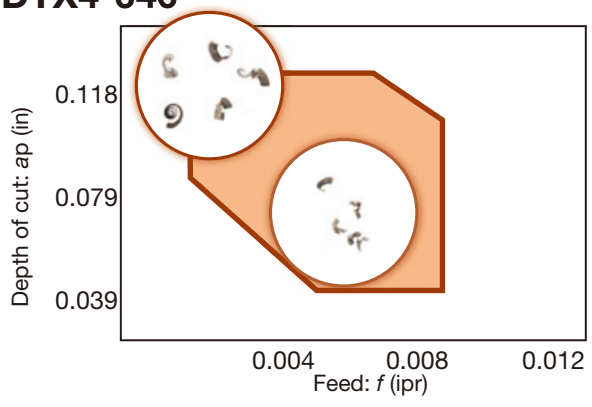
DTE4-040



DTM4-040



DTX4-040



Grooving and Parting Tools

TUNGCUT

Ideal chip forms of TungCut inserts

● Excellent chip control at low feed rates

P Bearing steel (52100)

DGL

First choice chipbreaker for bearing steel. Excellent chip control at low feed rates.



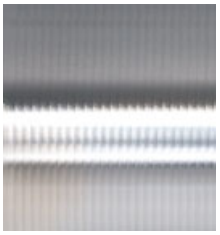
Material : SUJ2
Holder : CTER16-3T09
Insert : DGL3-025
Cutting speed : *Vc* = 164, 328 sfm
Groove width : 0.118"

	f = 0.001 ipr	*f* = 0.002 ipr	*f* = 0.003 ipr	*f* = 0.004 ipr
Vc = 164				
Vc = 328				

Notes when using STH insert

Since the wiper geometry consists of a long arc, TungCut CBN insert provides wavy surface finishing, despite the results with excellent Ra values.

TUNGCUT
Feed: *f* = 0.039 ipr



Surface quality
Ra = 0.3 µm (11.8Uin)

ISO turning insert (with 0.031" nose radius)
Feed: *f* = 0.004 ipr



Surface quality
Ra = 0.4 µm (15.75Uin)

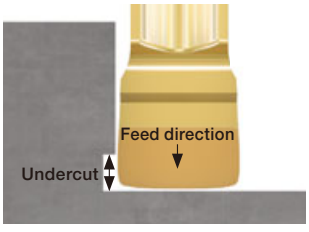
H

Insert : STH500-SR BXA10
: 2QP-CNGA120408 BXA10
Holder : CTEL16-5T12
: ACLNL164-A
Workpiece material : 4140 (60HRC)
Cutting speed : *Vc* = 492 sfm
Feed : *f* = 0.004, 0.039 ipr
Depth of cut : *ap* = 0.004"
Application : External turning, continuous cut
Coolant : Wet

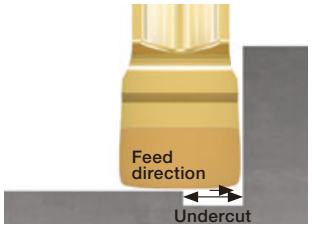
Due to the wiper geometry, ensure machine is programmed so that the wiper section of the cutting edge completely passes over the workpiece edge when external turning or face turning, otherwise, material will be left uncut on the workpiece. When cutting towards the wall or bottom, provide proper undercutting, as listed below, at the wall or bottom to eliminate uncut material.

Designation	CW±0.0 (in)	Application	Minimum undercutting required (in)
STH300-SR	0.118	External	0.059
		Face	0.016
STH500-SR	0.197	External	0.098
		Face	0.028

Face turning



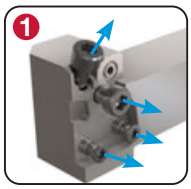
External turning



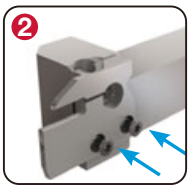
TUNGMODULAR SYSTEM

How to install and remove the blade and insert

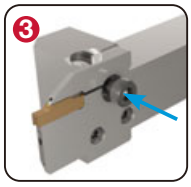
● Assembly



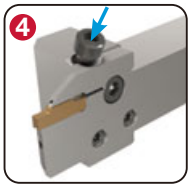
Remove all 4 screws and ensure the O rings are all in place.



Place the blade and tighten 2 bottom clamping screws.



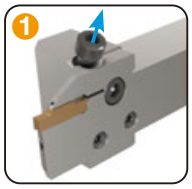
Place the insert in the pocket and tighten the fixing screw in the center.



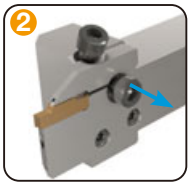
Place the long screw in the angular direction and tighten to clamp the insert.

Please follow the installation order as shown above. When the screws are tightened in the ❹→❸ order, the insert clamping may be insufficient and unstable.

● Disassembly

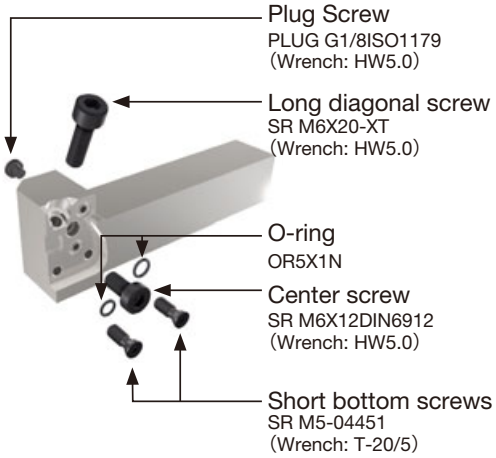


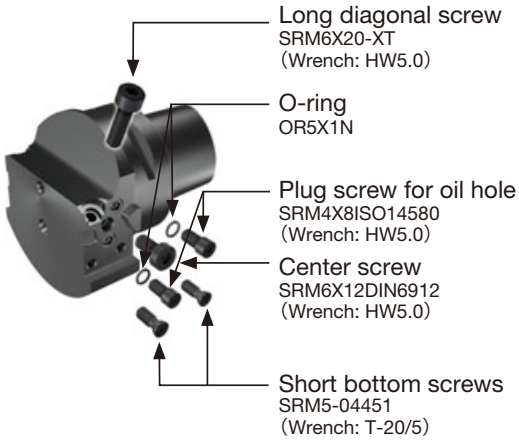
First loosen the long screw in the angular direction.



Loosen the Fixing screw in the center and remove the insert.

Loosening the long screw alone may not release the insert.





All parts listed here are included in the tool holder.

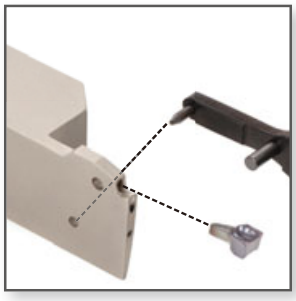
EASYMULTI CUT

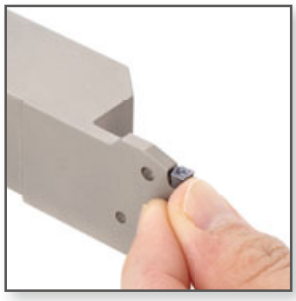
Procedure to clamp and unclamp insert

❶ Put the insert in the pocket

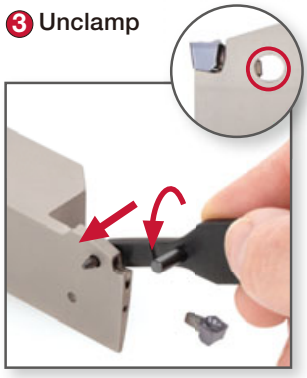
❷ Turn the wrench and push the insert into the pocket to clamp

❸ Unclamp









Grooving and Parting Tools

Points to consider for grooving and parting operations

Application	Points
Groove-turning	• To achieve best wiper effect, aP must be greater than the corner radius of the insert. • Do not use no more than 80% of the cutting edge length. • Use a chipbreaker geometry best suited for turning. • Use the toolholder with the shortest possible CDX (cutting depth maximum) to ensure maximum tool rigidity and process security. • The insert may be deflected by axial cutting force during turning, causing the workpiece diameter to be smaller than the required dimension(See Fig. 1). A minor tool length compensation may, therefore, be required. Exact amount of change can be measured by running a test workpiece. Refer to the charts in Fig. 2 below for diameter compensation values.
Parting off	• Adjustment of the cutting edge height is crucial to obtain the best possible part quality in parting operations. Adjust so that the center height is not off by more than ±0.004". • Setting the parting tool upside down aids in better chip evacuation and preventing parts from flying when parted off. • If the center height is set too low, a pip may remain on the parted surface. • Optimize tool life by reducing feed to 30% about 0.197" before the workpiece center. • Use a left- or right-handed insert with an angled front and smallest possible corner radii to prevent or minimize pips. • Use a parting tool with the thickest shank height (H) as possible for maximum tool rigidity and stability. • Use an overhang as short as possible for minimum tool deflection and process security. • When the parting distance is greater than the insert length, use a single-ended insert. • Use a insert as thin as possible. This minimizes the cutting force and saves material. • To avoid part surface from being damaged after the cut, move the tool in the axial direction to keep the cutting edge off the part before retreating the tool in the radial direction.
Face grooving	• Chip control during face grooving operations is, generally, more challenging than general grooving operations. Optimize the insert geometry considering whether the application involves grooving or groove-and-turning. • DAXMIN (axial groove inside diameter minimum) and DAXX (axial groove outside diameter maximum) in the lists indicate the diameter range of face groove width machinable from the first cut. • Choose the diameter range of the first cut (DAXMIN and DAXX). Use the tool for the largest diameter that fits your groove and turn from the outside towards the center to expand, and never cut the other way around. • Use the same feed and aP as for O.D. grooving. • For effective chip evacuation, use peck grooving method or set the tool upside down to eliminate chip nesting and chip re-cutting.
Internal grooving	• DMIN indicates minimum bore diameter that can be machined with no interference. • Optimize the insert geometry considering whether the application involves grooving or groove-and-turning. • Chip evacuation is challenging in internal grooving operations. Use coolant-through toolholder whenever possible. • Use a toolholder as thick as possible or use a vibration-resistant carbide shank to increase tool rigidity for chatter-free machining. • Always turn from the bore end towards the entrance to reduce chip nesting inside the bore and promote better chip evacuation.

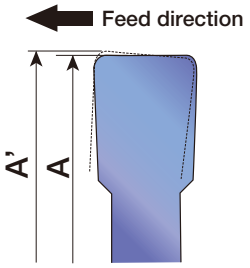


Fig. 1

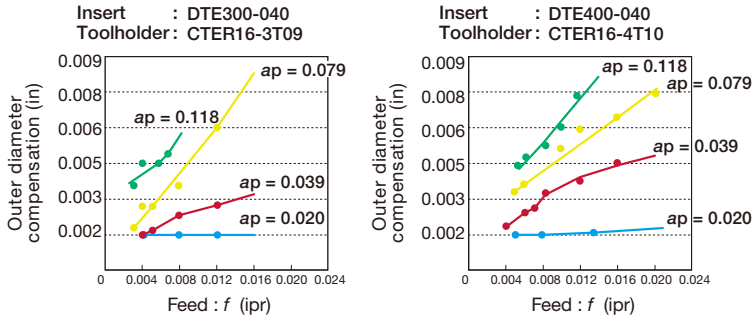
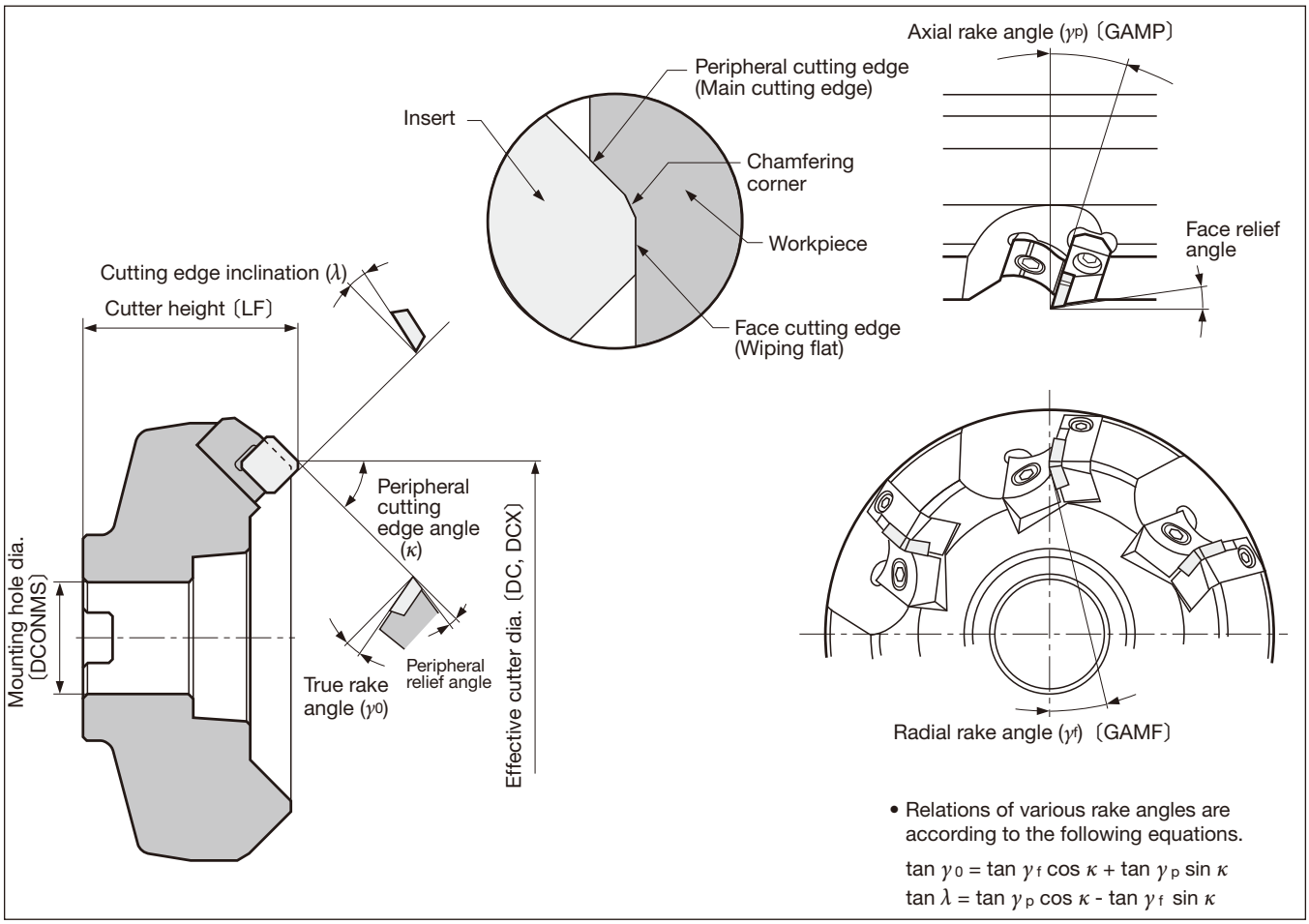


Fig. 2 Value of compensation

Milling tools

Nomenclature for face milling cutter



- Relations of various rake angles are according to the following equations.

$\tan \gamma_0 = \tan \gamma_f \cos \kappa + \tan \gamma_p \sin \kappa$

$\tan \lambda = \tan \gamma_p \cos \kappa - \tan \gamma_f \sin \kappa$

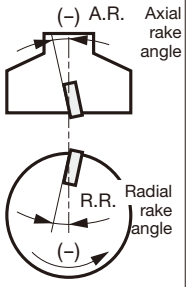
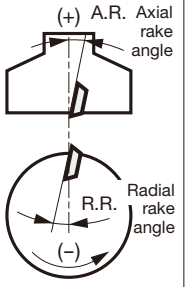
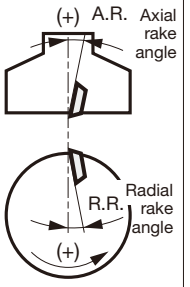
〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

Cutter geometry and applications

Condition		Rake angle combination and applicability		
		Negative-Negative	Negative-Positive	Positive-Positive
Shapes of cutting edge	γp 〔GAMP〕	-	+	+
	γf 〔GAMF〕	-	-	+
	γo	-	+	+
Workpiece material	Carbon steels, alloy steels (< 300HB)	△	◎	◎
	Stainless steels (< 300HB)	×	◎	○
	Die steels (< 300HB)	△	◎	○
	Cast irons Ductile cast irons	◎	○	○
	Aluminum alloys	×	○	◎
	Copper and its alloys	×	○	◎
	Titanium and its alloys	×	○	○
	Hardened steels (40 ~ 55HRC)	○	○	×
Features		· Higher cutting edge strength · Many usable corners of inserts	· Excellent chip removal · Higher cutting edge strength and Freer cutting action	· Most excellent cutting action
Typical examples of mills		DoPent	TungMill DoTriple-Mill	TFE12 DPD09

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

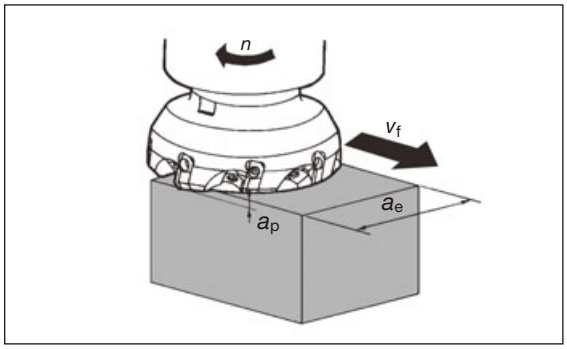
Rake angle combination

Negative type (Negative-Negative)	Negative-Positive type	Positive type (Positive-Positive)
		

Milling tools

Calculation formulas for milling

●Cutting speed



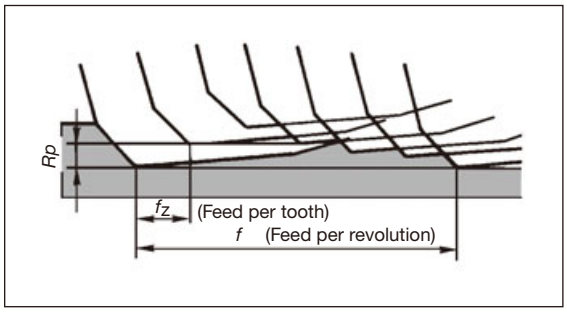
●Cutting speed (Calculated from number of revolutions)

$$SFM = \frac{RPM \times D}{3.82}$$

v_c : Cutting speed (m/min)
D : Effective diameter (mm) 〔DC, DCX〕
n : Number of revolutions (min^{-1})
$\pi \approx 3.14$

●Number of revolution (Calculated from cutting speed)

$$RPM = \frac{SFM \times 3.82}{D}$$



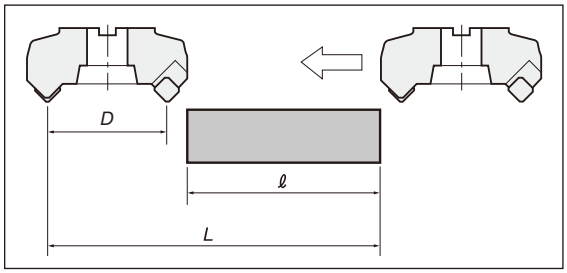
●Feed speed and feed per tooth

$$v_f = f_z \times z \times n$$

v_f : Feed speed (mm/min)
f_z : Feed per tooth (mm/t)
z : No. of teeth of the cutter
n : Number of revolutions (min^{-1})

Feed speed is relative speed of cutter and Workpiece material and in the normal milling machine, it is the table speed.
In milling, the feed per tooth is very important. The recommended cutting condition is expressed by v_c and f_z and using the above equation calculate n and v_f and input in the machine.

●Cutting time on face milling

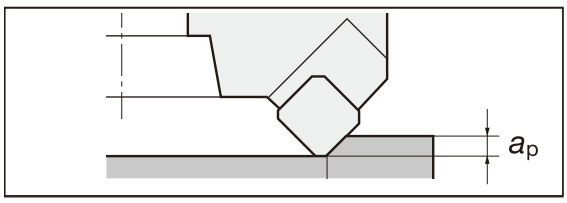


$$T_{(min)} = \frac{L}{v_f}$$

T : Cutting time (min)
L : Total table feed length.
(ℓ : Workpieces length (mm) + ØDc: Effective cutter diameter (mm) 〔DC, DCX〕)
v_f : Feed speed (mm/min)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

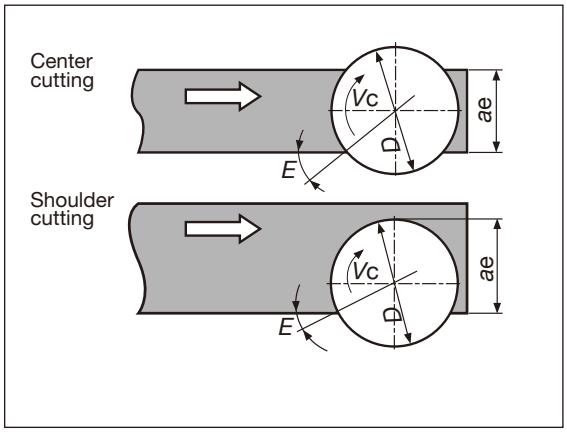
Depth of cut and width of cut



●Depth of cut

Determine by required allowance for machining and capacity of the machine. In case of mill, there are cutting limits according to shape and size of the insert. Please see spec in the catalogue.

a_p : Depth of cut (mm)



●Width of cut and engagement angle

There is an appropriate engage angle depending on the cutter diameter, cutting position, Workpiece material, etc., and ordinarily the values in the table below are used as a guide.

D : Cutter diameter (mm) 〔DC, DCX〕
E : Engage angle
a_e : Width of cut (mm)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

Center cutting

Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 42°	$a_e \fallingdotseq \frac{2}{3} D$
Cast iron	~ 53°	$a_e \fallingdotseq \frac{4}{5} D$

Shoulder cutting

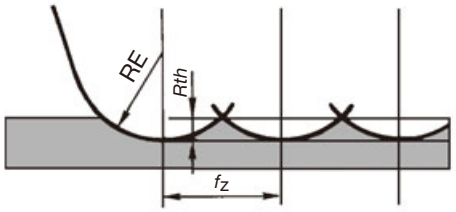
Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 30°	$a_e \fallingdotseq \frac{3}{5} D$
Cast iron	~ 40°	$a_e \fallingdotseq \frac{3}{4} D$

Roughness of finished surface

(1) Theoretical surface roughness
Theoretical roughness as shown below, is the same as for single point turning

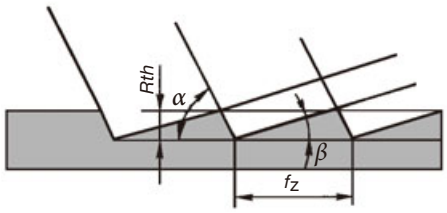
●With corner radius RE

$$Rth = \frac{fz^2}{8RE} \times 1000$$

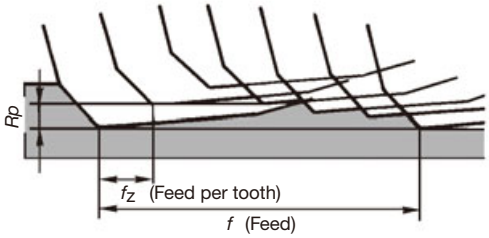


●Without corner radius RE

$$Rth = fz\left(\frac{\tan\alpha \cdot \tan\beta}{\tan\alpha + \tan\beta}\right) \times 1000$$

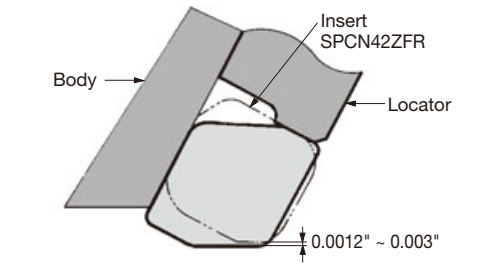


Rth : Theoretical roughness (μm)
f_z : Feed per tooth (ipt)
RE : Corner radius (in)
α : Corner angle
β : Face cutting edge angle



(2) Actual surface roughness
A facemill cutter in practice is composed of multiple point cutting edges and is prone to create uneven peaks, or an axial runout error (*Rp*) on cutting edges. One or two cutting edges being non-coplanar to the rest invariably create the dominant mark on a face-milled surface, producing periodic patterns corresponding to the feed per revolution *f* (ipr) superimposing on the feed per tooth *fz* (ipt).

Improving surface roughness



Face run out must be minimized and a low feed and high speed should be used. Also, in order to attain good finished surface at high efficiency, there are the following methods:

(1) In case of ordinary mill
Use wiper insert as shown in the figure at left.

(2) Use of super finish mill for finishing.
- Use of combination mills with finishing insert such as TFD4400-A and TFP4000IA ($a_p < 0.039$").
- Use of super finish mill for finishing such as NMS cutters and SFP4000 etc.

Milling tools

Calculating power requirement

$$P_c \text{ (HP)} = \frac{k_c \times a_p \times a_e \times v_f}{330}$$

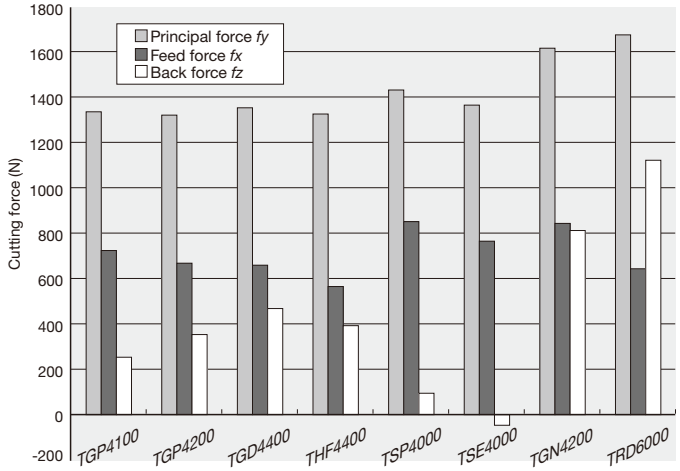
Because practical power requirements depend on the type of mill (proportional to the true rake angle) and the motor efficiency of the machine used, the result calculated from the above formula should be considered as a rough guide.

P_c : Net power requirement (HP)
k_c : Specific cutting force (KPI) [Refer to the Table below]
a_p : Depth of cut (in)
a_e : Width of cut (in)
v_f : Feed speed (in/min)

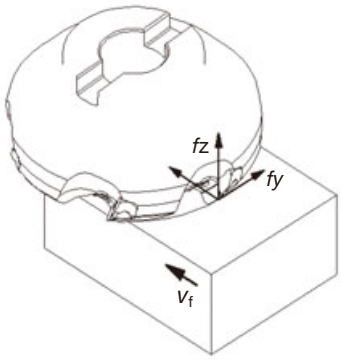
●Values of specific cutting force (k_c)

Workpiece material (JIS)	Tensile strength	Value of specific cutting force on feed per tooth k_c (N/mm^2)				
	MPa	0.004 (ipt)	0.006 (ipt)	0.008 (ipt)	0.012 (ipt)	0.016 (ipt)
SS400	75,420	312	290	276	254	239
S55C	111,679	286	270	261	255	235
SCM435	105,878	355	341	319	287	248
SKT4	(HB352)	294	292	263	244	231
SC450	75,420	393	367	350	325	307
FC250	(HB200)	241	210	191	167	149
Al (Si)	29,008	96	84	76	67	59
Brass	72,519	158	139	127	110	99

●Values of cutting force



Workpiece material : 1049 (210HB), Diameter of mill : ø6.29"
Cutting speed : V_c = 490 sfm, Feed per tooth: f_z = 0.008 ipr
Depth of cut: a_p = 0.118", Cutting by a single edge, dry



●Conversion from cutting speed to number of revolutions

(unit : min^{-1})

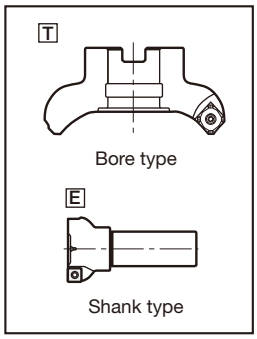
Cutter diameter DC, DCX (in)	Cutting speed : V_c (sfm)												
	33	98	164	328	410	492	656	984	1,640	2,625	3,281	6,562	13,123
0.394	318	955	1,592	3,184	3,980	4,777	6,369	9,554	15,923	25,477	31,847	63,694	127,388
0.472	265	796	1,326	2,653	3,317	3,980	5,307	7,961	13,269	21,231	26,539	53,078	106,157
0.630	199	597	995	1,990	2,488	2,985	3,980	5,971	9,952	15,923	19,904	39,808	79,617
0.787	159	477	796	1,592	1,990	2,388	3,184	4,777	7,961	12,738	15,923	31,847	63,694
0.984	127	382	636	1,273	1,592	1,910	2,547	3,821	6,369	10,191	12,738	25,477	50,955
1.181	106	318	530	1,061	1,326	1,592	2,123	3,184	5,307	8,492	10,615	21,231	42,462
1.260	99	298	497	995	1,244	1,492	1,990	2,985	4,976	7,961	9,952	19,904	39,808
1.378	90	272	454	909	1,137	1,364	1,819	2,729	4,549	7,279	9,099	18,198	36,396
1.575	79	238	398	796	995	1,194	1,592	2,388	3,980	6,369	7,961	15,923	31,847
1.969	63	191	318	636	796	955	1,273	1,910	3,184	5,095	6,369	12,738	25,477
2.480	50	151	252	505	631	758	1,011	1,516	2,527	4,044	5,055	10,110	20,220
3.150	39	119	199	398	497	597	796	1,194	1,990	3,184	3,980	7,961	15,923
3.937	31	95	159	318	398	477	636	955	1,592	2,547	3,184	6,369	12,738
4.921	25	76	127	254	318	382	509	764	1,273	2,038	2,547	5,095	10,191
6.299	19	59	99	199	248	298	398	597	995	1,592	1,990	3,980	7,961
7.874	15	47	79	159	199	238	318	477	796	1,273	1,592	3,184	6,369
9.843	12	38	63	127	159	191	254	382	636	1,019	1,273	2,547	5,095
12.402	10	30	50	101	126	151	202	303	505	808	1,011	2,022	4,044

Note: In this table, the effects of centrifugal force on the rotating balance of the tool and the toolholder, flying risk of cutter parts, and limited value of toolholder destruction are not considered. Therefore, when using the tool at high speeds, be sure to observe the specified condition range.

Trouble shooting in face milling

Trouble	Possible causes	Countermeasures
Rapid wear of cutting edge	• Improper insert grade selection (Insufficient wear resistance)	• Use a grade with high wear resistance P30 → P20
	• Excessive cutting speed	• Select cutting speed suited for Workpiece material and insert grade
	• Inadequate feed	• Use standard cutting condition in catalog as guide
Rapid chipping of cutting edge	• Improper Insert grade selection (Insufficient toughness)	• Use a grade with high fracture resistance P10 → P20
	• Cutting hard material and unfavorable surface condition	• Decrease cutting speed • Use cutter with strong cutting edge
	• Excessive feed	• Proper selection of feed conditions, using recommended cutting conditions in catalog as guide
	• Excessive pressure applied on cutting edge	• Proper selection of engaging angle
	• Machining superalloys	• Use a negative-positive type cutter with large corner angle
Fracturing	• Cracking due to thermal shock	• Select insert grade of stronger thermal shock resistance • Decrease cutting speed
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Cutting hard material	• Use cutter with stronger cutting edge • Use cutter of larger corner angle
	• Obstruction to chip flow • Recutting of chips after chip welding	• Use cutter with better chip expulsion • Select insert grades difficult for chips to adhere Cemented carbides → cermets, coated grades • Use air blow
	• Excessively slow cutting, too fine feed	• Select cutting speed and feed optimized for insert grade and Workpiece material
Excessive chip welding or build-up on cutting edge	• Cutting soft material such as aluminum, copper, mild steel	• Use cutter with large rake angle
	• Cutting stainless steel	• Coated grades (AH130、AH3135)
	• Use of cutter with negative rake or too small rake angle	• Use cutter with large rake angle
Rough finish	• Effect of built-up edge	• Increase cutting speed • Appropriate cutting depth (finish allowance) • Change insert grade For steels : P → coated → cermet For cast irons : K → coated
	• Effect of face cutting edge run out	• Proper installing of inserts • Use insert of high dimensional accuracy • Cleaning of insert pocket
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Remarkable feed marks	• Feed per revolution to be set within flatland width • Use wiper insert type cutter such as T/EAW13 • Use cutter exclusively for finishing
Chattering	• Unstable clamping of workpiece	• Check clamping method of workpiece
	• Cutting of welded construction of thin steel plate	• Use cutter of large rake angle and small corner angle
	• Excessive cutting condition	• Re-examine allowable chip removal rate according to motor HP
	• Face milling of narrow width workpiece	• Use cutter of small cutter diameter and with many teeth
	• Too many simultaneous cutting teeth engagement	• Reduce No. of teeth

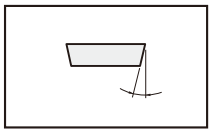
New Designation System for Milling Cutters



Symbol	Type
T	Bore type
E	Shank type

① Type

H	Hybrid TAC Mill Series



Symbol	Relief angle
C	7°
P	11°
D	15°
E	20°
F	25°
N	0°
Others	Special

③ Relief angle

Symbol	Hand
R	Right
L	Left

⑤ Direction of cut

Symbol	Unit
M	mm
U	in

⑦ Unit

Symbol	Type
T~: General type	
–	JIS
E	ISO
A	ANSI
E~: Shank type	
–	Cylindrical
W	Weldon
C	Combination

⑨ Attachment specification

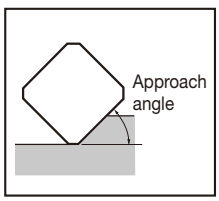
⑩ Number of inserts

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
T	P	A	10	R	200	U	0075	A	04

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
E	P	A	15	R	150	U	0125	W	02	L

② Angle, Category

Symbol	Cutting edge angle
P	90° ~ 80°
E	80° ~ 70°
D	60° ~ 50°
A	50° ~ 40°
L	With long cutting edge
Others	Special

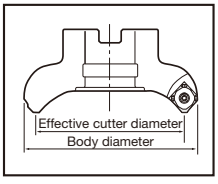


④ Cutting edge length

Symbol	Size (ℓ)
S	
T	
R	
H	
A	

⑥ Effective cutter diameter

Symbol	Size
M: Unit in mm	
080	80 mm
200	200 mm
I: Unit in inch	
200	2 in



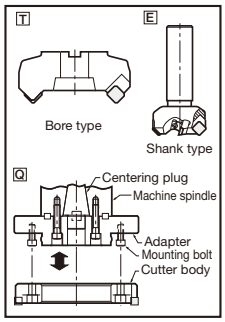
⑧ Attachment size

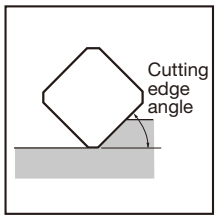
Symbol	Size
M: Unit in mm Hole diameter	
20.0	20 mm
25.4	25.4 mm
31.7	31.75 mm
47.6	47.625 mm
I: Unit in inch Hole diameter	
0075	0.75 in
0125	1.25 in
0200	2 in
E~: Shank type Shank diameter	
10.0	10 mm
12.0	12 mm
16.0	16 mm
25.0	25 mm
32.0	32 mm

⑪ Additional feature

Symbol	Type
W	Wedge clamp
L	Long shank
LE	Long edge
CS	Carbide shank
N	No coolant hole

Previous products





Symbol	Type
V	Vertical insert
Q	Quick change
E	Shank
T	Bore
S	Special
D	All PCD tipped
Q	All PCBN tipped

① Type

Symbol	Cutting edge angle
X	Others
Z	Others
V	Others
P	90° ~ 80°
E	80° ~ 70°
D	60° ~ 50°
A	50° ~ 40°

② Angle

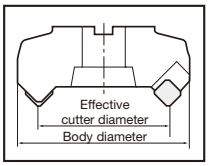
Symbol	Relief angle
C	7°
D	15°
E	20°
F	25°
N	0°
P	11°
X	Others



③ Relief angle

R Symbol	R Size	S Symbol	S Size	C Symbol	C Size	T Symbol	T Size	Inscribed circle dia. (in)
		06	0.250	06	0.255	11	0.433	0.250
		07	0.313	08	0.319	13	0.543	0.313
09	0.375	09	0.375	09	0.382	16	0.650	0.375
10	0.394	–	-	–	-	–	-	0.394
12	0.472	–	-	–	-	–	-	0.472
12	0.500	12	0.500	12	0.508	22	0.866	0.500
15	0.625	15	0.625	16	0.634	27	1.080	0.625
16	0.630	–	-	–	-	–	-	0.630
19	0.750	19	0.750	19	0.760	33	1.300	0.750
20	0.787	–	-	–	-	–	-	0.787
25	0.984	–	-	–	-	–	-	0.984
25	1.000	25	0.630	25	1.016	44	1.730	1.000
31	1.250	31	1.250	32	1.268	55	2.160	1.250

④ Cutting edge length



Symbol	Effective diameter (in)
050	1.97
063	2.480
080	3.150
100	3.937
125	4.921
160	6.299
200	7.874
250	9.843
315	12.402
355	13.976
400	15.748

⑤ Effective cutter diameter

Example
Metric system

①	②	③	④	⑤	⑥
T	A	D	12	063	R

Example
Inch system

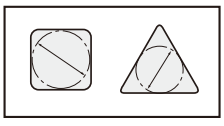
①	⑧	③	⑨	⑩	⑪	⑥	⑦
T	M	D	4	4	06	R	I

Symbol	Application, geometry etc.
M	For machining centers
F	For finishing
G	General purpose
S	For square shoulder milling
H	High rake geometry
P	Negative axial, positive radial rake geometry
R	Use round inserts
U	For difficult to cut materials
C	For chamfering
L	Long edge type
T	For threading

⑧ Application,etc.

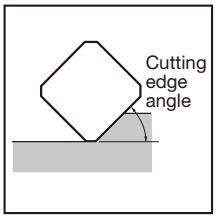
Symbol	I. C. (in)
3	0.375
4	0.500
5	0.625
6	0.750
7	0.875
8	1.000
9	1.250

⑨ Size of applicable insert



Symbol	Cutting edge angle
0	90° ~ 80°
1	80° ~ 70°
2	70° ~ 60°
3	60° ~ 50°
4	50° ~ 40°
5	40° ~ 30°
6	30° ~ 20°
7	20° ~ 10°

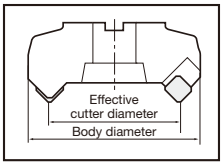
⑩ Angle



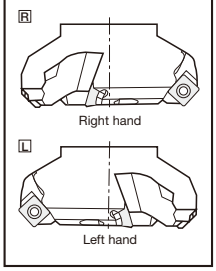
Symbol	Effective diameter (in)
50	1.970
63	2.480
03	3.150
04	3.937
05	4.921
06	6.299
08	7.874
10	9.843
12	12.402
14	13.976
16	15.748

Note: For diameter of less than 80mm,nominal dimensions (mm) of effective diameter are shown

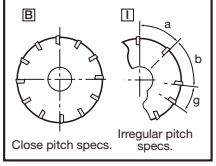
⑪ Effective cutter diameter



⑥ Direction of cut



Symbol	
B	Close pitch
I	Irregular pitch
A(-A)	Modified type
S	For distinguishing shank size
L	Long shank



⑦ Additional feature

Note: The above nomenclature is not applicable for VSN6000I, MS cutter, TCB, PES1500 and TBN etc.

Designation System for Milling Inserts

Symbol	Hole	Shape of hole	Chipbreaker	Shape
N	Without	–	Without	
R			Single-sided	
F			Double-sided	
W	With	Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	–	–	–	

④ Groove and hole

Shape	Cutting edge length (ℓ)
S	
T	
R	
H	
A	

⑤ Cutting edge length

Symbol	Thickness (mm)
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Thickness

⑥ Thickness

(Example) **Metric**

①	②	③	④	⑤
P	N	C	U	09

(Example) **Inch**

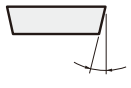
①	②	③	④	⑤
S	D	K	N	4

① Shape

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
E		75°	
G		70°	
L	Rectangular	90°	
A	Parallelogram	85°	
R	Round		
W	Wiper	80°	
W	Special	–	
O	Octagonal	135°	
P	Pentagonal	108°	
X	Special	Others	
Y	Special		
Z	Special		

② Relief angle

Symbol	Relief angle
C	7°
D	15°
E	20°
F	25°
G	30°
M	Others
N	0°
P	11°
Q	Other applications
O	Other applications
X	Other applications
S	Other applications
W	2-step relief

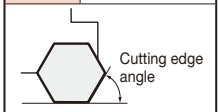


③ Accuracy (mm)

Symbol (class)	Corner height (m)	Thickness (s)	I. C. dia. (ød)
A	± 0.005	± 0.025	± 0.025
C	± 0.013	± 0.025	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
H	± 0.013	± 0.025	± 0.013
K	± 0.013	± 0.025	± 0.05 ~ ± 0.13
M	± 0.08 ~ ± 0.18	± 0.13	± 0.05 ~ ± 0.13
N	± 0.08 ~ ± 0.18	± 0.025	± 0.05 ~ ± 0.13

Standard I. C. dia.	I. C. dia. (ød) tolerance		Corner height (mm) tolerance	
	J, K, L, M, N	U	M, N	U
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525				
12.7	± 0.08	± 0.13	± 0.13	± 0.2
15.875	± 0.1	± 0.18	± 0.15	± 0.27
19.05				
25.4	± 0.13	± 0.25	± 0.18	± 0.38

Symbol	Cutting edge angle
A	45°
D	60°
E	75°
F	85°
G	70°
H	87°
P	90°
U	Special, small entering angle
Z	Special, universal



⑦ Cutting edge angle

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special



⑧ Wiper relief angle

Symbol	Cutting edge	Shape
F	Sharp	
E	Round	
T	Chamfer	
S	Combination	
P	Combination	

⑨ Major cutting edge

Symbol	Hand of insert
R	Right
L	Left
N	Without

⑩ Hand of insert

Symbol	Description
HM	General-purpose high feed milling chipbreaker
MM	General-purpose milling chipbreaker
MW	Milling insert with wiper edge
B	Milling insert for burr removal
D	Insert with diamond sintered body
W	Wiper insert (multiple corners)
WS	Wiper insert (single corner)
WD	Wiper insert (with diamond sintered body)
BD	Wiper for burr removal (diamond sintered body)
MJ	General-purpose milling chipbreaker
MH	Milling chipbreaker with reinforced cutting edge
ML	Milling chipbreaker for low cutting force
MS	Milling chipbreaker for stainless steel
HJ	High feed milling chipbreaker
AJ	Milling chipbreaker for non-ferrous metal
NMJ	General-purpose milling chipbreaker with serration
NAJ	Milling chipbreaker with serration for non-ferrous metal

⑪ Supplementary symbol

⑥	⑦	⑧	⑨	⑩		⑪
05	G	N	E	R	-	MJ
2	Z		T	N		16
⑥	⑦		⑨	⑩		⑪

④ Groove and hole

Symbol	Shape of hole	Hole
A	Without	With
F	Double side	Without
G	Double side	With
M	Single side	With
N	Without	With
U	Without	Without
W	Without	With

⑤ Inscribed circle (I. C.)

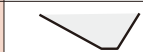
Symbol		I. C. dia. (mm)
Inch	3	9.525
	4	12.7
	5	15.875
	6	19.05

⑥ Thickness

Symbol		Thickness (mm)
Inch	2	3.18
	3	4.76
	4	6.35
	6	9.52

⑦ Corner radius

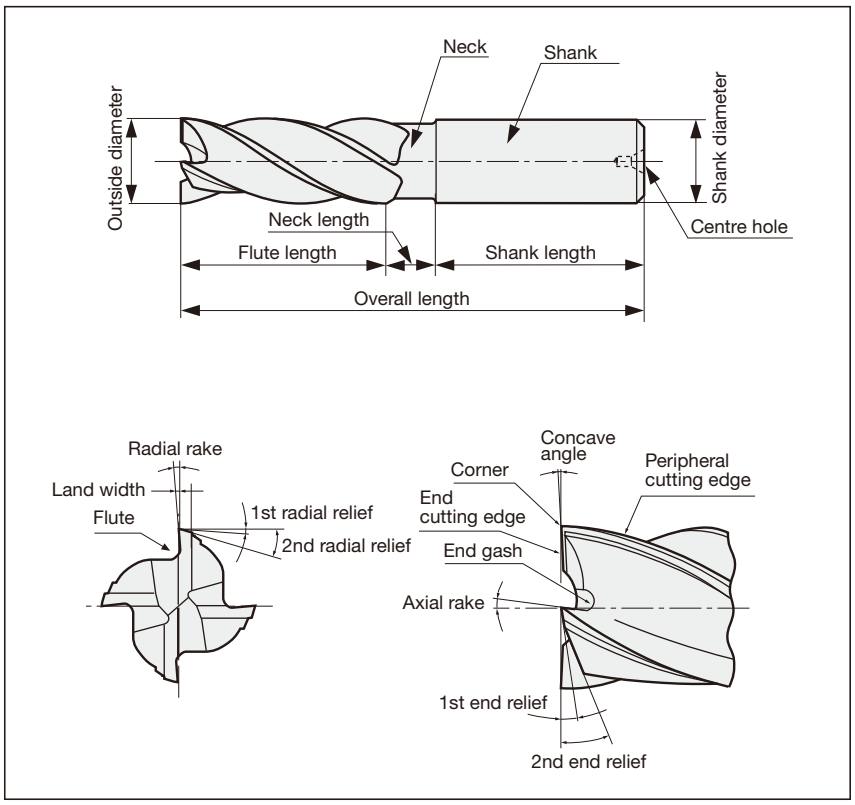
Symbol	Corner radius (mm)
1	0.4 (0.397)
2	0.8 (0.794)
3	1.2 (1.191)
4	1.6 (1.588)
5	2.0 (1.984)
6	2.4 (2.381)

Symbol	Description
F	Special design (e.g. for MS cutter)
H	 Chamfer for corner angle 60°
S	 Chamfer for corner angle 15°
Z	 Flat chamfer

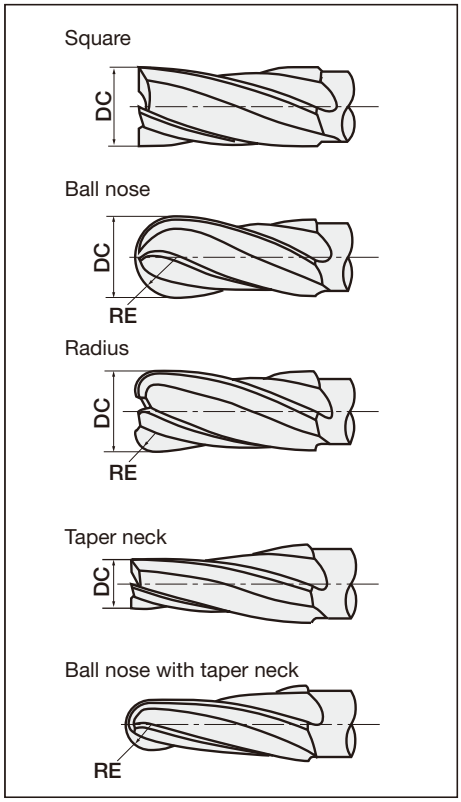
*For wiper inserts, the designation uses “W” as the shape symbol of inch items. For metric items, the shape symbol is the same as that of regular inserts, and a supplementary symbol, such as W, WS, and WD, is at the end of each designation.

Solid Carbide Endmills

Part details

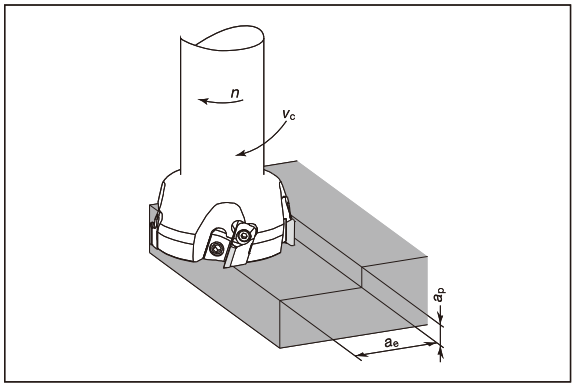


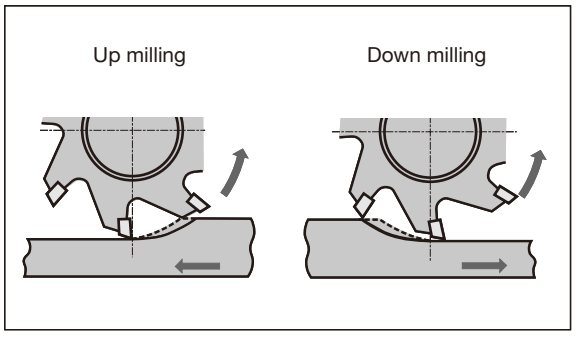
Types



Cutting condition of Endmills

● Cutting speed





● **Cutting speed** (Calculated from number of revolutions)

$$SFM = \frac{RPM \times D}{3.82}$$

SFM: Cutting speed
D : Effective diameter (in) (DC)
RPM: Number of revolutions (min-1)

● **Number of revolution** (Calculated from cutting speed)

$$RPM = \frac{SFM \times 3.82}{D}$$

● **Feed speed and feed per tooth**

$$v_f = f_z \times z \times n$$

v_f : Feed speed (in/min)
f_z : Feed per tooth (ipt)
z : No. of teeth of the endmills
n : Number of revolutions (min^{-1})
( ) The notation in the brackets is the one used in the catalog (ISO compliant)

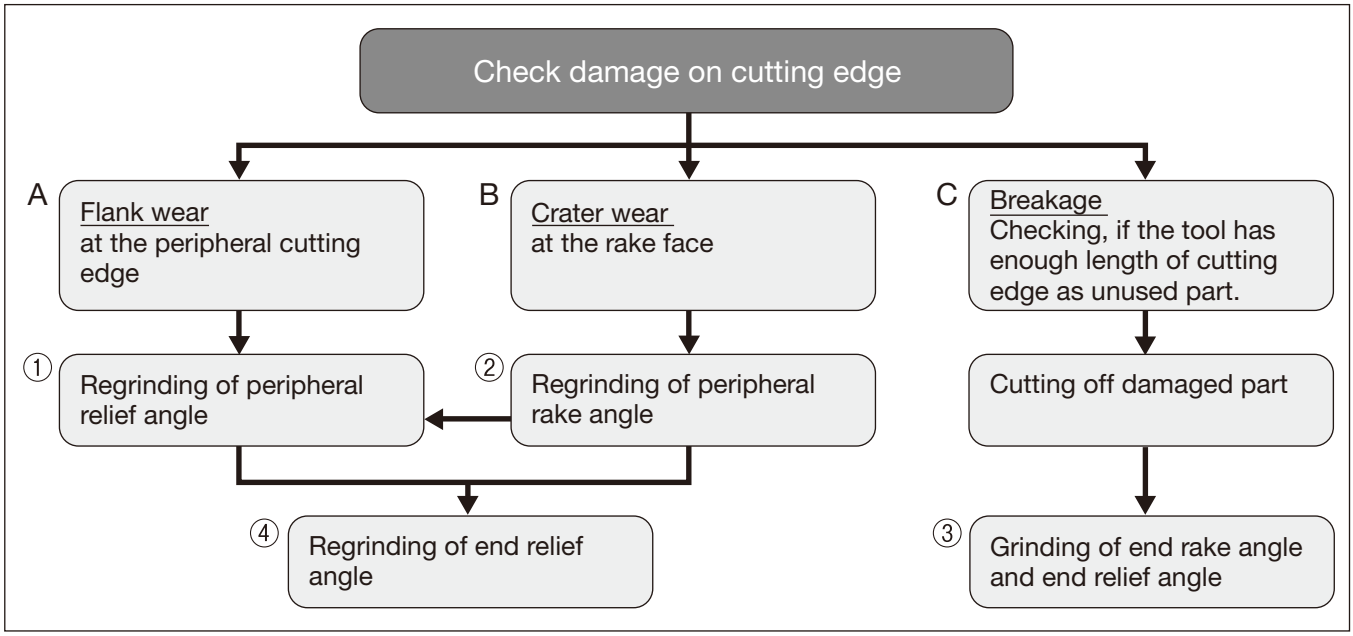
● **Depth of cut**

The necessary capacity of the machine is limited by the length of cut edge of the endmill.

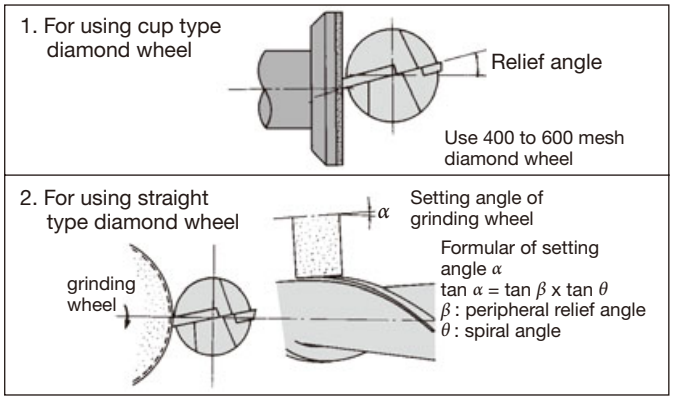
● **Up milling and down milling**

Down milling generally produces better tool life and surface roughness.
In case of cast iron sand inclusion or welding surface, up milling is recommended.

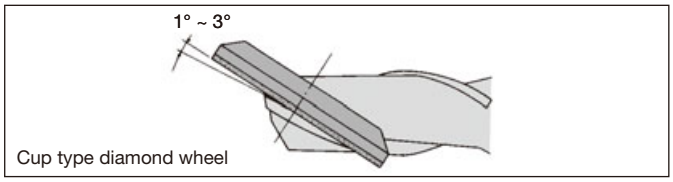
Regrinding procedures of solid carbide endmill



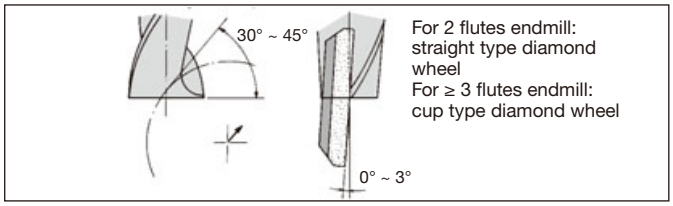
1 Regrinding of end relief angle



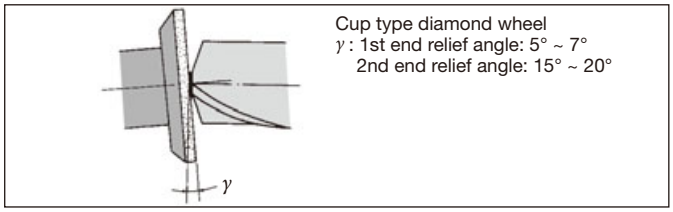
2 Regrinding of peripheral rake angle



3 Regrinding of end rake angle (End gash)



4 Regrinding of end relief angle



Notice of regrinding

(1) If, after checking the damage of the cutting edge, the damage is as case “A” or “B” of the flow chart, the tool must be reground.
Too much damage of the cutting edge requires too much stock removal and thus reduces tool life.
(2) Please use diamond grinding wheel.
(3) Peripheral relief angle must be ground between 18° and 10°.
Relief angle of small diameter cutters for aluminum machining must be a large degree.
(4) First check if “C” in flow chart can be adapted for the case of coated endmill or not.
If procedure “C” can be adapted for regrinding, tool life after the grinding would be more improved than new one. The reason is remaining coated layer of cutting edge and shorter tool length will keep much higher rigidity of the tool than before regrinding.
(5) Please check run out of peripheral cutting edge, face cutting edge, with Vee block after regrinding.
The value of the run out must be controlled within 0.0004".

Notice for regrinding of ball nose endmill

- Regrinding of relief angle only is available. The dimension of nose radius will be smaller after grinding.
- Honing of cutting edge is necessary after regrinding.

Solid Carbide Endmills

Trouble shooting in Endmilling

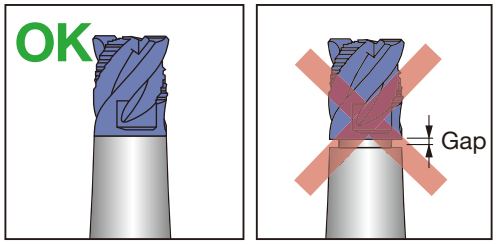
Trouble	Possible causes	Countermeasures
Breakage	● At the start of machining ● At the end of machining	● Reduce feed. ● Reduce tool overhang length. ● Exchange to short cutting edge tool.
	When usual machining	● Reduce feed. ● Managing tool life → Exchange in shorter time. ● Replace chuck or collet to new one. ● Reduce tool overhang length. ● Make optimum honing on the edge. ● Reduce flutes. E.g. 4 flutes → 3flutes, or 2flutes. ● Use enough coolant. Change direction of supplying coolant.
	When change the direction of feed	● Use the circular interpolation in NC machine. Stop feed shortly before changing. ● Lower feed around changing part. ● Replace chuck or collet to new one.
Fracture on cutting edge	Chipping on corner edge	● Chamfer the corner with hand-stick grinder. ● Down cutting ⇒ Upward milling.
	Chipping on boundary part	● Change cutting direction, Down cutting → Upward milling. ● Reduce cutting speed.
	Chipping on central part or all edges.	● Make slight honing on the edge. Or make honing bigger. ● Change spindle revolution number. ● Increase cutting speed. ● If chattering, increase feed. ● Use coolant or air blast. ● Replace chuck or collet to new one. ● Decrease cutting speed.
	Fracture on cutting edge	● Decrease feed. ● Reduce flutes. E.g. 4 flutes → 3flutes, or 2flutes. ● Make slight honing on the edge. Or make honing bigger. ● Replace chuck or collet to new one. **【For Solid carbide endmill】** ● Decrease cutting speed. ● Use enough coolant. Change direction of supplying coolant.
Large wear in short time		● Decrease cutting speed. ● Change cutting direction, Upward milling → down cutting. ● Increase feed. ● Use coolant or air blast. ● In reground tool, grind flank face with FINER wheel.

(Continued on next page)

Trouble	Possible causes	Countermeasures
Poor surface finish	Bright, but Wavy surface	● Reduce feed per tooth. ● Increase flutes; E.g. 2 flutes → 3flutes, or 4flutes.
	Small chips are welded on surface.	● Increase cutting speed. ● Use coolant or air blast, or increase coolant. ● Make slight honing on the edge. ● Upward milling → Down cutting. ● Increase feed per tooth. Increase Depth of Cut.
	Scratches on the surface	● Make slight honing on the edge. ● Use non-water soluble coolant. ● Down cutting → Upward milling.
	Poor surface by over cutting	● Reduce depth of cut. ● Increase cutting speed. ● Reduce feed per tooth.
Poor accuracy	Finish size becomes a minus tendency.	● Upward milling → Down cutting. ● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed.
	Poor straightness	● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed. ● Increase flutes; E.g. 2 flutes → 4flutes. ● Reduce feed per tooth. ● Check the edge. Change tool, when needed.
Chattering		● Increase feed per tooth. Reduce feed per tooth, when current feed is more than 0.003 ipr. ● Change cutting speed. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Use 2 flutes tool in roughing. Use 4 flutes tool in finishing. ● Down cutting → Upward milling.

CAUTIONARY POINTS IN USE

· The cutting heads specified by Tungaloy must be used. Avoid using alternate heads that are not Tungaloy products as this will damage the shank and can cause severe accident or injury.
· Before setting the head, clean the connection screw with an air blast or a wiping cloth to remove chips and other foreign matter that may remain.
· Do not apply the lubricant to the connection screw.
· Please use the correct wrench with the correct cutting head. Tighten the head slowly until the face of the head contacts the shank. (Please refer to the picture shown on the right.) Do not re-tightening or over-tightening. Excessive tightening may cause the cutting head to break.
· Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.



SOLIDMEISTER Designation System

TE	Solid Carbide
TC	Ceramic

❶ Endmill Code

C	Square endmill
CK	Square endmill for Ti
CA	Square endmill for aluminum
CC	Square endmill with chamfered
CH	Square endmill for finishing
B	Ball nose
FF	High feed
FS	FINISHMEISTER
CP	Chip splitter
CR/RC/RF	Rougher
TR	Tapered & radius
BRF	Ball nose & rougher

❷ Endmill type

004	0.4
045	4.5
100	10

❸ Cutting diameter (mm)

❶	❷	❸			❻
TE	C	009	A	2 -	0135
TE	C	100	E	4L -	22
			❹	❺	❻

❹ Helix angle	
N	0°
C	10°
T	20°
A	30°
E	38°
B	45°
D	50°
F	55°
H	Variable helix

❺ No. of flutes	
2	2 flutes
3	3 flutes
4	4 flutes
4M	4 flutes & medium length
4L	4 flutes & long length
4X	4 flutes & extra long length
4MF	4 flutes & medium length for hardened steel
44	4 variable pitch flutes

❻ Effective cutting length (mm)	
006	0.6
0135	1.35
06	6
20	20

Tolerance

Diameter range	Cutting diameter DC^{e8}	Shank DCONMS^{h6}
< 3	-0.014 - 0.028	0 - 0.007
3 - 6	-0.02 - 0.038	0 - 0.008
6 - 10	-0.025 - 0.047	0 - 0.009
10 - 18	-0.032 - 0.059	0 - 0.011
18 - 30	-0.04 - 0.073	0 - 0.013

/04	4
/10 /1.5	10 / 1.5°
/14	14

⑦ Length of neck / Angle neck (mm)

C	Cylindrical
W	Weldon

⑧ Shank type

055	5.5
08	8
4	4

⑨ Shank diameter (mm)

⑦	⑧	⑨		⑩	⑪
/06	C	4	M		E66
/32	C	10	CF-		72

⑩ Workpiece material / Additional feature

-	General
S	Stainless steel
M	Steel medium hardness ≤ 55 HRC
H	Steel high hardness ≥ 55 HRC
R02A	Aluminum
CF	VARIABLEMEISTER
R16	Corner radius: 1.6

⑪ Overall length / Corner radius

66	66 mm
180	180 mm
E**	Eco type
M	Medium
R08	Corner radius: 0.8

TUNGMEISTER Designation System

Shank

V	SS	037	L300	S	06	U	S
①	②	③	④	⑤	⑥	⑦	⑧

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	for T-Slotting
AD	TungFlex adapter

③ Shank diameter (in)	
031	ø0.315
037	ø0.375
050	ø0.500
062	ø0.625
075	ø0.750
100	ø1.000

④ Length (in)	
L300	3.000

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15

⑦ Additional feature	
U	Inch

⑧ Shank material	
S	Steel
C	Carbide
W	Tungsten

Head

- Square endmill

V	E	E	031	L20	R000	-	U	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

- Ball nose endmill

V	B	D	075	L62	-	BG	-	U	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨	⑩

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball
R	Radius
FX	for high feed
CA	for chamfering
CP	Spot drilling
CW	for chamfering (front and back)
CR	for R chamfering
GC	for counter boring
DP	for center drilling
S	for slotting
T	for T-slot milling

③ Helix angle / Rake face	
B	0°
C	15°
D	30°
E	38° ~ 50°
F	60°
T	Land
H	Variable helix

④ Diameter (in)	
050	ø0.500
100	ø1.000

⑤ Cutting edge length (in)	
Length	
L37	0.375
L87	0.875

⑥ Corner shape / Angle	
Chamfer type	
C006	0.006 x 45°
C012	0.012 x 45°
C024	0.024 x 45°
Chamfering head	
A30	30°
A60	60°
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision

⑦ Additional feature	
I	Irregular pitch
A	for aluminum
R	for roughing
C	Combined edge

⑧ Additional feature	
U	Inch

⑨ The number of flutes	
General	
02	2
06	6

⑩ Connection screw size	
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15

Shank

V	SS	D10	L070	S	06	-	W	-	A
①	②	③	④	⑤	⑥		⑦		⑧

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	T-slotting
AD	TungFlex adapter
ER	ER collet holder

③ Shank diameter (mm)	
D06	ø6
D08	ø8
D10	ø10
D12	ø12
D16	ø16
D20	ø20
D25	ø25
D32	ø32
VSC, VAD type	
100	ø10
120	ø12
130	ø13
180	ø18
210	ø21
VER type	
11A	Collet size
16A	Collet size

④ Length (mm)	
L070	70

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
04	S04
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15
21	S21

⑦ Shank material	
S	Steel
C	Carbide
W	Tungsten

⑧ Additional feature	
A	with coolant hole
M	Thread size (TungFlex adapters)

Head

● Square endmill

V	E	E	080	L05.0	R00	-	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨

● Ball nose endmill

V	B	D	200	L15.0	-	BG	-	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball
R	Radius
FX	High feed
CA	Chamfering
CP	Spot drilling
DS	Spot drill with helical flutes
CW	Chamfering (front and back)
CR	R chamfering
GC	Counterboring
DP	Center drilling
S	Slotting
TB	T-slotting
FM	Face milling
BO	Taper barrel
BN	Bull nose
BL	Lens
MT	Threading (full profile)
TR	Threading (partial profile)

③ Helix angle / Rake face	
B	0°
C	15°
D	30°, 37°, 47°
E	38°, 45°, 50°
F	60°
H	43°
T	Land

④ Diameter (mm)	
060	ø6
200	ø20

⑤ Cutting edge length (mm)	
Length	
L07.0	7
L15.0	15
Groove width	
W1.50	1.5
W1.57	1.57
W10.0	10

⑥ Corner shape / Angle	
Nose radius	
R00	Sharp edge
R005	R0.05
R01	R0.1
R05	R0.5
R10	R1.0
Chamfer type	
C15	0.15 x 45°
C30	0.3 x 45°
C60	0.6 x 45°
Chamfering head	
A30	30°
A60	60°
R chamfering head	
R10	R1.0
R16	R1.6
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision
Threading	
IS**	ISO metric, pitch**
UN**	Unified, **TPI
W**	Whitworth, pitch**

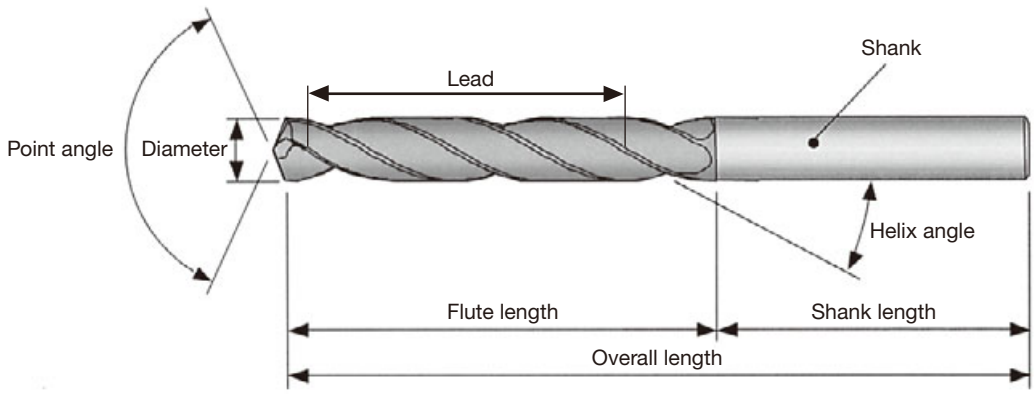
⑦ Additional feature	
I	Irregular pitch (or Intermittent edge)
A	for aluminum
R	Serrated edge
C	Combined edge

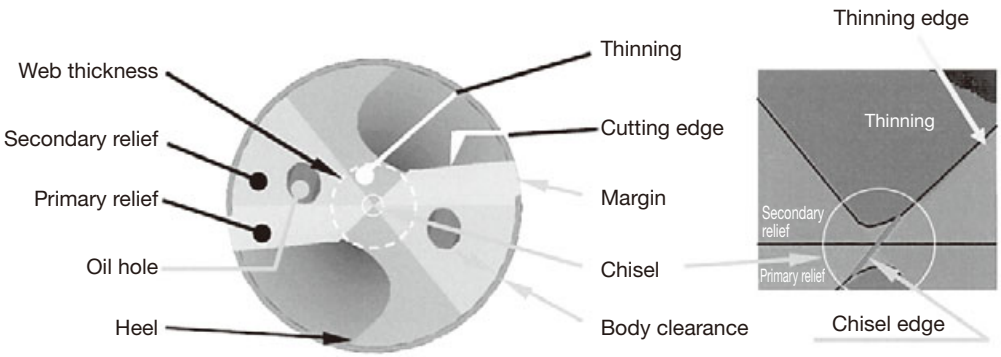
⑧ The number of flutes	
General	
02	2
06	6
Slotting head VST type	
3	3
4	4

⑨ Connection screw size	
S04	S04
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15
S21	S21

Drill

Nomenclature for solid carbide drills





Cutting forces and power requirement

●Twist drill

Power requirement

$$P_C = KD^2n \quad (0.647 + 17.29f) \times 10^{-6} \ (\text{kW})$$

Thrust force

$$T_C = 570KDf^{0.85} \ (\text{N})$$

Torque

$$M_C = \frac{KD^2\,(0.630 + 16.84f)}{100} \ (\text{N·m})$$

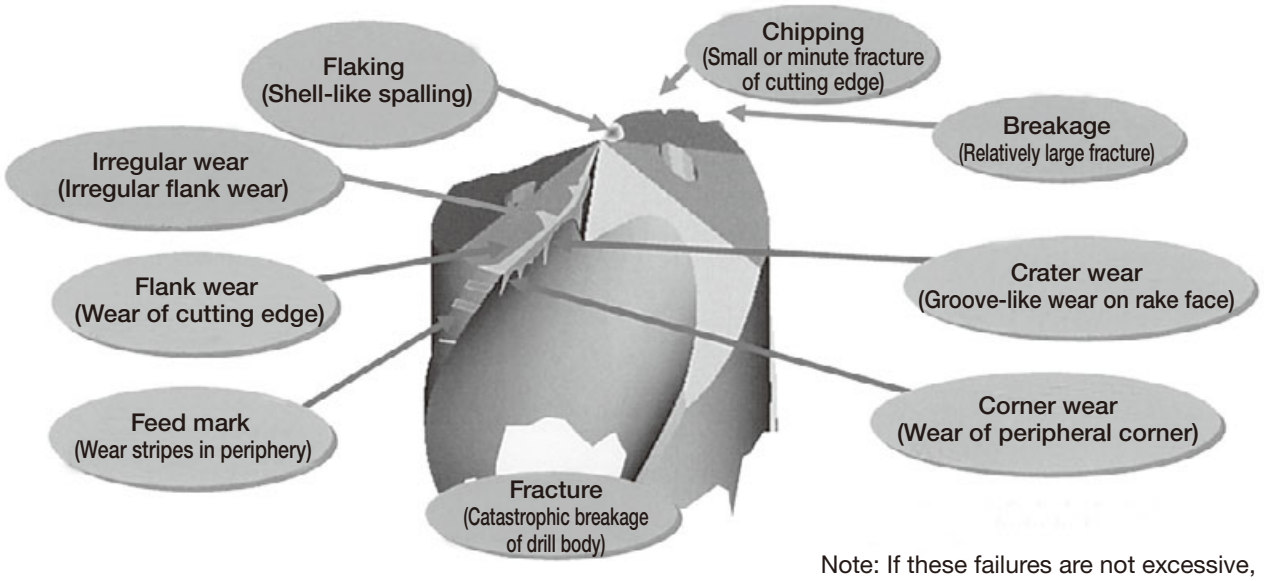
P_C : Power requirement (kW)
T_C : Thrust force (N)
M_C : Torque (N·m)
D : Drill diameter (mm) 〔DC〕
f : Feed (mm/rev)
n : No. of revolutions (min^{-1})
K : Material constant···· Refer to the Table at right

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

●Material constant compensating for power requirement and thrust force

Workpiece material	Tensile strength MPa(N/mm^2)	Tensile strength {Kgf/mm^2}	Brinell hardness (HB)	Material constant (K)
Cast iron	210	21	177	1.00
Cast iron	280	28	198	1.39
Cast iron	350	35	224	1.88
Aluminum	250	25	100	1.01
Low carbon steel (JIS S20C)	550	55	160	2.22
Free cutting steel (JIS SUM32)	620	62	183	1.42
Manganese steel (JIS SMn438)	630	63	197	1.45
Nickel chromium steel (JIS SNC236)	690	69	174	2.02
4115 steel Cr0.5, Mo0.11, Mn0.8	630	63	167	1.62
Chromium molybdenum steel (JIS SCM430)	770	77	229	2.10
Chromium molybdenum steel (JIS SCM440)	940	94	269	2.41
Nickel chromium molybdenum steel (JIS SNCM420)	750	75	212	2.12
Nickel chromium molybdenum steel (JIS SNCM625)	1,400	140	390	3.44
Chromium vanadium steel				
Cr0.6, Mn0.6, V0.12	580	58	174	2.08
Cr0.8, Mn0.8, V0.1	800	80	255	2.22

Cutting edge failure of solid carbide drills



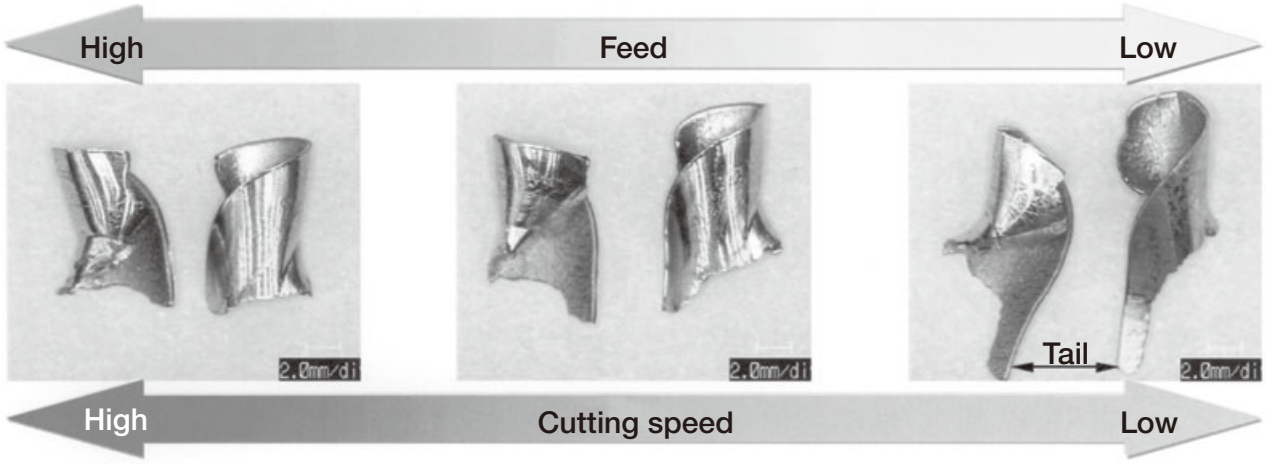
Note: If these failures are not excessive, the tool is in a normal condition.

Change of chip shapes in drilling

Change of chip shapes relating to cutting conditions

Photographs below show the change of chip shapes relating to change of the feed and the cutting speed. These chip shapes are all well controlled in a proper condition range.

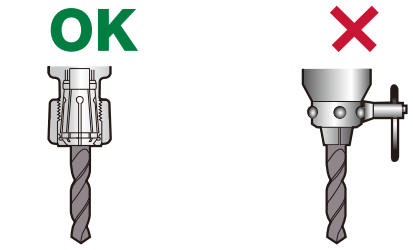
When the speed and feed are low, the chip shows whitish color and the tail of the chip tends to lengthen gradually. In contrast, as the speed or the feed increases, the chip tends to increase in brightness and becomes a compact shape with a short tail. These changes in the shape depend on the cutting temperature. As the temperature increases, chips tend to be broken.



Guidelines for correct usage of carbide drills

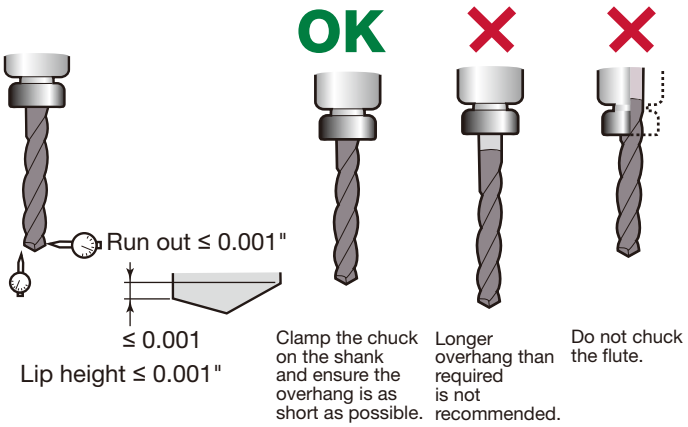
● Holders for solid carbide drills:

A collet chuck holder is recommended for use with carbide drills. When using a milling chuck holder, a collet chuck with a straight shank or straight collet should be used.



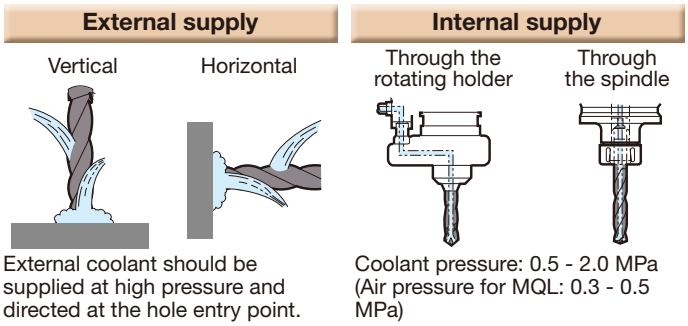
● Chucking drills:

- Radial run out and lip height should be less than 0.001". If run out or lip height is larger (close to 0.002"), machining is possible. However, less accurate holes or short tool life may be a result.
- Overhang length should be as short as possible.



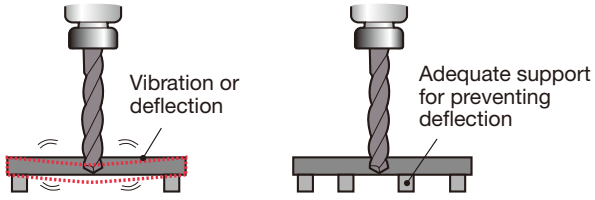
● Coolant Supply:

When using a drill without a coolant hole, such as the DSW-DE type, coolant should always be directed to the entrance of the hole. Maintaining this supplying is very important for stable drilling performance.



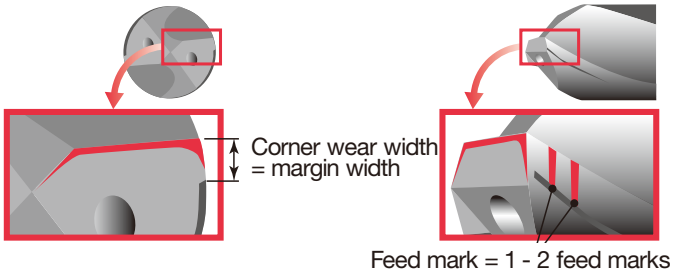
● Clamping workpieces:

As solid carbide drills have a higher thrust force, machining with low rigidity or inadequate support can cause fractures or breakages through vibration. It is important the workpiece is rigidly clamped and has adequate support.

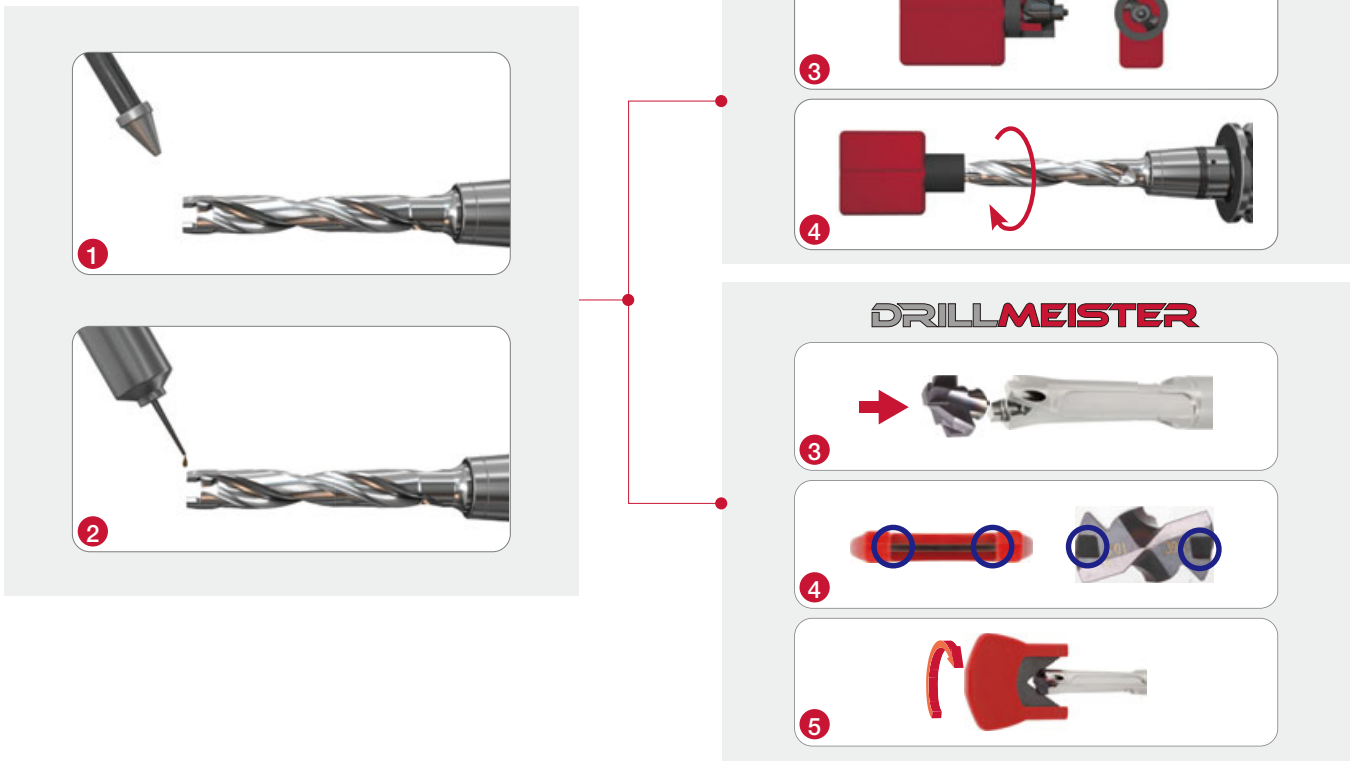


● The criteria of tool life:

- Corner wear width: equal to margin width
- Feed mark: 1 - 2 feed marks on the margin
- Spindle load increase: 30% higher than starting level
- Irregular situation: worse chip control, hole diameter change, worse surface finish, larger burrs, bigger sound.



● Drilling head mounting procedure



● Instruction for proper head mounting



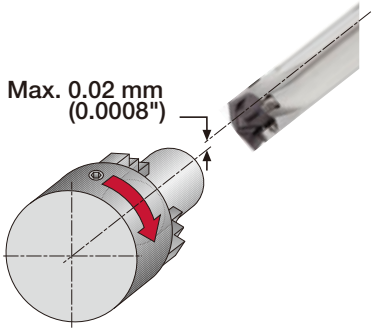
Fig. #1 Fig. #2 Fig. #3

Procedures

① Thoroughly clean the contacting areas on the drill body and the head with compressed air, lubricate them, and put the drill head in the pocket.
② Place the clamping key in the grooves on the drill head. Push the head in the pocket with equal torque on the right and the left sides. Rotate the clamping key to lock the head in the pocket completely. (Fig. #1).
③ Be sure that there is no gap in the contact surfaces between the head and the drill body. Use a 0.0004" shim to check for the gap. (Fig. #2)
④ If there is a gap thicker than 0.0004", unclamp the head and return to procedure No. ① .
⑤ Measure the run-out at the margin of the drill head. Run-out must be 0.002" or smaller. (Fig. #3) (Recommended value: 0.0008" or smaller)
If the run-out exceeds 0.002", unclamp the head and return to procedure No. ① .

Note: #1: If the clamping torque is not equally applied on the right and the left sides of the drill head, there may be a gap between the head and the body, which increases the run-out of the head.
Note: #2: Low accuracy in holding the drill body may affect the run-out. If the run-out is large, check the accuracy in holding the drill body.

● Alignment recommendation



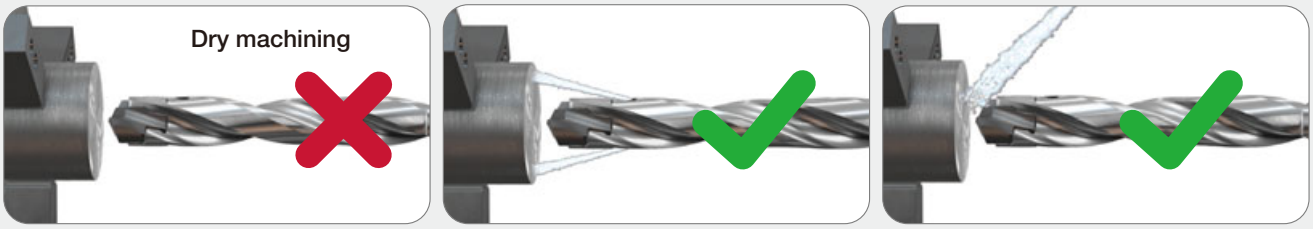
● Runout recommendation



ADDMEISTER DRILL	DRILLMEISTER	
Max. 0.0008"	Ideal	: ≤ 0.0008"
	Acceptable	: ≤ 0.002"
	Not acceptable	: > 0.002"

DRILLMEISTER / ADDMEISTER DRILL

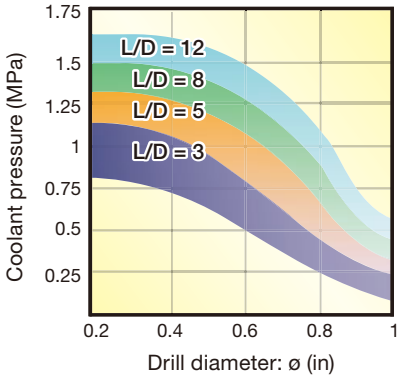
Coolant recommendation

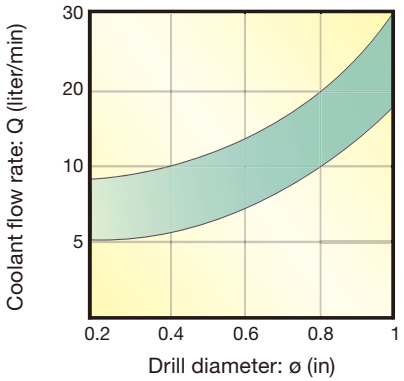


ADDMEISTER DRILL
Up to 2XD

DRILLMEISTER
If hole depth excess 2XD, recommend to add dwell or step cycle for better chip evacuation

Recommended coolant flow rate and pressures





Application range and recommended tool lengths for application irregularities

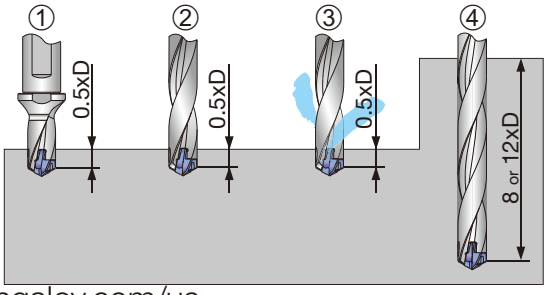
Please use the shortest tool length possible

✓ OK
× Impossible

Application	Stacked plate	Complex exit	Rough / cast surface	Inclined surface
ADDMEISTER DRILL	×	×	×	×
DRILLMEISTER	✓	Up to 8xD ✓	Up to 5xD ✓	Up to 3xD ✓

Application	Curved surface	Hole expansion	Plunging	Counter boring
ADDMEISTER DRILL	×	×	×	×
DRILLMEISTER	Up to 3xD ✓	Up to 3xD ✓	Up to 3xD ✓	×

Tips when using 8xD and 12xD drills



① Drill a pilot hole in the depth of 0.5xD.
The same head diameter should be used for the pre-hole and the main drilling process.
② Rotate the drill at a low speed (eg. 100 rpm). While maintaining the drill speed, slowly feed into the pilot hole for several millimeters from the entry.
③ Activate the internal coolant and increase the drill rotation to the required speed.
④ Drill to the required depth using the recommended cutting parameters.

Note: Use DMC-style drill head for deep holes from 8xD up to 12xD depths without a pilot hole.

● Head combinations of pre-hole to main hole

		Pre-hole		
		DMP	DMC	DMF
Hole	DMP	Good 	Not good 	Not good 
	DMC	Good 	Good 	Good 
	DMF	Not good 	Not good 	Good 

● Holders recommended for M/C

TID-F...

First choice


Power chuck


Collet chuck


Side lock

TID-R...


Hydro chuck

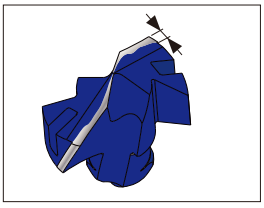

Power chuck

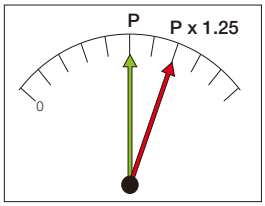

Collet chuck

Note: If you need to use a 12xD body with a side-lock holder, the shank will need to have a flat area which may be placed additionally.

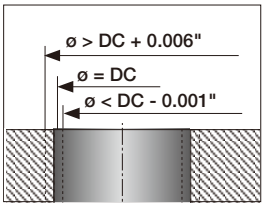
● When to change drill heads (Criteria for the end of tool life)

Replace the drill head when the following phenomena occur during the machining:

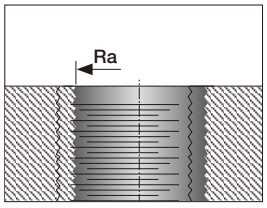

Width of corner wear reaches



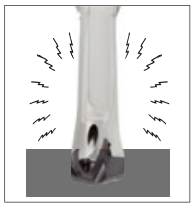
Spindle load exceeds 125% of the normal value



Hole diameter is 0.006" larger or 0.001" smaller than the drill diameter



Surface roughness deterioration


Vibration or unusual noise

ADDMEISTER DRILL : 0.008" - 0.012"
DRILLMEISTER : 0.004" - 0.008"

KEY FOR MEASURING HEAD RELEASE TORQUE

The release torque in unclamping a head is measured with a torque driver to determine the body's tool life. Please refer to the below for the standard release torque value which indicates the end of tool life (The value less than the standard should be judged as the end of tool life).

Dedicated key designation :
KHS-TID10-19.99


*Can be connected with a commercially available torque driver.



Head designation	Release torque value to indicate tool replacement (lbf・ft)
DMP100-109	0.15
DMP110-119	0.15
DMP120-129	0.18
DMP130-139	0.18
DMP140-149	0.22
DMP150-159	0.22
DMP160-169	0.26
DMP170-179	0.26
DMP180-189	0.3
DMP190-199	0.3

How to change drill head

- Caution when installing the drill head

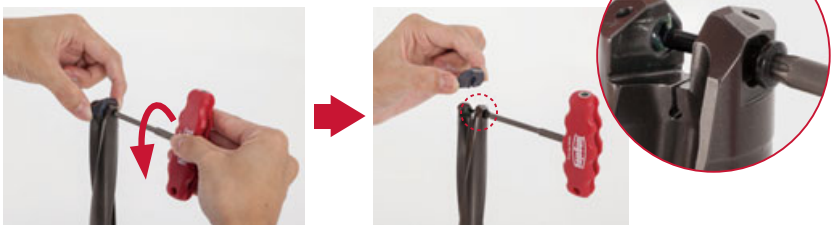
Install the drill head so that the arrow etched on the drill head should be facing to the arrow on the drill body.



- Tightening and loosening of insert clamping screw

To unclamp rotate the screw 3-5 times counter-clockwise.

No need to remove the screw from the body.



.Please change the screw to new one when the screw does not rotate smoothly

Application range and recommended tool lengths for application irregularities

Please use the shortest tool length possible.

Application	Stacked plate	Irregular exit	Rough / cast surface	Inclined surface
DRILLFORCE MEISTER	✓	Up to 8xD ✓	Up to 5xD ✓	Up to 3xD ✓
Application	Curved surface	Overlapping holes	Plunging	Boring
DRILLFORCE MEISTER	Up to 3xD ✓	Up to 3xD ✓	Up to 3xD ✓	Up to 3xD ✓

✓ OK

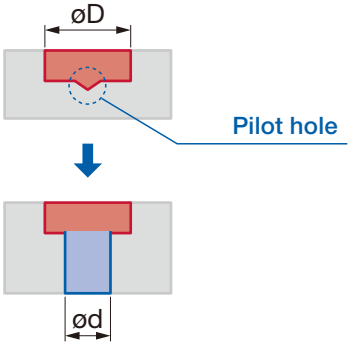
Drilling of step holes

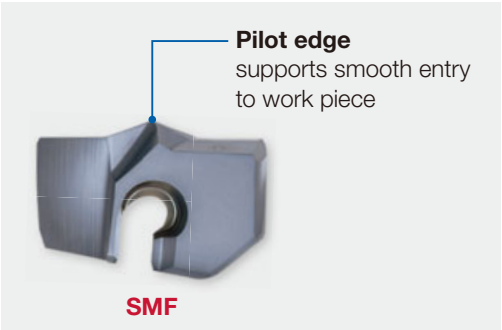
- Follow the procedures outlined below for efficient drilling of step holes.
- SMF drill head creates a small divot in the center of the hole bottom. The divot will then pilot a drill used in the following process to create a concentric hole.

Recommended procedures

① Use SMF to make a counterbore for the bolt head.

② Drill a smaller diameter hole for threads.

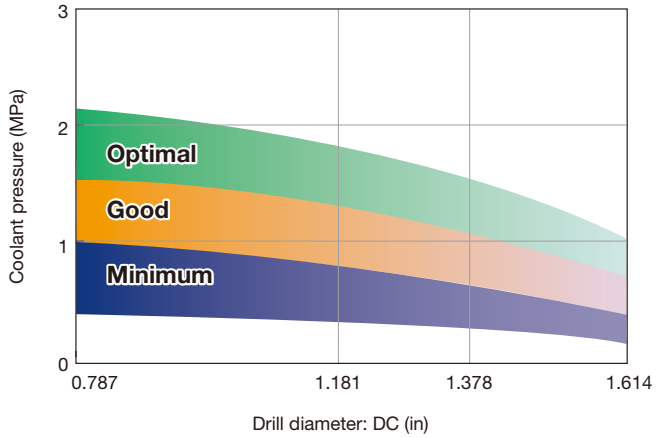


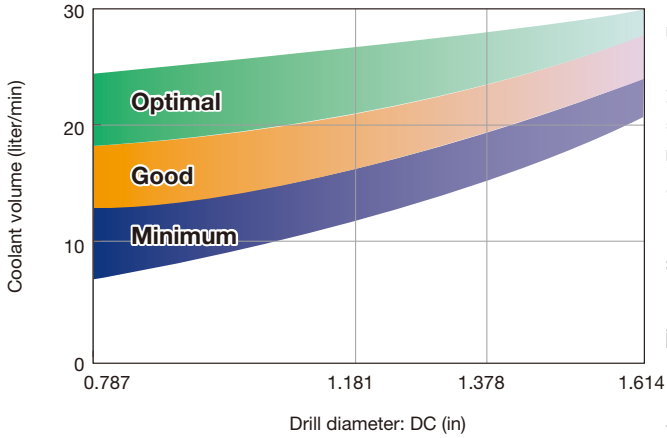


● When using for boring operations

- The above procedures can also be used for boring operations.
- For boring operations, use SMF drill head with flat edges.
- SMF drill head will create long chips in the continuous cuts. For successful chip evacuation, use a dwelling or pecking method.

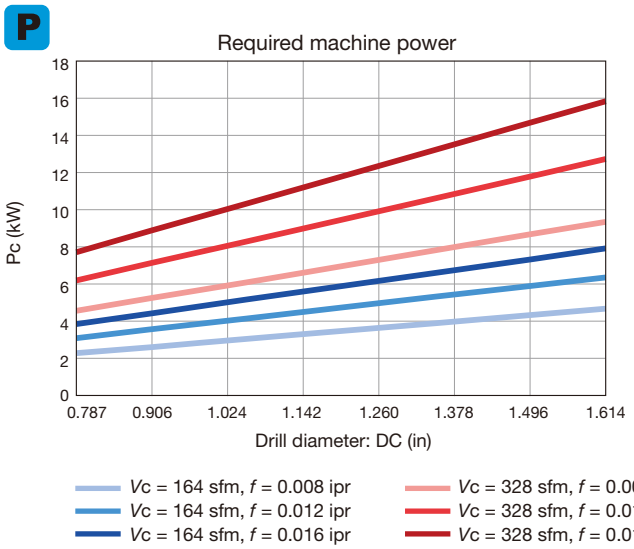
● Recommended coolant pressure and volume

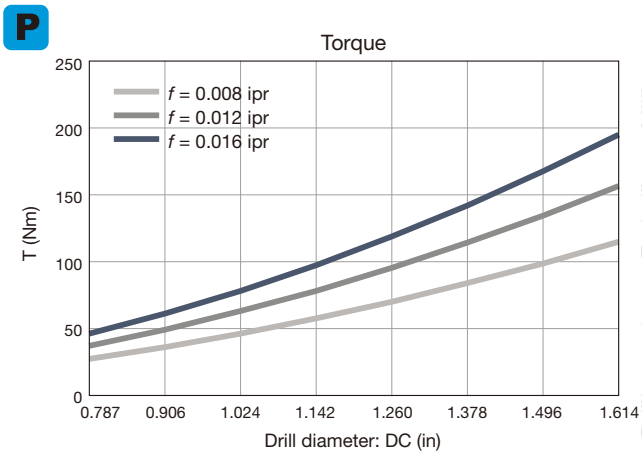




Note: External coolant will also do. For holes exceeding 2xD depth, use dwelling or peck drilling method to promote smooth chip evacuation.

● Required machine power and torque





- **Please access "Tungaloy machining power" to calculate more detailed cutting forces.**

  https://www.imc-i.com/mpwr/Unit/mm/Company/Tungaloy



SOLIDDRILL

Troubleshooting for solid carbide drills

Problem		Cause	Countermeasure
Abnormal wear	Relief surface	Inappropriate cutting speed	•Increase the cutting speed by 10 % within standard conditions if abnormal wear is around center. •Lower the cutting speed by 10 % within standard conditions if abnormal wear is on the periphery.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (Increase the dilution rate)
	Margin	Inappropriate cutting speed	•Lower the cutting speed by 10 %.
		Regrinding timing, insufficient reground amount	•Shorten the regrinding timing.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (increase the dilution rate)
		Intermittent cutting when entering	•Avoid interruption at entry and exit. •Lower the feed by about 50 % during entering into and leaving from the workpiece.
Chipping and fracture	Chisel section (center of drill cutting edge)	Insufficient rigidity of the drill	•Reduce the drill overhang as much as possible. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range. •Use a bushing or a center drill.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Inappropriate entry into the workpiece	•Avoid interruption at entry into the workpiece. •Lower the feed by 10 % at entry.
		High workpiece hardness	•Lower the feed by 10 %.
		Inappropriate honing	•Check if honing has been made to the center of cutting edge.
	Peripheral cutting edge	Insufficient drill rigidity	•Lower the cutting speed by 10 %. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range.
		Inappropriate drill mounting accuracy	•Check the run out accuracy after drill installation. (0.0012" or less)
		Insufficient machinery and workpiece rigidity	•Change the clamp method to the one with rigidity. •Lower the feed during entering into and leaving from the workpiece.
		Inappropriate honing	•Check if honing has been made to the cutting edge periphery.
	Margin	Insufficient machine and workpiece rigidity	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang. •Use a bushing or center drill.
		Regrinding timing and insufficient amount of reground stock	•Shorten the regrinding timing.
		Intermittent cutting when entering or exiting the cut	•Avoid interruption at entry and exit. •Lower the feed by about 50 % during entering into and leaving from the workpiece.
Breakage		Tendency to cause chipping or develop abnormal wear	•Check the failure mode condition before breakage and find out the wear and chip countermeasures.
		Chip packing in the drill flutes	•Review the cutting conditions. •For internal coolant supply, raise the supply pressure of cutting fluid. •Use peck feed for deep holes.
		Insufficient machine output	•Review the cutting conditions. •Use the machine with high power.
Insufficient hole accuracy		Insufficient rigidity of the machinery and workpiece	•Change to the clamp method with rigidity
		Inappropriate drill installation accuracy	•Check the run out accuracy of drill mounting. (0.0012" or less)
		Chip packing in the flutes.	•Review the cutting conditions. •Raise the cutting oil supply pressure. •Use peck-feed for deep holes.
		Inappropriate edge sharpening accuracy	•Check the edge shape accuracy.
Prolonged chips		Inappropriate cutting conditions	•Increase the feed by 10 % within standard conditions.
		Inappropriate honing	•Provide the appropriate honing.
		Cutting edge with chipping or breakage	•Lower the cutting speed by 10 %.

Regrinding method

Please refer to the following instructions prior to regrinding DSW type drills.

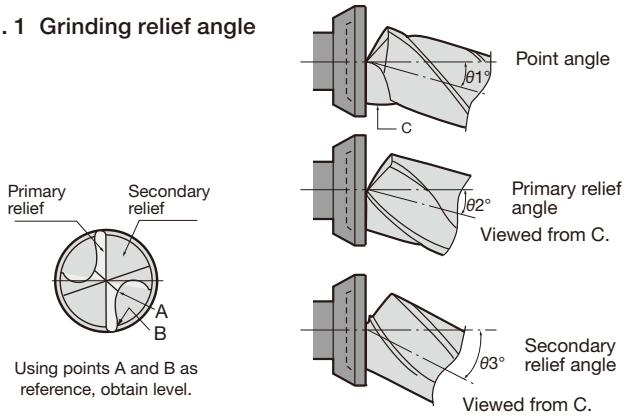
Before regrinding
Check the cutting edge for damage and wear. If any large fracture is found, remove with a silicon carbide wheel.

(1) Grinding the flank

- Use a 280 to 400 grit diamond cup type wheel of 3.937" ~ 7.874" in diameter.

1) Grind the relief surface so that primary relief angle (θ) of 2° can be formed as shown in Fig.1. After grinding the other side likewise, do sparkout grinding so that the difference of the lip height will be kept within 0.0008".
2) In the cases of DSW types: After grinding the primary relief angle (θ) 2°, without rotating the drill, grind the secondary relief surface so that the relief angle (θ) of 3° can be formed. In the same way as 2), take care to bring the ridge line formed between the primary and secondary relief surfaces to the drill center. (Values (θ) of 1° ~ 3° are shown in Table 1)

Fig. 1 Grinding relief angle



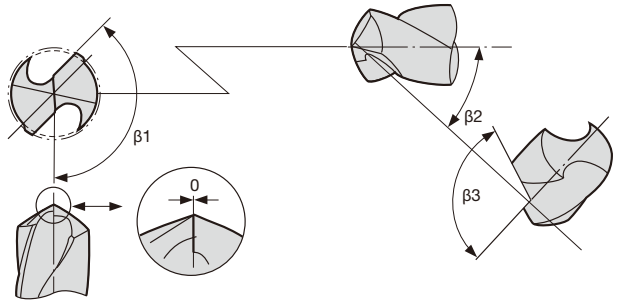
(2) Thinning

- Use a 280 ~ 400 grit diamond straight-type wheel of 3.937" ~ 7.874" in diameter.
- Conduct thinning in the same manner as cross thinning (X-type).
- Values of β1 to β3 written in the figures are given in the Table 2.

Table 1	θ1 (Point angle)	θ2 (Primary relief angle)	θ3 (Secondary relief angle)
DSW	–20°	–6° ~ –12°	–23° ~ –27°

Table 2	β1	β2	β3
DSW	147° ~ 153°	30° ~ 42°	95° ~ 110°

Fig. 2



(3) Honing

- The honing angle θ and width H should be varied depending on the drill type, diameter, and work material. Recommended honing specifications are given in the Table below.
- Honing procedures (refer to Fig.3)
  (1) Round the R portion shown in Fig.3 in large.
  (2) Then, roughly hone the cutting edge lines by using an electro-deposited diamond file of around 170 grit.
  (3) Carry out finish honing by using a diamond hand stick of 400 to 600 grit.
- The honing width should be changed depending on the drill diameter. For smaller side of diameters, the width should be in smaller side of values given in the Table.

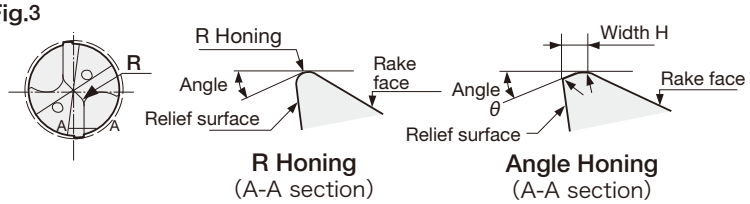
• Angle honing

	~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"
θ	- 20°	- 20°	- 20°
H	0.001" ~ 0.002"	0.002" ~ 0.003"	0.003" ~ 0.004"

• R Honing

Dimensions (in)	R Honing R (in)
DC ≤ ø0.236"	0.0008" ~ 0.0016"
ø0.236" < DC ≤ ø0.630"	0.0012" ~ 0.0020"

Fig.3



R Honing (A-A section)

Angle Honing (A-A section)

After regrinding, check the following before use.

- The difference of the lip height is kept within 0.0008".
- Any damaged portion on the cutting edges is not left.
- Cutting edges are properly honed.
- Any grinding burr is not left.

Notes:
- For more details on regrinding, consult the nearest Tungaloy sales office.

SOLIDDRILL Designation System

DSW	088	-	035	-	10	-	D	E	3
①	②		③		④		⑤	⑥	⑦

① Series

DSW	Series name of solid drill

② Drill diameter DC (mm)

088	ø8.8

③ Effective flute length LU (mm)

035	35

④ Shank diameter DCONMS (mm)

10	ø10

⑤ DIN 6535 - Form HA

⑥ Coolant Supply

E	External (without coolant hole)
I	Internal (with coolant hole)

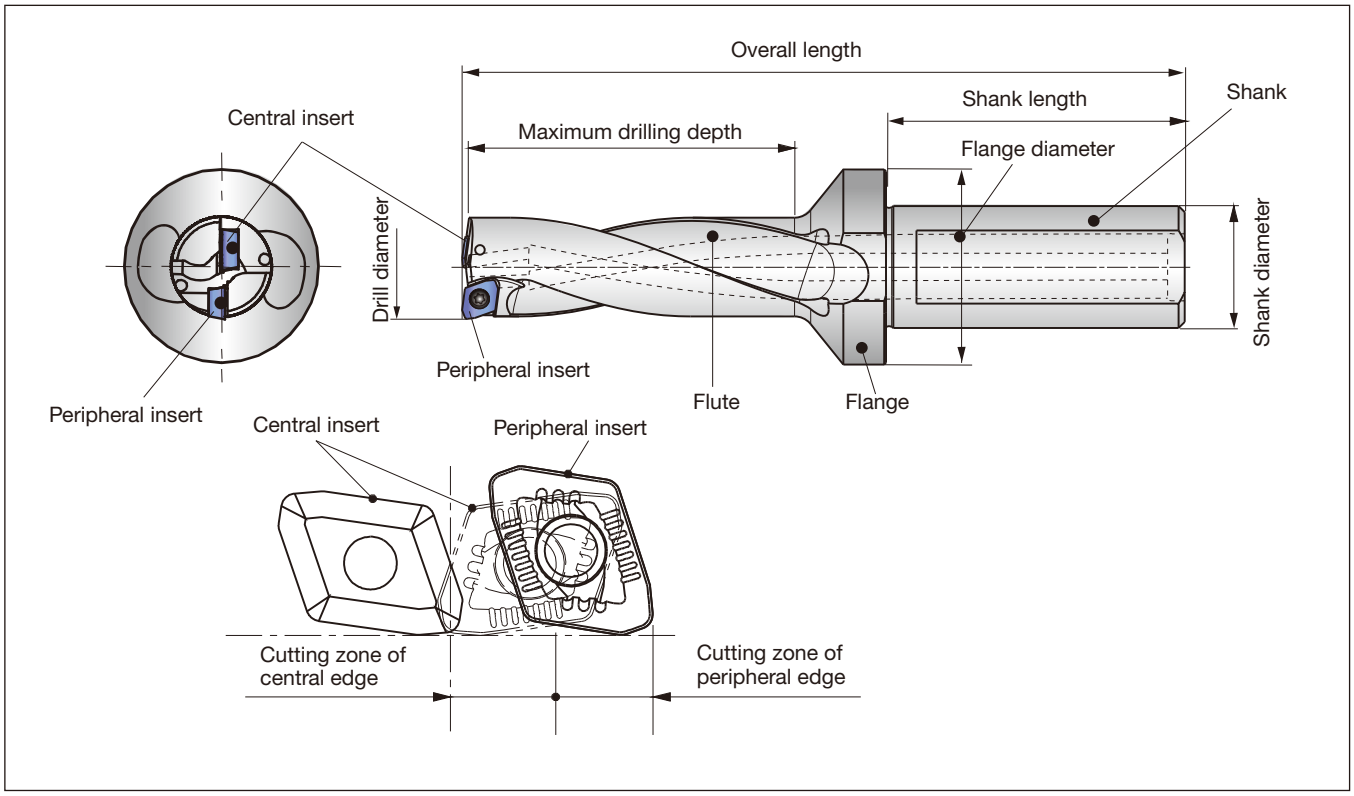
⑦ Drilling depth

Approximate value of L/D ratio.
Caution: Code may be different from the actual length. This is dependent upon the tool diameter.

Caution: "Effective flute length" shows the maximum flute length for eff ective chip evacuation. The actual drilling depth may be shorter than described depending on the work material or cutting conditions.

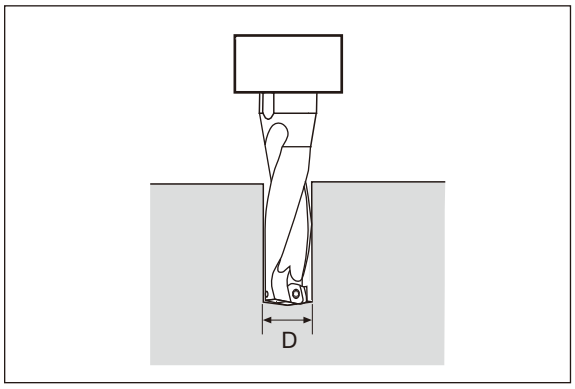
Indexable Drill

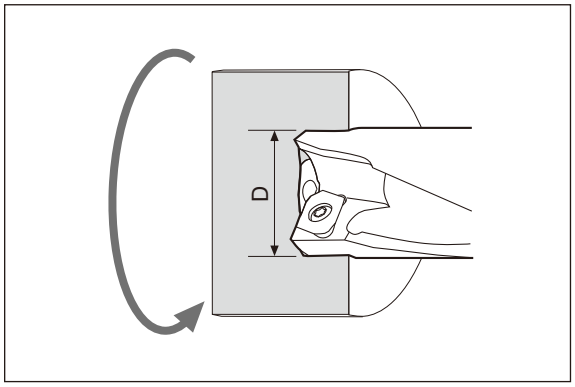
Nomenclature for Indexable drill



Calculation formulas for Indexable drill

●Cutting speed





●When calculating cutting speed from number of revolutions: (Drilling formulas)

$$SFM = \frac{RPM \times D}{3.82}$$

SFM : Cutting speed
D : Drill diameter (in) 〔DC〕
RPM : Number of revolution (min-1)

●When calculating required number of revolutions from cutting speed: (Drilling formulas)

$$RPM = \frac{SFM \times 3.82}{D}$$

●When calculating cutting speed from number of revolutions: (Where the workpiece rotates.)

$$v_c = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (sfm)
D : Drilling diameter (in) 〔DC〕
n : Number of revolutions (min^{-1})
$\pi \approx 3.14$

●When calculating required number of revolutions from cutting speed: (Where the workpiece rotates.)

$$n\ (min^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$

●Calculation of feed speed

$$v_f = f \times n \quad (mm/min)$$

v_f : Feed speed (in/min)
f : Feed (ipr)
n : Number of revolutions (min^{-1})

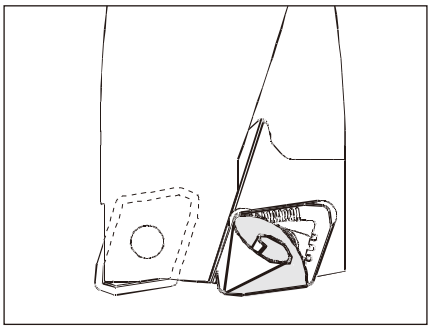
〔 〕The notation in the brackets is the one used in the catalog (ISO compliant)

Indexable Drill

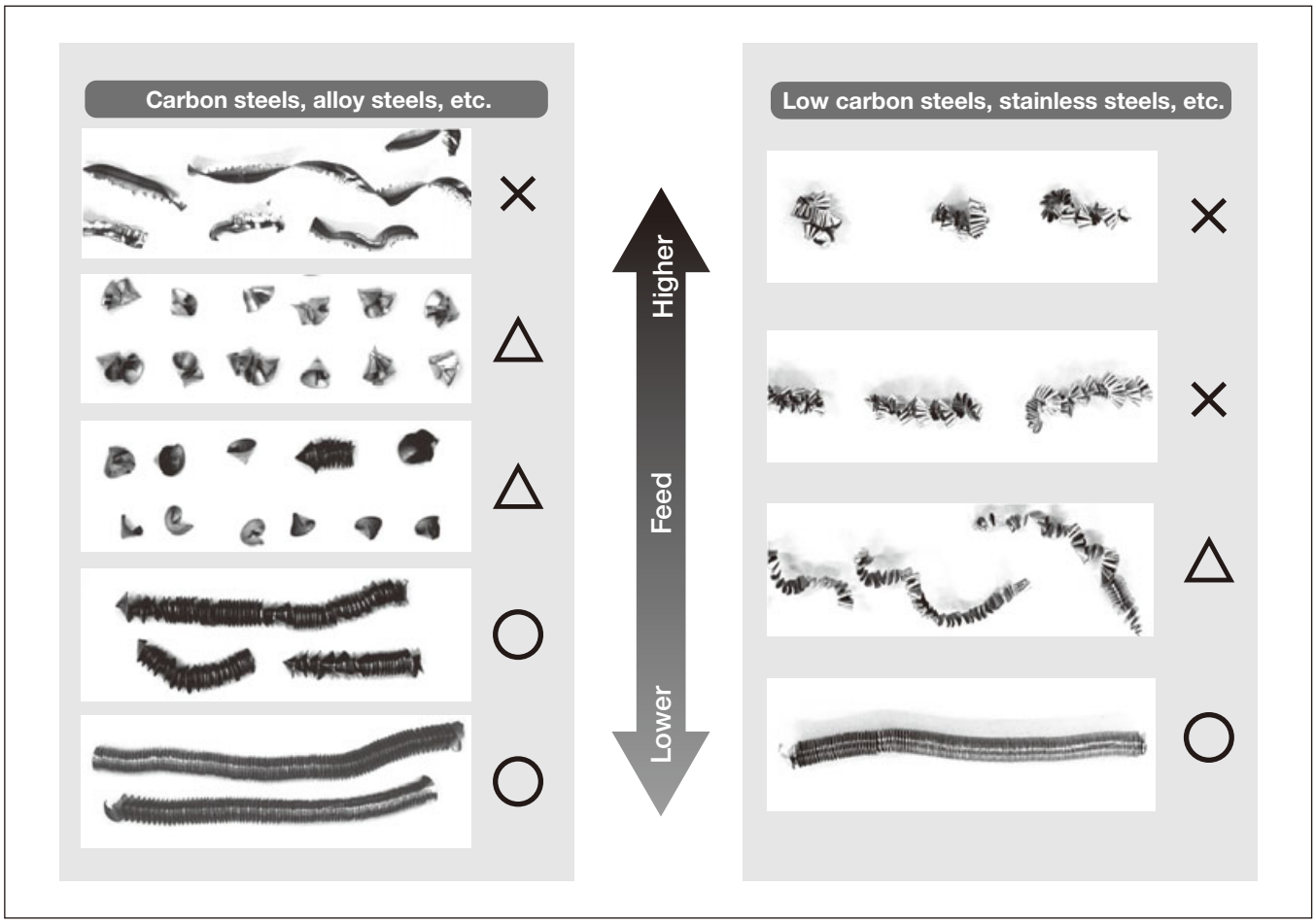
Chip shapes

Chip shape produced with central insert

- A conical coil shape whose apex point coincides with the rotating center of the drill is the basic shape. The chips are broken into small sections with increases in feed. However, excessively high feed causes the chip to increase in thickness and develops vibration which disturbs stable machining.
- In TDX drills, ○ marked chips shown below are the most preferable shapes. This type of chip is broken into adequate lengths by centrifugal forces when used in tool-rotating condition. On the other hand, when used in work-rotating condition such as on a lathe, a continuously long chip is often produced without entangling.

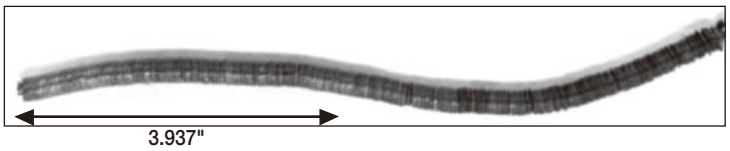


Relation between chip shapes and feeds (In the case of central insert)



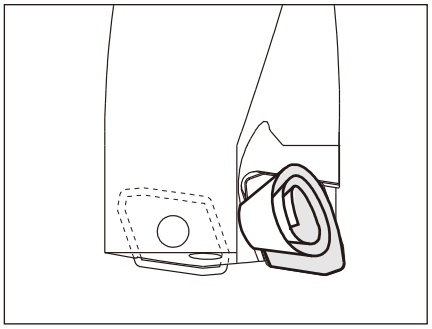
Example of chip shape in work-rotating applications (In the case of central insert)

(ø1.024", 1.045, V_c = 330 sfm, f = 0.004 ipr)



Chip shape produced with peripheral insert

- Chip problems such as entangling are mainly caused by chips produced with the peripheral insert. These problems are dependent on the types of Workpiece material and the cutting conditions.
- As shown below, when the feed is extremely low, the chips jump over the chipbreaker groove and the continuously long chips may wrap around the drill body.
- When the feed is too high, the chips increase in thickness and can not be curled.
- Therefore, it is important to select proper cutting conditions to suit the machining so that well controlled chips will be formed.



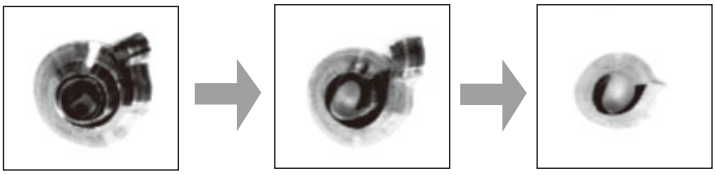
Medium to high carbon steels, alloy steels, etc.

As shown below, several turns of coil are an ideal shape.
As the feed increases, the curl radius and the number of turns tend to decrease.

Typical chip shapes of general steels



Variation of chip shapes relating to feeds

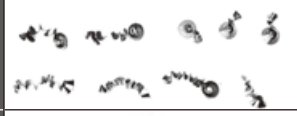
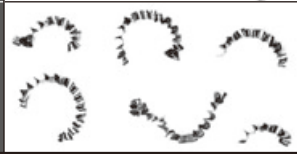


f = 0.003 ipr　　*f* = 0.004 ipr　　*f* = 0.005 ipr

Stainless steels, low-carbon steels, low-alloy steels, etc.

- When machining long-chip materials such as stainless steels and mild steels, the wrong selection of cutting conditions results in chip entangling and tool breakage at worst. Therefore, cutting conditions should be carefully selected.
- "C" shaped, continuous coils of several to ten turns having adequately divided lengths are the ideal shape.

Ideal chip shapes

	Stainless steel (JIS SUS 304) (ø0.866", V_c = 330 sfm, *f* = 0.004 ipr)	Mild steel (JIS SS400) (ø0.866", V_c = 530 sfm, *f* = 0.003 ipr)
DS chipbreaker		
DJ chipbreaker		

For machining stainless steels or low carbon steels, DS chipbreaker is recommended.
When using a TDX drill in tool-rotating condition, DS chipbreaker produces compact chips and allows more stable machining than DJ chipbreaker. When using it in work-rotating condition, DS chipbreaker provides outstanding affect on chip control.

Indexable Drill

Chip shapes which tend to entangle and remedies against them

① Apple-peel-like chips

These chips are often produced in machining mild steels or low-carbon steels at low-speeds and low-feeds.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, increase the feed by about 10 % as the cutting speed is raised by 20%.



Apple-peel-like chips (Without curling)

② Short-lead chips

These chips are often produced in machining stainless steels at low-feeds and tend to entangle on the tool in spite of short length.

Remedies

Increase the feed by about 10 %. If there is no effect, increase the cutting speed in stages by 10% within the range of standard cutting conditions.



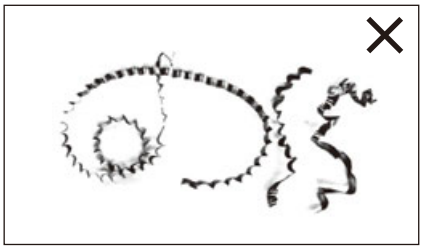
Continuously curled "C" shape chips with short lead (P).

③ Very long chips

Often produced in machining mild steels or low-carbon steels under improper cutting conditions.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, decrease the feed by about 10 % as the cutting speed is raised by 20%.

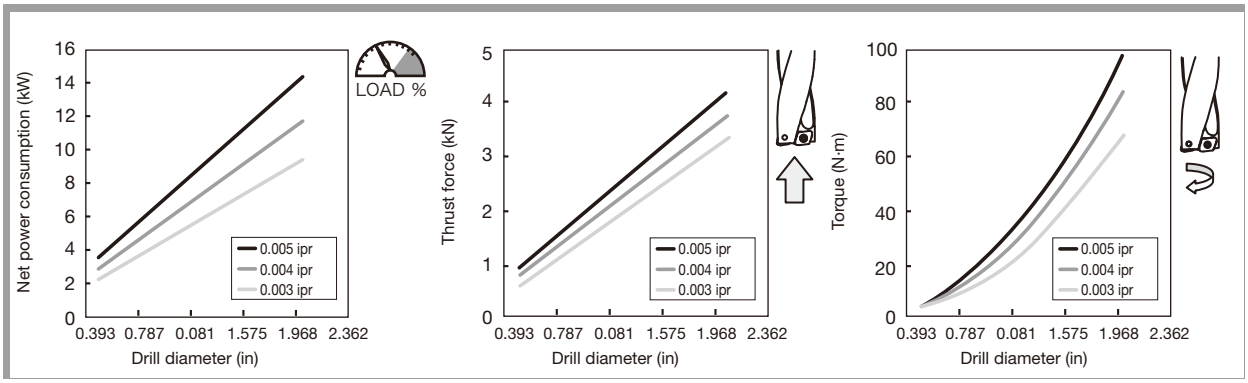


Continuously coiled long chips

Cutting forces

The charts below show a guideline for cutting forces. Use TDX drills on a machine with ample power and sufficient rigidity.

Guidelines for cutting forces



Cutting speed: V_c = 330 sfm
Workpiece material: Alloy steel (4140), 240HB
Cutting fluid: Used

Troubleshooting for indexable drills

Use EZ sleeves for the following purposes

Hole diameter adjustment on the milling machine

Adjusting the finishing diameter when milling

Adjusting the finishing diameter in tool-rotating applications such as on machining centres and milling machines:

By using EZ sleeve, the finishing diameter can be adjusted in the range from +0.024" to -0.008".



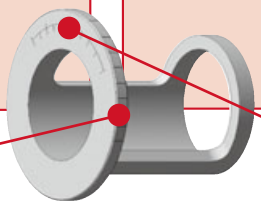
Adjusting cutting edge height on lathe

Lathe

Adjusting of the cutting edge height in work rotating applications such as on lathes:

By using EZ sleeve, the cutting edge height can be adjusted in the range from +0.012" to -0.008". It results in eliminating troubles caused by improper cutting-edge height.





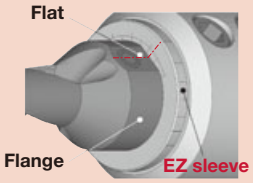
Scale for adjusting finishing diameter in milling (Periphery of sleeve)

Scale for adjusting cutting edge height in turning (Front face of sleeve)

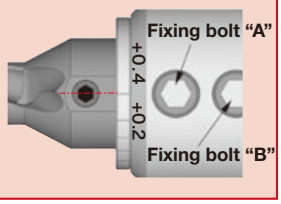
Setting of EZ sleeve

Hole diameter adjustment on the milling machine

As shown in the Figure right, set the EZ sleeve between the drill shank and the toolholder.



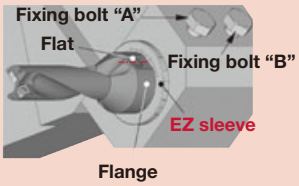
Align the graduated scale on the periphery of the EZ sleeve with the center of the flat of the drill flange. In the Figure shown right, the sleeve is set so that the finishing diameter will be increased by 0.4 mm.



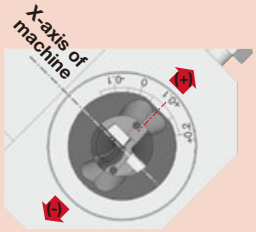
When rotating the EZ sleeve, insert the wrench into the hole at the flange periphery and rotate the EZ sleeve.
Screws A + B have to be loosened.
Secure the drill by screw A.
Secure the EZ sleeve by lightly tightening screw B.
Tighten screw B only lightly otherwise EZ sleeve can be damaged!

Adjusting cutting edge height on lathe

As shown in the Figure right, set the EZ sleeve between the drill shank and the toolblock.



Align the graduated scale on the front face of the Esleeve with the center of the flat of the drill flange. In the Figure shown right, the sleeve is set so that the center of the drill will shift by 0.1 mm to the plus (+) direction.



Cautious points

- The scale is only a rough guide, so be sure to measure the actual drilling diameter to confirm the result. Especially in turning, test machining is recommended as the drilling diameter will vary according to the adjustment.
- Can not be used for collect chuck holders.
- Over L/D 4 or bigger adjustment, please reduce feed.
- For smaller adjustment, the drill itself will interfere with the hole diameter. It is recommended that hole diameter should be adjusted to a larger diameter than the drill diameter.

Indexable Drill

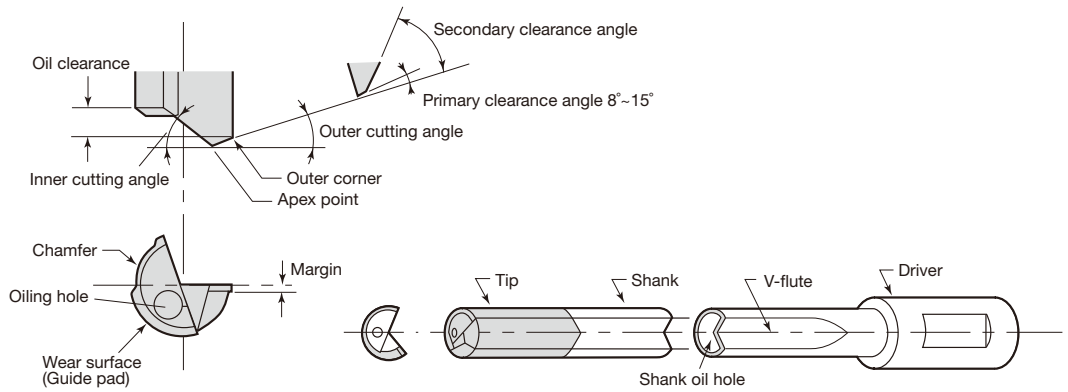
Troubleshooting for indexable drills

Problem			Cause	Countermeasure
Abnormal wear	Central cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10 % within standard conditions. ● Lower the feed by 10 %.
	Peripheral cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10 % within standard conditions. ● When the feed is extremely low or high, set up it within standard conditions.
	Common	Relief surface	Varieties and supply of cutting fluid	● Confirm that the cutting fluid flow is higher than 7 liter/min. ● The concentration of cutting fluid must be higher than 5 %. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
			Vibration in drilling	● Change to the machine with higher torque. ● Change to the clamp method with rigidity. ● Change the drill setting method.
			Unsuitable for selection of grade	● Change the grade to high wear resistant.
			Looseness of screws	● Tighten the screw.
		Crater	Cutting heat is too high	● Change to internal cutting fluid supply from external one. ● Increase the supply rate of the cutting fluid. (Higher than 10 liter/min.) ● Lower the feed by 20 % within standard conditions. ● Lower the cutting speed by 20 % within standard conditions.
			Excessive chip welding	● Lower the feed by 20 % within standard conditions. ● Lower the cutting speed by 20 % within standard conditions.
		Chipbreaker	Chip packing	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Chipping and fracture	Central cutting edge	The rotation center of drill	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.008".
			Large offset	● Check the manual and use the tool in the allowable offset range.
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr in rough surface area.
			High feed	● Lower the feed by 20 ~ 50 % within standard conditions.
			Using a chipping corner	● Confirm the corner when exchanging inserts.
	Peripheral cutting edge	Peripheral corner area	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.012".
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr at rough surface area.
			The existence of interrupted area	● Set the feed for lower than 0.002 ipr in interrupted area.
			Using a chipped corner	● Confirm the corner when exchanging inserts.
	Common	The unused corner area and cutting edge	High hardness of workpiece	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
			Chip packing	● Lower the feed by 20 % within standard conditions.
			Machinery impact	● Change to continuous feed in case of pick feeding.
		Contact boundary	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.012".
			Vibration in drilling	● Change to the machine with higher rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Flaking	High hardness of workpiece	● Set the feed for lower than 0.002 ipr.
			Thermal impact	● Change to internal cutting fluid supply from external one. ● Lower the feed by 20 % within standard conditions.
		Common	Unsuitable for selection of grade	● Change the grade to toughness.
			Looseness of screws	● Tighten the screw.

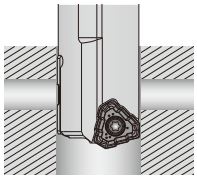
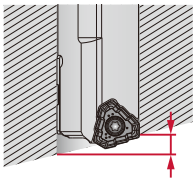
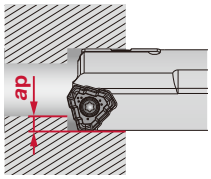
Troubleshooting for indexable drills

Problem		Cause	Countermeasure
Scratch marks on the tool	The tool periphery	Misalignment of workpiece rotation	● Set the misalignment to 0 ~ 0.008".
		Offset machining in excess of allowable range	● Use the tool in the allowable offset range.
		Offset direction reduced diameter of workpiece	● Set offset direction extended diameter of workpiece
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr in rough surface area.
		Chipping of peripheral cutting edge	● Exchange the insert.
		Bend of workpiece	● Change to the clamp method with rigidity.
		Chip packing	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Inappropriate hole accuracy	Hole diameter	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.008".
		Inappropriate offset contents	● Adjust offset contents.
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr at rough surface area.
		Bend of workpiece	● Change to the clamp method with rigidity.
	Roughness	Varieties and supply of cutting fluid	● The concentration of cutting fluid must be higher than 5 %. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
		Inappropriate cutting conditions	● Increase the cutting speed by 20 % within standard conditions. ● Lower the feed by 20 % within standard conditions.
	Common	Failures of inserts	● Exchange the insert.
		Chip packing	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Looseness of screws	● Tighten the screw.
Chip control	Prolonged and twisted of chips	Inappropriate cutting conditions	● Work within standard conditions. ● Increase the cutting speed by 10 % within standard conditions. ● Increase the feed by 10 % within standard conditions.
		Failures of inserts	● Exchange inserts.
		Machining by external fluid supply	● Change to internal cutting fluid supply from external one. ● Work by step feed. ● Use dwell function for 0.1 sec approximately.
		Chips around the central cutting edge	● There is a tendency to shorten the chips when shifting to higher speed and feed.
	Chip packing	Fluid supply	● Change to internal cutting fluid supply from external one. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Inappropriate cutting conditions	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
	Common	Large failure of drill holders	● Exchange the drill holder.
		Looseness of screws	● Tighten the screw.
Others	Chatter	Inappropriate cutting conditions	● Lower the cutting speed by 20 % within standard conditions. ● Increase the feed by 10 % within standard conditions.
		Large wear of inserts	● Exchange the insert.
		Vibration in drilling	● Change to the machine with higher torque rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Looseness of screws	● Tighten the screw.
	Machine stop	Insufficient machine power and torque	● Use the range of number of revolutions suited machine spec. Lower the feed by 20 ~ 50%.
		Burned inserts	● Exchange inserts before the failure becomes larger. ● Check the oil-hole plug screw is tightly screwed in place. ● Check that the fluid flows powerfully from the drill. ● Lower the cutting speed and the feed by 20 % within standard conditions.
	Large burr	Failures of inserts	● Exchange the insert.
		Inappropriate cutting conditions	● Lower the feed by 20 ~ 50% just before leaving from the workpiece.

Nomenclature for gun drill



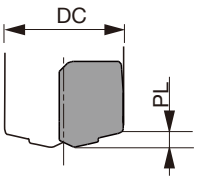
APPLICATION RANGE

Feed *f* (ipr)	0.001 - 0.002	0.001 - 0.02	0.004 - 0.012
Application	**OK** Cross hole drilling 	**OK** Inclined exit  0.630" or less (for standard drill)	**OK** Boring 

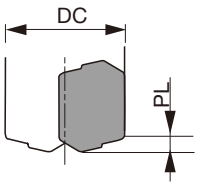
BLIND HOLE SHAPES OF THE HOLE BOTTOM

DC	Insert	Maximum difference PL
0.394 - 0.465	ZSGT06...	0.067
0.465 - 0.551	LOGT06...	0.071
0.551 - 0.630	TOHT07...	0.079
0.630 - 0.709	TOHT08...	0.087
0.709 - 0.787	TOHT09...	0.118
0.788 - 0.866	TOHT10...	0.126
0.866 - 0.984	TOHT11...	0.134
0.985 - 1.102	TOHT12...	0.142

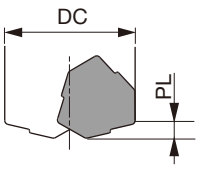
ZSGT06...



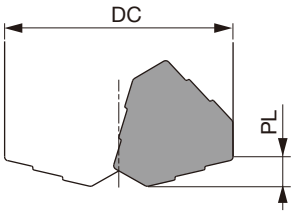
LOGT06...



TOHT07..., 08...

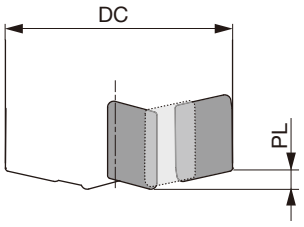


TOHT09... - TOHT12...



DC	Central	Insert Intermediate	Peripheral	Maximum difference PL
1.103 - 1.135	FBM07**-C	FBM06**-I	FBH06**-P	0.098
1.136 - 1.142	FBM07**-C	FBM06**-I	FBH06**-P	0.102
1.142 - 1.174	FBM07**-C	FBM06**-I	FBH06**-P	0.098
1.175 - 1.181	FBM07**-C	FBM06**-I	FBH06**-P	0.110
1.181 - 1.206	FBM07**-C	FBM07**-I	FBH08**-P	0.110
1.206 - 1.241	FBM07**-C	FBM07**-I	FBH08**-P	0.114
1.242 - 1.276	FBM07**-C	FBM07**-I	FBH08**-P	0.118
1.276 - 1.299	FBM07**-C	FBM07**-I	FBH08**-P	0.122
1.300 - 1.320	FBM07**-C	FBM07**-I	FBH08**-P	0.114
1.320 - 1.356	FBM07**-C	FBM07**-I	FBH08**-P	0.118
1.356 - 1.378	FBM07**-C	FBM07**-I	FBH08**-P	0.122
1.378 - 1.394	FBM08**-C	FBM07**-I	FBH08**-P	0.118
1.395 - 1.417	FBM08**-C	FBM07**-I	FBH08**-P	0.122
1.418 - 1.438	FBM08**-C	FBM07**-I	FBH08**-P	0.114
1.438 - 1.473	FBM08**-C	FBM07**-I	FBH08**-P	0.118
1.474 - 1.496	FBM08**-C	FBM07**-I	FBH08**-P	0.122
1.496 - 1.501	FBM08**-C	FBM07**-I	FBH09**-P	0.130
1.501 - 1.535	FBM08**-C	FBM07**-I	FBH09**-P	0.134
1.536 - 1.544	FBM08**-C	FBM07**-I	FBH09**-P	0.126
1.544 - 1.575	FBM08**-C	FBM07**-I	FBH09**-P	0.130

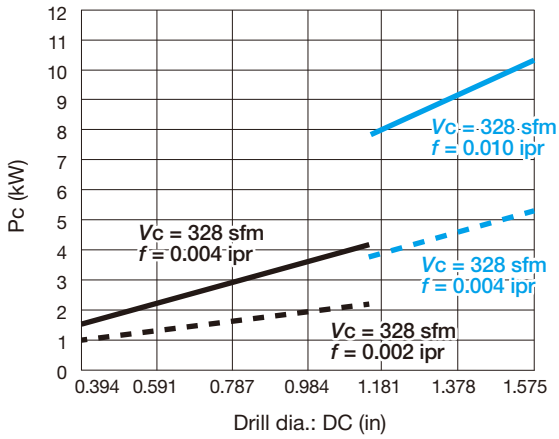
FBM...



REQUIRED SPINDLE POWER AND COOLANT PRESSURE

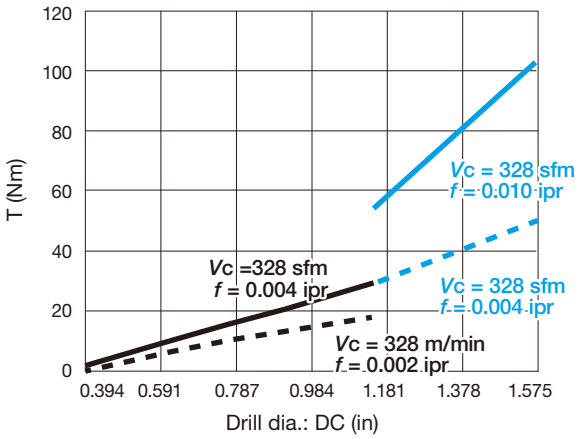
Net power

P 1055

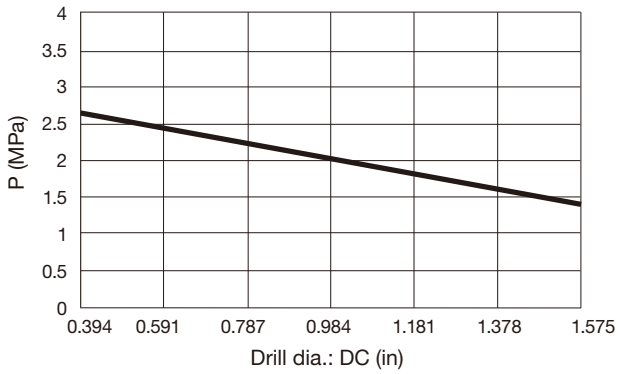


Torque

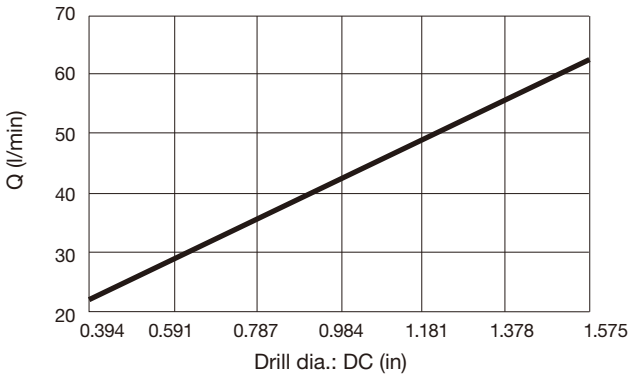
P 1055



Coolant pressure



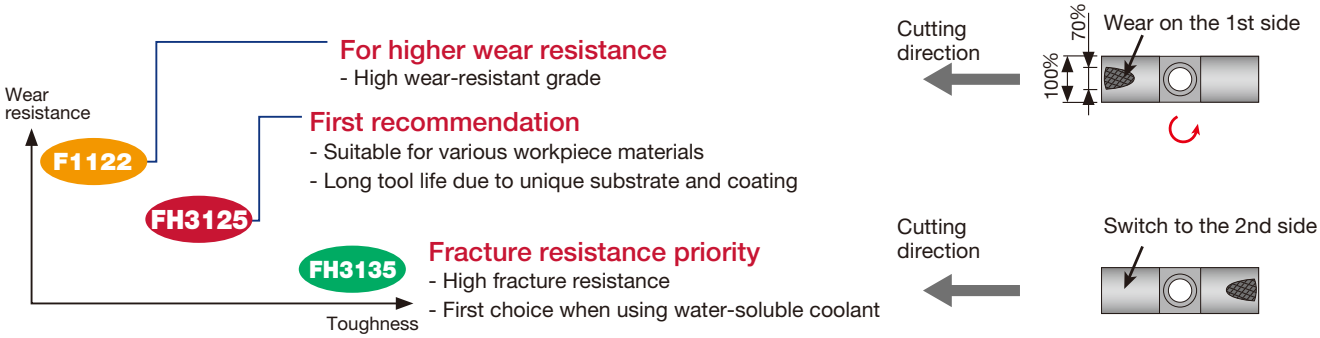
Coolant flow rate



■ Guide pad grade and the timing for replacement

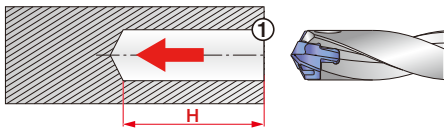
Guide pads are subject to wear, like inserts

- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.

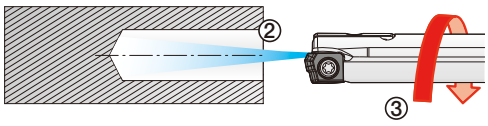


Drilling procedure on machining centers and lathes

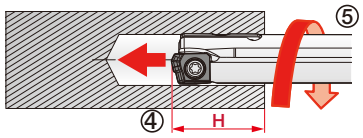
Proceed as instructed below in order to maximize the tool performance.



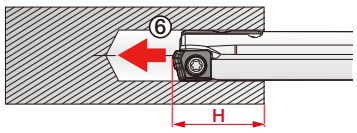
① Drill a pilot hole
Hole diameter tolerance: +0.0004" - +0.002"
Hole depth: H = 1.0"
Note: Drill H = 1.8" when using an MCTRCH drill (for cross-hole).
Please use DrillMeister or DrillForce-Meister for a pilot hole.
Use a drill with 3xD or smaller.
Note: Recommend to use a drill with 5xD when using an MCTRCH drill.



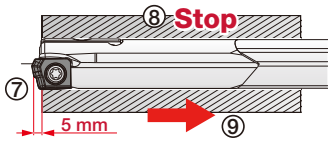
② Start coolant
③ Slowly insert DeepTri-Drill into the pilot hole
No. of revolution: *n* = 50 - 100 rpm
Feed rate: *Vf* = 4 - 12 ipm
Note: Do not rotate the drill at full machining speed before engaging the pilot hole.



④ Stop the drill at H = 0.8" depth
Note: Stop at H = 1.6" when using an MCTRCH drill.
⑤ Start rotating at full machining speed



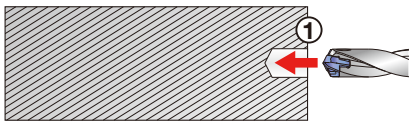
⑥ Start feeding
At the entry (H = 0.8" - 1.2") → Feed: *f* = 80% of programmed feed
Note: Drill H = 1.6" - 2.0" when using an MCTRCH drill.
Hole depth: H ≥ 1.2" → Feed: *f* = 100%
Note: Drill H = 2.0" or more when using an MCTRCH drill.



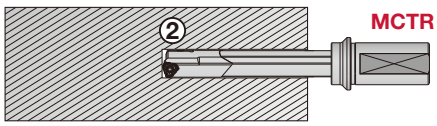
⑦ For a through hole
Continue drilling until the drill head passes through the workpiece by 1.0".
Note: When machining gummy materials such as low carbon steel, reduce the feed rate to 70% of the normal level right before exiting the material to prevent chips from scattering.
⑧ Stop the rotation and coolant
⑨ Return the drill, and operation finished

How to use a trlg type deeptri-drill on a horizontal machining center or boring machine

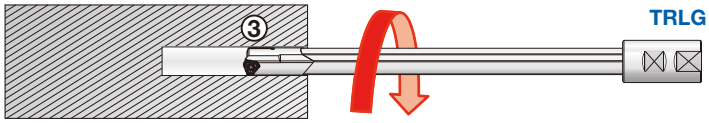
When using the TRLG drill on a conventional machining center or horizontal boring machine where there are no drilling-bush supports available, a pilot hole needs to be further deepened with a MCTR drill to better support the long gundrill. A long gundrill such as the TRLG type drill tends to “whip” when the pilot hole is too short to support the gundrill.



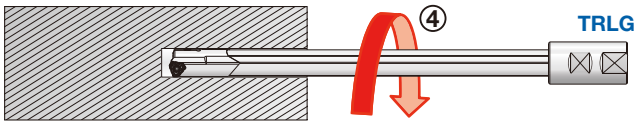
① Drill a pilot hole



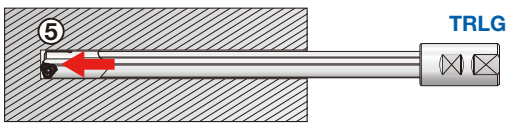
② Expand the pilot hole deeper using a MCTR drill



③ Drill with a TRLG drill at a reduced rotation and feed. Use the following parameters:
No. of revolution: *n* = 50 - 100 rpm
Feed speed: *Vf* = 4 - 12 ipm



④When DeepTri-Drill reaches all the way to the end of the pilot hole, increase drill rotation to full machining speed.



⑤Start feeding to complete the drilling

(Caution)
Always use Step ② to prevent the gundrill from whipping, which may lead to drill breakage and a possible superfluous injury.

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Breaking of drill	At entry into workpiece	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The machine's rapid feed is used.	Use cutting feed.
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The shape of the guide bush is not suitable.	Use the guide bush in the shape suitable for the workpiece.
		Drill	The drill is not set properly.	Set the drill with an appropriate torque, hydraulic pressure, etc.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During drilling	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The shape of the guide bush is not suitable.	Modify the shape of the guide bush. See “Chip packing” for the details.
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See “Short tool life” for the details.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See “Chip packing” for the details.
	At exit from workpiece	Drill	The tip is too long.	Make the tip length short.
			The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			The clearance of the coolant hole is too large.	Reduce the clearance of the coolant hole.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During retracting	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
		Cutting condition	Burnishing torque (cutting power) is increased due to reduced hole diameter.	Reduce cutting speed (*Vc*).

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Hole accuracy	Rough surface finish	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10μm or less).
			The run-out of the spindle is too large.	Minimize the run-out of the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See “Short tool life” for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Others	Chip packing occurs.	See “Chip packing” for the details.
	Unacceptable circularity, cyndricity, and oversize	Machine	The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
		Drill	Abnormal damage occurs.	See “Short tool life” for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See “Chip packing” for the details.
	Bending of hole	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Workpiece	The workpiece has blow holes or unevenness.	Use the workpiece without defect.
			The workpiece surface is slanted at the entry.	Use low feed.
			Interrupted or cross drilling is required.	Change the tool to a standard gundrill.

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Short tool life	Abnormal wear	Machine	The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10μm or less).
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003" and +0.008").
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The coolant temperature is too high.	Increase the capacity of the tank.
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
			The drill's overall length is excessive.	Reduce the drill's overall length.
			Excessive wear occurs and the chip shape changes.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The cutting speed (*Vc*) is too high.	Reduce the cutting speed.
			The feed (*f*) is too high.	Reduce the feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	The material quality varies.	Reduce the cutting speed (*Vc*).
Chip control	Chip packing	Machine	The shape of the guide bush is not suitable.	Modify the tip of the guide bush to match the shape of the workpiece surface at the entry.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
			The chip box is too small for smooth chip evacuation.	Enlarge the chip box.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
			The operation is for stacked plates.	Change the cutting edge shape so that the cores become small.
			The material quality varies.	Increase the feed.
	Chip entanglement	Drill	The cutting edge is fractured or chipped.	See "Breakage" for the details.
			Wear on the outer corner is excessive.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The feed (*f*) is too low.	Increase the feed.
		Workpiece	Drilling a center hole is required.	Make the center hole as small as the drill diameter and increase the coolant pressure.

DEEPTRIDRILL Designation system

Designation for tailor-made tools

Special tool code may be created per below according to your specific drilling needs.

①	②		③		④
MCTR	18.50	XM	25	-	22

① Series	
MCTR	DeepTri-Drill (For machining centers and lathes)
MCTRCH	DeepTri-Drill (For cross hole drilling on machining centers and CNC lathes)

② Drill dia. DC (mm)	
18.50	18.50

③ Driver dia. DCONMS (mm)	
25	25

④ LU/DC ratio

For tailor-made drills, use the guide below to make the designation (Cat. No).

①	②		③		④
TRLG	18.50	X	900	-	23

① Series	
TRLG	DeepTri-Drill (For gundrill machines)
TRLGCH	DeepTri-Drill (For cross hole drilling on gundrilling machines)

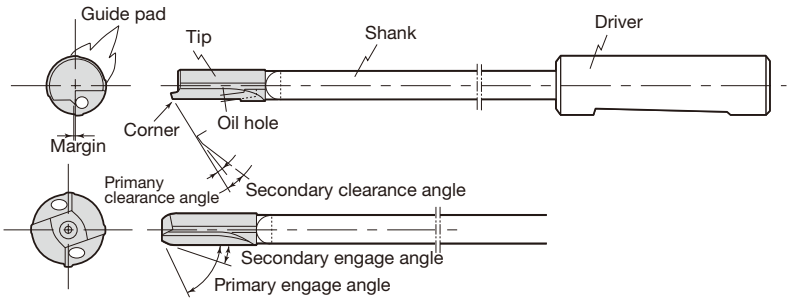
② Drill dia. DC (mm)	
18.50	18.50

③ Overall length: *L* (mm)	
900	900

④ Driver code	
23	23

Reamer

Nomenclature for gun reamer



Troubleshooting in gun reaming

Trouble		Possible cause		Countermeasure
Breaking of reamer		Increased burnishing torque due to excessively small stock allowance	● Chamfer angle small	● Enlarge chamfer angle and increase stock allowance
			● Excessive wear in peripheral cutting edge.	● Reduce cutting speed to prevent peripheral wear of edge ● Increase lubricity of cutting fluid
		Sticking	● Faulty filtering of cutting fluid ● Incorrect selection of cutting fluid ● Insufficient cutting fluid pressure	● Improve filtering accuracy ● Change to fluid with higher lubricity ● Increase fluid pressure
		Mechanical trouble		● Repair electrical system ● Improve clamping method of workpiece
Faulty machining accuracy	Unacceptable surface roughness Too large and inconsistent over size	Excessive feed rate per tooth		● Reduce fluid pressure ● Increase number of teeth
		Improper tool specifications	● Excessive chamfer angle ● Excessive back taper ● Peripheral run out excessive	● Reduce chamfer angle ● Reduce back taper ● Improve run out accuracy
		Faulty regrinding	● Cutting edge run out is large ● Residual damage of preceding process	● Improve run out accuracy ● Remove residual damage completely
		Improper cutting fluid	● Excessive fluid pressure ● Improper selection of cutting fluid	● Reduce fluid pressure ● Increase activity and lubricity of the fluid
		Faulty machine accuracy		● Correct spindle run out and bushing clearance and alignment
		Faulty clamping of workpiece	● Clamping position wrong ● Clamping force inadequate	● Improper clamping position ● Increase clamping force
	Defective out-of-roundness	Faulty machine accuracy	● Excessive bushing clearance ● Faulty spindle run out and alignment	● Correct bushing clearance ● Correct spindle run out and alignment
		Improper tool specifications	● Outer run out of reamer large ● Insufficient reamer rigidity	● Correct peripheral run out ● Increase reamer rigidity
		Faulty clamping position of workpiece		● Change clamping position
		Unevenness in wall thickness of workpiece		● Reduce reamer guide width (margin width)
	Insufficient oversize allowance	Chamfer angle small		● Increase chamfer angle
		Excessive wear in peripheral cutting edge	● Too high cutting speed ● Faulty lubricity of cutting fluid	● Decrease cutting speed ● Increase lubricating capacity
		Faulty regrinding (residual damage)		● Increase regrinding stock amount

International Tolerance

IT (International Tolerance) Grades

IT grades shows a tolerance allowable for difference of the diameters of a hole and a shaft. As the number added after IT increases, the tolerance becomes rough. Depending on the basic size, the tolerance value in each grade varies.
In the catalog, IT grades are shown as a guide of dimensional dispersion in the diameters of holes machined with the drill. For information, H8 tolerance for a ø8.0 hole is 0 to + 0.022 mm, the width of the value is the same as that of IT 8.
In the Table shown below, tolerance areas attainable with typical drilling tools are distinguished by using different colors. Solid drills are generally used for machining holes of IT 9 to 12. For machining a hole of better than IT 8, finishing process such as reaming is required. For a hole better than IT 5, high-precision finishing is required. Above description is based on machining of general steel. In practice, the IT grade attained with the tool varies widely depending on the hardness and the composition of the work material.

Basic size (mm)		International tolerance grade																
		IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10	IT11	IT12	IT13	IT14	IT15	IT16	IT17	IT18
>	≤						(μm)							(mm)					
-	3	0.8	1.2	2	3	4	6	10	14	25	40	60	0.1	0.14	0.25	0.4	0.6	1	1.4
3	6	1	1.5	2.5	4	5	8	12	18	30	48	75	0.12	0.18	0.3	0.48	0.75	1.2	1.8
6	10	1	1.5	2.5	4	6	9	15	22	36	58	90	0.15	0.22	0.36	0.58	0.9	1.5	2.2
10	18	1.2	2	3	5	8	11	18	27	43	70	110	0.18	0.27	0.43	0.7	1.1	1.8	2.7
18	30	1.5	2.5	4	6	9	13	21	33	52	84	130	0.21	0.33	0.52	0.84	1.3	2.1	3.3
30	50	1.5	2.5	4	7	11	16	25	39	62	100	160	0.25	0.39	0.62	1	1.6	2.5	3.9
50	80	2	3	5	8	13	19	30	46	74	120	190	0.3	0.46	0.74	1.2	1.9	3	4.6
80	120	2.5	4	6	10	15	22	35	54	87	140	220	0.35	0.54	0.87	1.4	2.2	3.5	5.4
120	180	3.5	5	8	12	18	25	40	63	100	160	250	0.4	0.63	1	1.6	2.5	4	6.3
180	250	4.5	7	10	14	20	29	46	72	115	185	290	0.46	0.72	1.15	1.85	2.9	4.6	7.2
250	315	6	8	12	16	23	32	52	81	130	210	320	0.52	0.81	1.3	2.1	3.2	5.2	8.1
315	400	7	9	13	18	25	36	57	89	140	230	360	0.57	0.89	1.4	2.3	3.6	5.7	8.9
400	500	8	10	15	20	27	40	63	97	155	250	400	0.63	0.97	1.55	2.5	4	6.3	9.7
500	630	9	11	16	22	32	44	70	110	175	280	440	0.7	1.1	1.75	2.8	4.4	7	11
630	800	10	13	18	25	36	50	80	125	200	320	500	0.8	1.25	2	3.2	5	8	12.5
800	1000	11	15	21	28	40	56	90	140	230	360	560	0.9	1.4	2.3	3.6	5.6	9	14
1000	1250	13	18	24	33	47	66	105	165	260	420	660	1.05	1.65	2.6	4.2	6.6	10.5	16.5
1250	1600	15	21	29	39	55	73	125	195	310	500	780	1.25	1.95	3.1	5	7.8	12.5	19.5
1600	2000	18	25	35	46	65	92	150	230	370	600	920	1.5	2.3	3.7	6	9.2	15	23
2000	2500	22	30	41	55	78	110	175	280	440	700	1100	1.75	2.8	4.4	7	11	17.5	28
2500	3150	26	36	50	68	96	135	210	330	540	860	1350	2.1	3.3	5.4	8.6	13.5	21	33

Tolerance area requiring finishing process such as with a reamer.

Tolerance area attainable with a solid drill.

Tolerance area attainable with an indexable drill.

Deviations in Commonly Used Fits

Deviations of Shafts to be Used in Commonly Used Fits (JIS B0401 extract)

Basic size step (mm)		Tolerance zone class of shaft (μm)															
>	≤	e9	f6	f7	f8	g5	g6	h5	h6	h7	h8	h9	js5	js6	js7	k5	k6
–	3	−14 −39	−6 −12	−6 −16	−6 −20	−2 −6	−2 −8	0 −4	0 −6	0 −10	0 −14	0 −25	±2	±3	±5	+4 0	+6 0
3	6	−20 −50	−10 −18	−10 −22	−10 −28	−4 −9	−4 −12	0 −5	0 −8	0 −12	0 −18	0 −30	±2.5	±4	±6	+6 +1	+9 +1
6	10	−25 −61	−13 −22	−13 −28	−13 −35	−5 −11	−5 −14	0 −6	0 −9	0 −15	0 −22	0 −36	±3	±4.5	±7	+7 +1	+10 +1
10	14	−32 −75	−16 −27	−16 −34	−16 −43	−6 −14	−6 −17	0 −8	0 −11	0 −18	0 −27	0 −43	±4	±5.5	±9	+9 +1	+12 +1
14	18																
18	24	−40 −92	−20 −33	−20 −41	−20 −53	−7 −16	−7 −20	0 −9	0 −13	0 −21	0 −33	0 −52	±4.5	±6.5	±10	+11 +2	+15 +2
24	30																
30	40	−50 −112	−25 −41	−25 −50	−25 −64	−9 −20	−9 −25	0 −11	0 −16	0 −25	0 −39	0 −62	±5.5	±8	±12	+13 +2	+18 +2
40	50																
50	65	−60 −134	−30 −49	−30 −60	−30 −76	−10 −23	−10 −29	0 −13	0 −19	0 −30	0 −46	0 −74	±6.5	±9.5	±15	+15 +2	+21 +2
65	80																
80	100	−72 −159	−36 −58	−36 −71	−36 −90	−12 −27	−12 −34	0 −15	0 −22	0 −35	0 −54	0 −87	±7.5	±11	±17	+18 +3	+25 +3
100	120																

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

Deviations of Holes to be Used in Commonly Used Fits. (JIS B0401 extract)

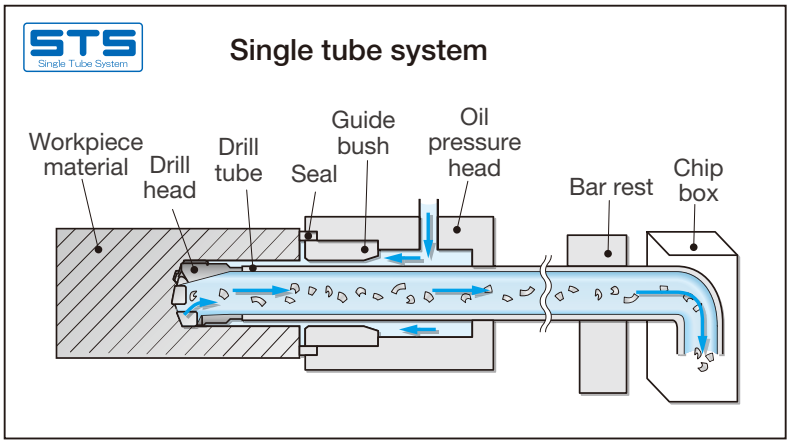
Basic size step (mm)		Tolerance zone class of hole (μm)															
>	≤	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7	H8	H9	H10	JS6	JS7	K6	K7
–	3	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0	+14 0	+25 0	+40 0	±3	±5	0 −6	0 −10
3	6	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0	+18 0	+30 0	+48 0	±4	±6	+2 −6	+3 −9
6	10	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0	+22 0	+36 0	+58 0	±4.5	±7	+2 −7	+5 −10
10	14	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0	±5.5	±9	+2 −9	+6 −12
14	18																	
18	24	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0	±6.5	±10	+2 −11	+6 −15
24	30																	
30	40	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+62 0	+100 0	±8	±12	+3 −13	+7 −18
40	50																	
50	65	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0	+46 0	+74 0	+120 0	±9.5	±15	+4 −15	+9 −21
65	80																	
80	100	+107 +72	+126 +72	+159 +72	+58 +36	+71 +36	+90 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+87 0	+140 0	±11	±17	+4 −18	+10 −25
100	120																	

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

Single Tube System (STS) and Double Tube System (DTS)

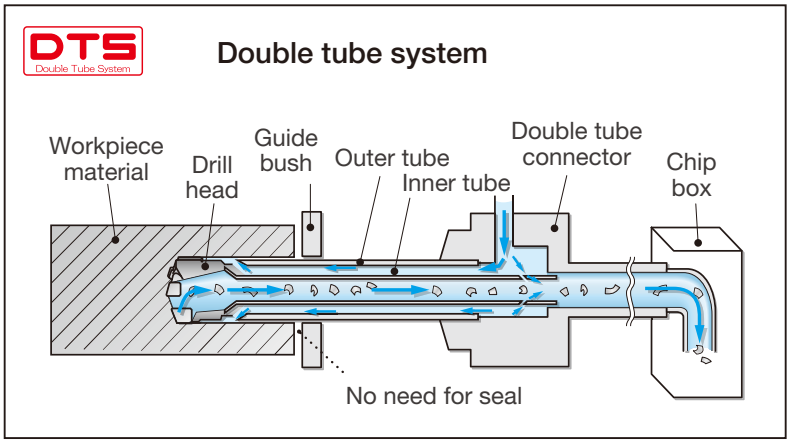
Single Tube System (STS)

The STS may also be referred to as the BTA system in the deep hole drilling process. A large volume of coolant is pumped under high pressure to the cutting area in the workpiece. Chips are then forced out through the drill tube at the back and they do not touch workpiece allowing super surface finish. STS is a very good method to obtain holes of high productivity and high accuracy by using a dedicated drilling machine and a sealing with the workpiece.



Double Tube System (DTS)

The DTS is characterized by its two tube construction and is therefore known as the double tube system. A sealing system and pressure head, which is required in the Single Tube System (STS) is not necessary for the DTS and it is therefore suitable for conventional general purpose machines such as lathes or machining centers.
In general, because of less efficient chip evacuation than the STS the recommended max drilling depth is 1000mm. However, the unique DTC-R tube connector that is capable of supplying high pressure coolant can successfully achieve drilling depths of up to 2000 mm.

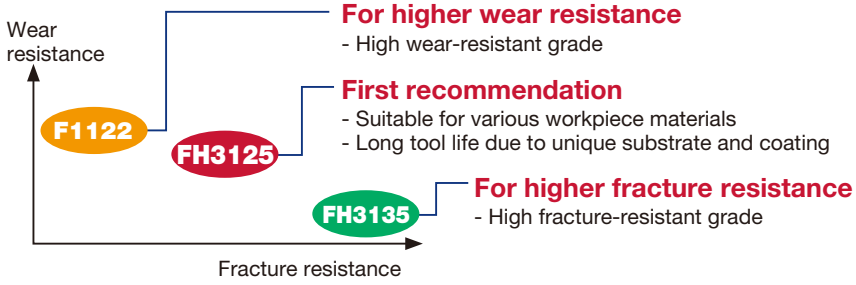


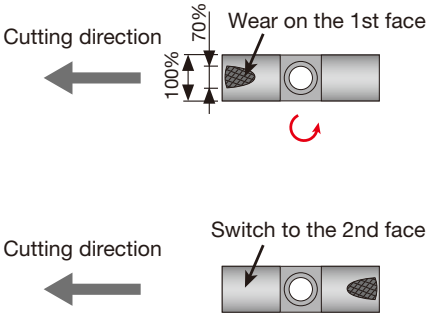
Deep hole drilling head series

Replacing guide pads

Guide pads are subject to wear, like inserts

- The guide pad can be used on two end faces.
- When the first face wears up to 70% of its width, reverse the guide pad to use the second face.
- Replace with a new guide pad when the second face wears out.



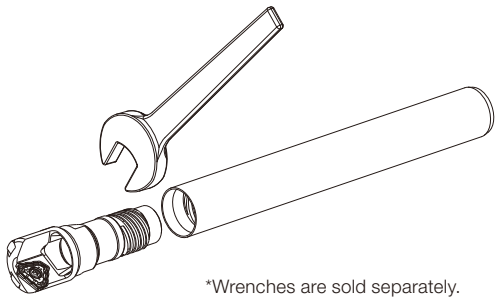


GP	06-085	F1122
Series	Size	Grade

GP	06-20-085	-DC	FH3135
Series	Size	Double chamfer	Grade

Replacing guide pads

Please be sure to use a wrench for a drill head to be clamped firmly.



*Wrenches are sold separately.

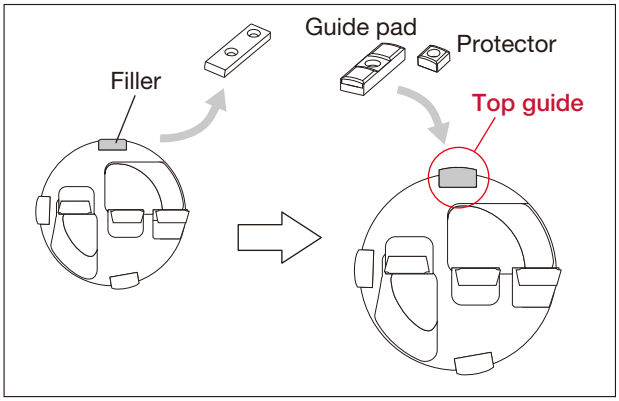
WHEN TO REPLACE THE FILLER WITH A GUIDE PAD AND PROTECTOR

Replace the filler with a guide pad and protector when following is required:

- Higher hole precision
- Deep holes with an L/D ratio of over 50:1
- Drilling parts with a center hole
- A large stock removal that exceeds the marginal DOC* of the peripheral edge as specified in the list below.

*Maximum DOC of peripheral insert

Cartridge	DOC (mm)	Guide pad
OZ402-04	6.4	GP08.../GP10...
OZ402-32	7.2	GP10.../GP14...
OZ402-43	10.4	GP14.../GP18...
OZ402-63	12.0	GP18...

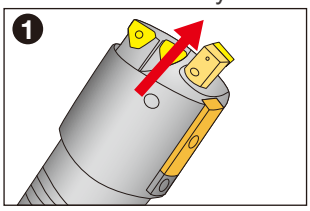


There is no pocket for the top guide pad furnished on the drill heads in diameters smaller than 92 mm.
Please contact your dealer for further information.

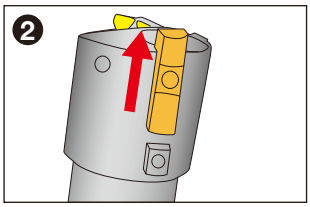
Drill diameter calibration

Please note that inserts must be ordered separately as they are not included in the UNIDEX tool.
To achieve successful drilling with UNIDEX deep hole drill, it is critical to set and maintain adequate clearance between the tool diameter and guide pad diameter. After installing inserts, make sure to properly calibrate the tool diameter by following the steps outlined below.
Always proceed with the same calibration procedures when the inserts are indexed or exchanged. This is especially important when using inserts from a new batch as they may greatly deviate the tool diameter.

⚠ Poor hole precision, abnormal wear of inserts or guide pads, or serious tool damage may occur if the insert and guide pad diameters are not properly calibrated.



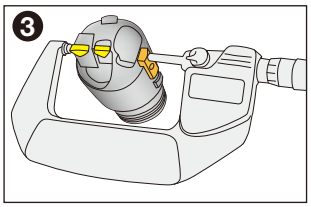
❶ Remove the intermediate cartridge to avoid interference with the guide screw.



❷ Move the dimensional guide pad to the measuring position parallel to the peripheral insert.

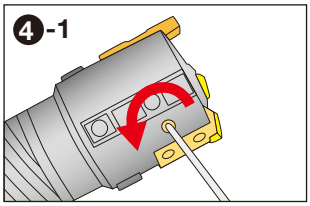
❷-1 Unscrew the lock screw of the dimensional guide pad and slide the dimensional guide pad to the measuring position.

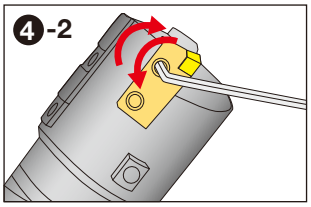
❷-2 Tighten the lock screw to fix the guide pad.

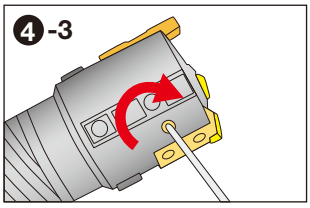


❸ Measure the diameter with a micrometer.
Use an h8 tolerance for the tool diameter unless otherwise required.

If the diameter at this point is out of tolerance, go to Step ❹.
If the diameter at this point is in tolerance, go to Step ❺.







❹ Adjust the peripheral cartridge

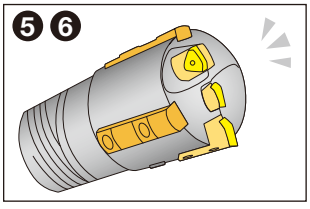
❹-1 First loosen the lock screw of the peripheral cartridge and then slightly re-tighten the lock screw.

❹-2 Adjust the cartridge by loosening or tightening the two adjusting screws on the cartridge and measure the diameter using a micrometer. Repeat steps until the required diameter is attained.

❹-3 After attaining the required diameter, securely tighten the lock screw to fix the cartridge.

❹-4 Measure the diameter with a micrometer to assure that the required diameter is attained. If not attained, start from Step ❹-1.

⚠ Make sure that the two adjusting screws on the peripheral cartridge are tightened. If the tool is used with either of the screws left loosened, the cartridge will move during machining due to cutting forces and may cause damage.



❺ Return the dimensional guide pad to the original position and tighten the lock screw.

❻ Replace the intermediate cartridge to the original position and tighten the lock screw.

⚠ Whenever inserts are indexed or exchanged, always make sure that all the screws on the drill are securely tightened. If chatter occurred during machining, it may cause the screws to be loosened.

Approximate Conversion Table of Hardness

● Approximate conversion value for Brinell hardness. *1

(The source: JIS HB Ferrous Materials and Metallurgy I -2005)

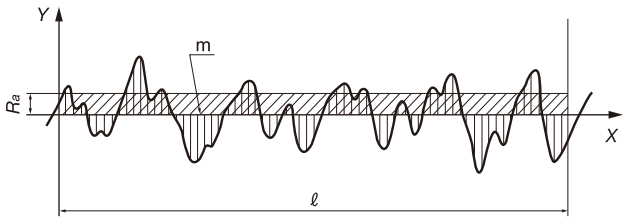
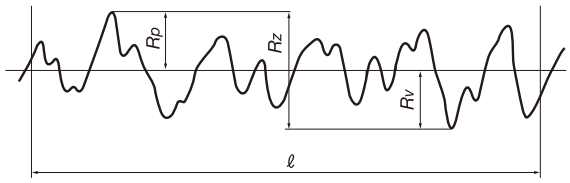
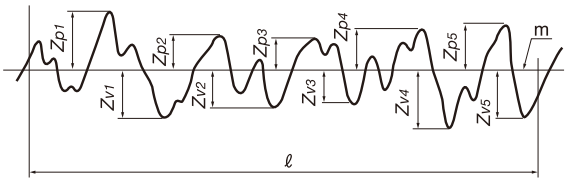
HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
–	–	940	85.6	–	68.0	76.9	97	–
–	–	920	85.3	–	67.5	76.5	96	–
–	–	900	85.0	–	67.0	76.1	95	–
–	(767)	880	84.7	–	66.4	75.7	93	–
–	(757)	860	84.4	–	65.9	75.3	92	–
–	(745)	840	84.1	–	65.3	74.8	91	–
–	(733)	820	83.8	–	64.7	74.3	90	–
–	(722)	800	83.4	–	64.0	73.8	88	–
–	(712)	–	–	–	–	–	–	–
–	(710)	780	83.0	–	63.3	73.3	87	–
–	(698)	760	82.6	–	62.5	72.6	86	–
–	(684)	740	82.2	–	61.8	72.1	–	–
–	(682)	737	82.2	–	61.7	72.0	84	–
–	(670)	720	81.8	–	61.0	71.5	83	–
–	(656)	700	81.3	–	60.1	70.8	–	–
–	(653)	697	81.2	–	60.0	70.7	81	–
–	(647)	690	81.1	–	59.7	70.5	–	–
–	(638)	680	80.8	–	59.2	70.1	80	–
–	630	670	80.6	–	58.8	69.8	–	–
–	627	667	80.5	–	58.7	69.7	79	–
–	–	677	80.7	–	59.1	70.0	–	–
–	601	640	79.8	–	57.3	68.7	77	–
–	–	640	79.8	–	57.3	68.7	–	–
–	578	615	79.1	–	56.0	67.7	75	–
–	–	607	78.8	–	55.6	67.4	–	–
–	555	591	78.4	–	54.7	66.7	73	2055
–	–	579	78.0	–	54.0	66.1	–	2015
–	534	569	77.8	–	53.5	65.8	71	1985
–	–	553	77.1	–	52.5	65.0	–	1915
–	514	547	76.9	–	52.1	64.7	70	1890
(495)	–	539	76.7	–	51.6	64.3	–	1855
–	–	530	76.4	–	51.1	63.9	–	1825
–	495	528	76.3	–	51.0	63.8	68	1820
(477)	–	516	75.9	–	50.3	63.2	–	1780
–	–	508	75.6	–	49.6	62.7	–	1740
–	477	508	75.6	–	49.6	62.7	66	1740
(461)	–	495	75.1	–	48.8	61.9	–	1680
–	–	491	74.9	–	48.5	61.7	–	1670
–	461	491	74.9	–	48.5	61.7	65	1670
444	–	474	74.3	–	47.2	61.0	–	1595
–	–	472	74.2	–	47.1	60.8	–	1585
–	444	472	74.2	–	47.1	60.8	63	1585

HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
429	429	455	73.4	–	45.7	59.7	61	1510
415	415	440	72.8	–	44.5	58.8	59	1460
401	401	425	72.0	–	43.1	57.8	58	1390
388	388	410	71.4	–	41.8	56.8	56	1330
375	375	396	70.6	–	40.4	55.7	54	1270
363	363	383	70.0	–	39.1	54.6	52	1220
352	352	372	69.3	(110.0)	37.9	53.8	51	1180
341	341	360	68.7	(109.0)	36.6	52.8	50	1130
331	331	350	68.1	(108.5)	35.5	51.9	48	1095
321	321	339	67.5	(108.0)	34.3	51.0	47	1060
311	311	328	66.9	(107.5)	33.1	50.0	46	1025
302	302	319	66.3	(107.0)	32.1	49.3	45	1005
293	293	309	65.7	(106.0)	30.9	48.3	43	970
285	285	301	65.3	(105.5)	29.9	47.6	–	950
277	277	292	64.6	(104.5)	28.8	46.7	41	925
269	269	284	64.1	(104.0)	27.6	45.9	40	895
262	262	276	63.6	(103.0)	26.6	45.0	39	875
255	255	269	63.0	(102.0)	25.4	44.2	38	850
248	248	261	62.5	(101.0)	24.2	43.2	37	825
241	241	253	61.8	100.0	22.8	42.0	36	800
235	235	247	61.4	99.0	21.7	41.4	35	785
229	229	241	60.8	98.2	20.5	40.5	34	765
223	223	234	–	97.3	(18.8)	–	–	–
217	217	228	–	96.4	(17.5)	–	33	725
212	212	222	–	95.5	(16.0)	–	–	705
207	207	218	–	94.6	(15.2)	–	32	690
201	201	212	–	93.8	(13.8)	–	31	675
197	197	207	–	92.8	(12.7)	–	30	655
192	192	202	–	91.9	(11.5)	–	29	640
187	187	196	–	90.7	(10.0)	–	–	620
183	183	192	–	90.0	(9.0)	–	28	615
179	179	188	–	89.0	(8.0)	–	27	600
174	174	182	–	87.8	(6.4)	–	–	585
170	170	178	–	86.8	(5.4)	–	26	570
167	167	175	–	86.0	(4.4)	–	–	560
163	163	171	–	85.0	(3.3)	–	25	545
156	156	163	–	82.9	(0.9)	–	–	525
149	149	156	–	80.8	–	–	23	505
143	143	150	–	78.7	–	–	22	490
137	137	143	–	76.4	–	–	21	460
131	131	137	–	74.0	–	–	–	450
126	126	132	–	72.0	–	–	20	435
121	121	127	–	69.8	–	–	19	415
116	116	122	–	67.6	–	–	18	400
111	111	117	–	65.7	–	–	15	385

Note :
*1: This table is based on AMS Metals Handbook, the 8th Edition, Volume 1, and includes some information added to “Approx. tensile strength (MPa),” such as the values calculated in metric; and Brinell hardness that exceeds recommended values.
*2: 1 MPa = 1 N/mm^2
*3: Figures in ( ) are not commonly used. It’s just reference.

Surface Roughness

(According to JIS B 0601, 2001 and its explanation.)

Type	Symbol	How to determine	Example (Fig.)
Arithmetic mean roughness	***Ra***	*Ra* means the value obtained by the following formula and expressed in micrometer (μm) when sampling only the reference length from the roughness curve in the direction of mean line, taking X-axis in the direction of mean line and Y-axis in the direction of longitudinal magnification of this sampled part and the roughness curve is expressed by *y- f (x)*: $Ra = \frac{1}{\ell}\int_0^1 \lvert f(x) \rvert dx$ where, ℓ : reference length	
Maximum height	***Rz***	*Rz* shall be that only the reference length is sampled from the roughness curve in the direction of mean line, the distance between the top of profile peak line and the bottom of profile valley line on this sampled portion is measured in the longitudinal magnification direction of roughness curve and the obtained value is expressed in micrometer (μm). $Rz = Rp + Rv$	
Ten point mean roughness	***RzJIS***	*RzJIS* shall be that only the reference length is sampled from the roughness curve in the direction of its mean line, the sum of the average value of absolute values of the heights of five highest profile peaks (*Zp*) and the depths of five deepest profile valleys (*Zv*) measured in the vertical magnification direction from the mean line of this sampled portion and this sum is expressed in micrometer (μm) $RzJIS = \frac{\lvert Zp1+Zp2+Zp3+Zp4+Zp5 \rvert + \lvert Zv1+Zv2+Zv3+Zv4+Zv5 \rvert}{5}$	 where, $Zp1$, $Zp2$, $Zp3$, $Zp4$, $Zp5$: altitudes of the heights of five highest profile peaks of the sampled portion corresponding to the reference length ℓ where, $Zv1$, $Zv2$, $Zv3$, $Zv4$, $Zv5$: altitudes of the depths of five deepest profile valleys of the sampled portion corresponding to the reference length ℓ

Symbols of Metals

● Carbon steel and alloy steel for structural use

Type	Japan	International	Other countries				
			U.S.A.	Great Britain	Germany	France	Russia
	JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Carbon steel	S10C	C10	1010	C10 C10E C10R	C10E C10R	C10E C10R	–
	S15C	C15E4 C15M2	1015	C15 C15E C15R	C15E C15R	C15E C15R	–
	S20C	–	1020	C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	–
	S25C	C25 C25E4 C25M2	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	–
	S30C	C30 C30E4 C30M2	1030	C30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
	S35C	C35 C35E4 C35M2	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
	S40C	C40 C40E4 C40M2	1039 1040	C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
	S43C	–	1042 1043	080A42	–	–	40Г
	S45C	C45 C45E4 C45M2	1045 1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
	S48C	–	–	–	–	–	45Г
	S50C	C50 C50E4 C50M2	1049	C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
	S53C	–	1050 1053	–	–	–	50Г
	S55C	C55 C55E4 C55M2	1055	C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	–
	S58C	C60 C60E4 C60M2	1059 1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Nickel chromium steel	SNC236	–	–	–	–	–	40XH
		SNC415(H)	–	–	–	–	–	–
		SNC631(H)	–	–	–	–	–	30XH3A
		SNC815(H)	15NiCr13	–	15NiCr13	15NiCr13	15NiCr13	–
		SNC836	–	–	–	–	–	–
	Nickel chromium molybdenum steel	SNCM220	20NiCrMo2 20NiCrMoS2	8615 8617(H) 8620(H) 8622(H)	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	–
		SNCM240	41CrNiMo2 41CrNiMoS2	8637 8640	–	–	–	–
		SNCM415	–	–	–	–	–	–
		SNCM420(H)	–	4320(H)	–	–	–	20XH2M(20XHM)
		SNCM431	–	–	–	–	–	–
		SNCM439	–	4340	–	–	–	–
		SNCM447	–	–	–	–	–	–
		SNCM616	–	–	–	–	–	–
		SNCM625	–	–	–	–	–	–
		SNCM630	–	–	–	–	–	–
		SNCM815	–	–	–	–	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

● Alloy steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Chromium steel	SCr415(H)	–	–	17Cr3 17CrS3	17Cr3 17CrS3	17Cr3 17CrS3	15X 15XA
		SCr420(H)	20Cr4(H) 20CrS4	5120(H)	–	–	–	20X
		SCr430(H)	34Cr4 34CrS4	5130(H) 5132(H)	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
		SCr435(H)	34Cr4 34CrS4 37Cr4 37CrS4	5132	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
		SCr440(H)	37Cr4 37CrS4 41Cr4 41CrS4	5140(H)	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445(H)	–	–	–	–	–	45X
	Chromium molybdenum steel	SCM415(H)	–	–	–	–	–	–
		SCM418(H)	18CrMo4 18CrMoS4	–	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	20XM
		SCM420(H)	–	–	708M20(708H20)	–	–	20XM
		SCM430	–	4130	–	–	–	30XM 30XMA
		SCM432	–	–	–	–	–	–
		SCM435(H)	34CrMo4 34CrMoS4	4137(H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		SCM440(H)	42CrMo4 42CrMoS4	4140(H) 4142(H)	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	–
		SCM445(H)	–	4145(H) 4147(H)	–	–	–	–
	Manganese steel and manganese chromium steel	SMn420(H)	22Mn6(H)	1522(H)		–	–	–
		SMn433(H)	–	1534	–	–	–	30Г2 35Г2
		SMn438(H)	36Mn6(H)	1541(H)	–	–	–	35Г2 40Г2
		SMn443(H)	42Mn6(H)	1541(H)	–	–	–	40Г2 45Г2
		SMnC420(H)	–	–	–	–	–	–
		SMnC443(H)	–	–	–	–	–	–
	Aluminium chromium molybdenum steel	SACM645	41CrAlMo74	–	–	–	–	–

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS201	X12CrMnNiN17-7-5	S20100	201			Z12CMN17-07Az	
		SUS202	X12CrMnNiN18-9-5	S20200	202	284S16			12X17Г9AH4
		SUS301	X10CrNi18-8	S30100	301	301S21	X12CrNi17-7	Z11CN17-08	07X16H6
		SUS301L	X2CrNiN18-7				X2CrNiN18-7		
		SUS301J1					X12CrNi17-7		
		SUS302		S30200	302	302S25		Z12CN18-09	12X18H9
		SUS302B	X12CrNiSi18-9-3	S30215	302B				
		SUS303	X10CrNiS18-9	S30300	303	303S21	X10CrNiS18-9	Z8CNF18-09	
		SUS303Se		S30323	303Se	303S41			12X18H10E
		SUS303Cu							
		SUS304	X5CrNi18-9	S30400	304	304S31	X5CrNi18-10	Z7CN18-09	08X18H10
		SUS304L	X2CrNi18-9	S30403	304L	304S11	X2CrNi19-11	Z3CN19-11	03X18H11
		SUS304N1	X5CrNiN18-8	S30451	304N			Z6CN19-09Az	
		SUS304N2		S30452					
		SUS304LN	X2CrNiN18-9	S30453	304LN		X2CrNiN18-10	Z3CN18-10Az	
		SUS304J1							
		SUS304J2							
		SUS304J3		S30431	S30431				
		SUS305	X6CrNi18-12	S30500	305	305S19	X5CrNi18-12	Z8CN18-12	06X18H11

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS305J1							
		SUS309S		S30908	309S			Z10CN24-13	
		SUS310S	X6CrNi25-21	S31008	310S	310S31		Z8CN25-20	10X23H18
		SUS315J1							
		SUS315J2							
		SUS316	X5CrNiMo17-12-2 X3CrNiMo17-12-3	S31600	316	316S31	X5CrNiMo17-12-2 X5CrNiMo17-13-3	Z7CND17-12-02 Z6CND18-12-03	
		SUS316F							
		SUS316L	X2CrNiMo17-12-2 X2CrNiMo17-12-3 X2CrNiMo18-14-3	S31603	316L	316S11	X2CrNiMo17-13-2 X2CrNiMo17-14-3	Z3CND17-12-02 Z3CND17-12-03	03X17H14M3
		SUS316N		S31651	316N				
		SUS316LN	X2CrNiMoN17-11-2 X2CrNiMoN17-12-3	S31653	316LN		X2CrNiMoN17-12-2 X2CrNiMoN17-13-3	Z3CND17-11Az Z3CND17-12Az	
		SUS316Ti	X6CrNiMoTi17-12-2	S31635			X6CrNiMoTi17-12-2	Z6CNDT17-12	08X17H13M2T
		SUS316J1							
		SUS316J1L							
		SUS317		S31700	317	317S16			
		SUS317L	X2CrNiMo19-14-4	S31703	317L	317S12	X2CrNiMo18-16-4	Z3CND19-15-04	
		SUS317LN	X2CrNiMoN18-12-4	S31753				Z3CND19-14Az	
		SUS317J1							
		SUS317J2							
		SUS317J3L							
		SUS836L		N08367					
		SUS890L	X1CrNiMoCu25-20-5	N08904	N08904	904S14		Z2NCDU25-20	
		SUS321	X6CrNiTi18-10	S32100	321	321S31	X6CrNiTi18-10	Z6CNT18-10	08X18H10T
		SUS347	X6CrNiNb18-10	S34700	347	347S31	X6CrNiNb18-10	Z6CNNb18-10	08X18H12Б
		SUS384	X3NiCr18-16	S38400	384			Z6CN18-16	
		SUSXM7	X3CrNiCu18-9-4	S30430	304Cu	394S17		Z2CNU18-10	
		SUSXM15J1		S38100				Z15CNS20-12	
	Austenitic Ferritic	SUS329J1		S32900	329				
		SUS329J3L	X2CrNiMoN22-5-3	S31803	31803			Z3CNDU22-05Az	08X21H6M2T
		SUS329J4L	X2CrNiMoCuN25-6-3	S32250	32250			Z3CNDU25-07Az	
	Ferritic	SUS405	X6CrAl13	S40500	405	405S17	X6CrAl13	Z8CA12	
		SUS410L						Z3C14	
		SUS429		S42900	429				
		SUS430	X6Cr17	S43000	430	430S17	X6Cr17	Z8C17	12X17
		SUS430F	X7CrS17	S43020	430F		X7CrS18	Z8CF17	
		SUS430LX	X3CrTi17 X3CrNb17	S43035			X6CrTi17	Z4CT17	
		SUS430J1L	X2CrTi17				X6CrNb17	Z4CNb17	
		SUS434	X6CrMo17-1	S43400	434	434S17	X6CrMo17-1	Z8CD17-01	
		SUS436L	X1CrMoTi16-1	S43600	436				
		SUS436J1L							
		SUS444	X2CrMoTi18-2	S44400	444			Z3CDT18-02	
		SUS445J1							
		SUS445J2							
		SUS447J1		S44700					
		SUSXM27		S44627				Z1CD26-01	
	Martensitic	SUS403		S40300	403				
		SUS410	X12Cr13	S41000	410	410S21	X10Cr13	Z13C13	
		SUS410S	X6Cr13	S41008	410S	403S17	X6Cr13	Z8C12	08X13
		SUS410F2							
		SUS410J1		S41025					
		SUS416	X12CrS13	S41600	416	416S21		Z11CF13	
		SUS420J1	X20Cr13	S42000	420	420S29	X20Cr13	Z20C13	20X13
		SUS420J2	X30Cr13	S42000	420	420S37	X30Cr13	Z33C13	30X13
		SUS420F	X29CrS13	S42020	420F			Z30CF13	
		SUS420F2							
		SUS429J1							
		SUS431	X19CrNi16-2	S43100	431	431S29	X20CrNi17-2	Z15CN16-02	20X17H2
		SUS440A	X70CrMo15	S44002	440A			Z70C15	
		SUS440B		S44003	440B				
		SUS440C	X105CrMo17	S44004	440C			Z100CD17	95X18
		SUS440F		S44020	S44020				
	Precipitation hardening type	SUS630	X5CrNiCuNb16-4	S17400	S17400			Z6CNU17-04	
		SUS631	X7CrNiAl17-7	S17700	S17700		X7CrNiAl17-7	Z9CNA17-07	09X17H7Ю
		SUS631J1							

Note: The above chart is based on published data and not authorized by each manufacturer.

Heat resistant steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Heat resistant steel	Austenitic	SUH31				331S42		Z35CNWS14-14	45X14H14B2M
		SUH35		S63008		349S52		Z52CMN21-09Az	
		SUH36				349S54	X53CrMnNi21-9	Z55CMN21-09Az	55X20Г9 AH4
		SUH37		S63017		381S34			
		SUH38							
		SUH309		S30900	309	309S24		Z15CN24-13	
		SUH310		S31000	310	310S24	CrNi2520	Z15CN25-20	20X25H20C2
		SUH330		N08330	N08330			Z12NCS35-16	
		SUH660		S66286				Z6NCTV25-20	
		SUH661		R30155					
	Ferritic	SUH21					CrAl1205		
		SUH409	X6CrTi12	S40900	409	409S19	X6CrTi12	Z6CT12	
		SUH409L	X2CrTi12					Z3CT12	
		SUH446		S44600	446			Z12C25	15X28
	Martensitic	SUH1		S65007		401S45	X45CrSi9-3	Z45CS9	
		SUH3						Z40CSD10	40X10C2M
		SUH4				443S65		Z80CSN20-02	
		SUH11							40X9C2
		SUH600							20X12ВНМБФР
		SUH616		S42200					

Tool steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Carbon tool steel	SK140	–	–
	SK120	C120U	W1-11 1/2
	SK105	C105U	W1-10
	SK95	–	W1-9
	SK90	C90U	–
	SK85	–	W1-8
	SK80	C80U	–
	SK75	–	–
	SK70	C70U	–
	SK65	–	–
	SK60	–	–
High speed steel	SKH2	HS18-0-1	T1
	SKH3	–	T4
	SKH4	–	T5
	SKH10	–	T15
	SKH40	HS6-5-3-8	–
	SKH50	HS1-8-1	–
	SKH51	HS6-5-2	M2
	SKH52	HS6-6-2	M3-1
	SKH53	HS6-5-3	M3-2
	SKH54	HS6-5-4	M4
	SKH55	HS6-5-2-5	–
	SKH56	–	M36
	SKH57	HS10-4-3-10	–
	SKH58	HS2-9-2	M7
	SKH59	HS2-9-1-8	M42
Alloy tool steel	SKS11	–	F2
	SKS2	–	–
	SKS21	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Alloy tool steel	SKS5	–	–
	SKS51	–	L6
	SKS7	–	–
	SKS81	–	–
	SKS8	–	–
	SKS4	–	–
	SKS41	–	–
	SKS43	105V	W2-9 1/2
	SKS44	–	W2-8 1/2
	SKS3	–	–
	SKS31	–	–
	SKS93	–	–
	SKS94	–	–
	SKS95	–	–
	SKD1	X210Cr12	D3
	SKD2	X210CrW12	–
	SKD10	X153CrMoV12	–
	SKD11	–	D2
	SKD12	X100CrMoV5	A2
	SKD4	–	–
	SKD5	X30WCrV9-3	H21
	SKD6	–	H11
	SKD61	X40CrMoV5-1	H13
	SKD62	X35CrWMoV5	H12
	SKD7	32CrMoV12-28	H10
	SKD8	38CrCoWV18-17-17	H19
	SKT3	–	–
	SKT4	55NiCrMoV7	–
	SKT6	45NiCrMo16	–

Special use steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM11	–	1110
	SUM12	–	1109
	SUM21	9S20	1212
	SUM22	11SMn28	1213
	SUM22L	11SMnPb28	–
	SUM23	–	1215
	SUM23L	–	–
	SUM24L	11SMnPb28	12L14
	SUM25	12SMn35	–
	SUM31	–	1117
	SUM31L	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM32	–	–
	SUM41	–	1137
	SUM42	–	1141
	SUM43	44SMn28	1144
High carbon chromium	SUJ1	–	–
	SUJ2	B1	52100
	SUJ3	B2	ASTM A 485 Grade 1
	SUJ4	–	–
	SUJ5	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Casting or forging steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI ASTM	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Casting steel	Carbon steel casting	SC	200-400, 230-450, 270-480	U-	A1, A2	GS-	GE230, GE280, GE320	–
	Steel casting for welded structure	SCW	200-400W, 230-450W, 270-480W, 340-550W	WCA, WCB, WCC	A4	–	GE230, GE280	–
	Heat resisting steel casting	SCH	GX40CrSi24, GX40CrNiSi22-10, GX40NiCrSi38-19	Grade HC, HD, HF	309C30, 310C45, 330C12	–	GX40NiCrNb45-35, GX50NiCrCoW35-25-15-5	–
	Steel casting for high temperature and high pressure service	SCPH	–	Grade WC1, WC6, WC9	A1, A2, B1, B2, B3, B4, B5, B7	G20Mo5, G17CrMo5-5, G17CrMo5-10	G17CrMo9-10, GX15CrMo5, GP240GH, GP280GH	–
	Steel casting for low temperature and high pressure service	SCPL	–	Grade LCB, LC1, LC2, LC3	AL1, BL2	–	FB-M, FC1-M, FC2-M,FC3-M	–
Casting iron	Grey iron casting	FC	100,150,200,250, 300,350	No.20,25,30,35, 40,45,50	EN-GJL-	EN-GJL-	EN-GJL-	–
	Spheroidal graphite iron casting	FCD	700-2, 600-3, 500-7, 450-10, 400-15, 400-18, 350-22	60-40-18, 65-45-12, 8-55-06, 100-70-03, 120-90-02	EN-GJS-	EN-GJS-	EN-GJS-	ВЧ
	Austempered spheroidal graphite iron casting	FCAD	–	–	EN-GJS-	EN-GJS-	EN-GJS-	–
	Austenitic iron casting	FCA- FCDA-	L-, S-	Type 1, 2, Type D-2, D-3A Class 1, 2	F1, F2, S2W, S5S	GGL-, GGG-	L-, S-	–
Forging steel	Carbon steel forging for general use	SF	–	Class A, B, C, D, E, F	C22, C25, C30, C35, C40, C45, C50, C55, C60	P285, P355	P245, P280, P305	–
	Chromium molybdenum steel forgings for general use	SFCM	–	Class E, F, G, I Grade 3A, 4 Class G, J, K, L, M	–	–	–	–
	Nickel Chromium molybdenum steel forgings for general use	SFNCM	–	Class G, H, I, J Class 3A, 4, 5, 6 Class K, L, M	–	–	–	–

● Non-ferrous alloy

Type		Japan	International	Other countries			
				U.S.A.		Great Britain	Germany
		JIS	ISO	ASTM SAE		BS BS/EN	DIN DIN/EN
Copper alloy, Nickel alloy	Copper alloy casting	CAC101	–	–	–	–	
		CAC102	–	–	–	Cu-C(CC040AgrodeC)	
		CAC103	–	–	–	Cu-C(CC040AgrodeA,B)	
	Brass casting	CAC201	–	–	–	CuZn15As-C(CC760S)	
		CAC202	–	C85400	–	CuZn33Pb2-C(CC750S)	
		CAC203	–	C85700	–	CuZn39Pb1-C(CC754S)	
	High strength brass casting	CAC301	–	C86500	–	CuZn35Mn2Al1Fe-C(CC765S)	
		CAC302	–	C86400	–	CuZn34Mn3Al2Fe1-C(CC764S)	
		CAC303	–	C86200	–	CuZn25Al5Mn4Fe3-C(CC762S)	
		CAC304	–	C86300	–	CuZn25Al5Mn4Fe3-C(CC762S)	
	Bronze casting	CAC401	–	C84400	–	CuSn3Zn8Pb5-C(CC490K)	
		CAC402	–	C90300	–	–	
		CAC403	–	C90500	–	–	
		CAC406	–	C83600	–	CuSn5Zn5Pb5-C(CC490K)	
		CAC407	–	C92200	–	–	
	Phosphor bronze casting	CAC502A	–	C90700 C90800	–	CuSn10-C(CC480K) CuSn12-C(CC483K)	
		CAC502B	–		–		
		CAC503A	–		–		
		CAC503B	–		–		
	Aluminium bronze casting	CAC701	–	C95200	–	CuAl10Fe2-C(CC331G)	
		CAC702	–	C95400 C95410	–	CuAl10Ni3Fe2-C(CC332G)	
			–		–		
		CAC703	–	C95800	–	CuAl10Fe5Ni5-C(CC333G)	
		CAC704	–	C95700	–	–	
	Silicon bronze castings	CAC801	–	–	–	–	
		CAC802	–	C87500	–	–	
		CAC803	–	C87400	–	CuZn16Si4-C(CC761S)	

Note: The above chart is based on published data and not authorized by each manufacturer.

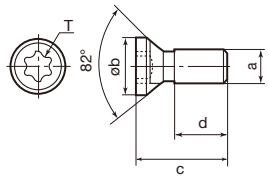
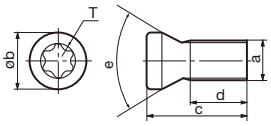
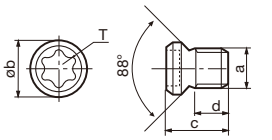
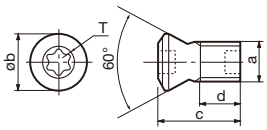
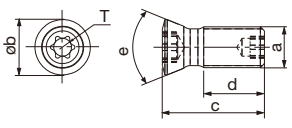
● Non-ferrous alloy

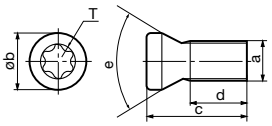
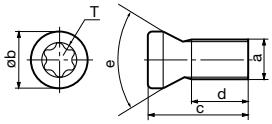
Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM SAE	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminium alloy	Aluminium alloy ingots for casting	AC1B	Al-Cu4MgTi	204.0	EN AC-2100		
		AC2A	–	–	–		
		AC2B	–	319.0	–		
		AC3A	–	–	EN AC-44100		
		AC4A	–	–	–		
		AC4B	Al-Si8Cu3	333.0	EN AC-46200		
		AC4C	Al-Si7Mg(Fe)	356.0	EN AC-42000		
		AC4CH	Al-Si7Mg0.3	A356.0	EN AC-42100		
		AC4D	–	355.0	EN AC-45300		
		AC5A	Al-Cu4Ni2Mg2	242.0	–		
		AC7A	–	514.0	–		
		AC8A	Al-Si12CuNiMg	–	EN AC-48000		
		AC8B	–	–	–		
		AC8C	–	332.0	–		
		AC9A	–	–	–		
		AC9B	–	–	–		
	Aluminium alloy die casting	ADC1	–	A413.0	–		
		ADC3	–	A360.0	–		
		ADC5	–	518.0	–		
		ADC6	–	–	–		
		ADC10	–	–	–		
		ADC10Z	–	A380.0	–		
		ADC12	–	–	–		
		ADC12Z	–	383.0	–		
		ADC14	–	B390.0	–		
Magnesium alloy	Magnesium alloy casting	MC5	–	AM100A	–		
		MC6	–	ZK51A	–		
		MC7	–	ZK61A	–		
		MC8	MgRE3Zn2Zr	EZ33A	EN MC65120		
		MC9	MgAg3RE2Zr	QE22A	EN MC65210		
		MC10	MgZn4RE1Zr	ZE41A	EN MC35110		
	Magnesium alloy die casting	MD1A	–	AZ91A	G-A9Z1Y4		
		MDC1B	–	AZ91B	–		
		MDC1D	MgAl9Zn1(A)	AZ91D	EN MC21120		
		MDC2B	MgAl6Mn	AM60B	EN MC21320		

Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM AA	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminium alloy	Aluminium alloy extruded shapes	A5052S	–	5052	EN AW-5052		
		A5454S	–	5454	EN AW-5454		
		A5083S	AlMg4.5Mn0.7	5083	EN AW-5083		
		A5086S	–	5086	EN AW-5086		
		A6061S	AlMg1SiCu	6061	EN AW-6061		
		A6063S	AlMg0.7Si	6063	EN AW-6063		
		A7003S	–	–	EN AW-7003		
		A7N01S	–	–	–		
		A7075S	AlZn5.5MgCu	7075	EN AW-7075		

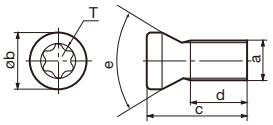
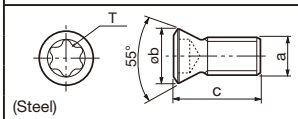
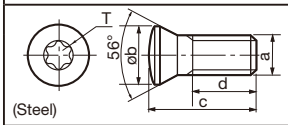
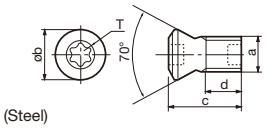
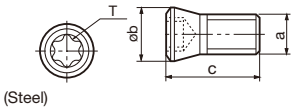
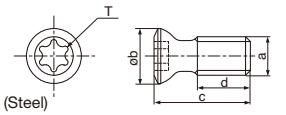
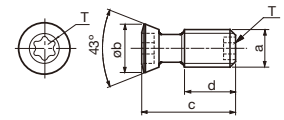
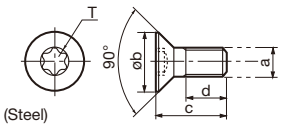
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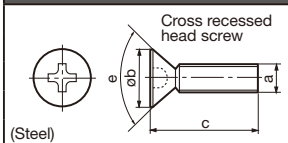
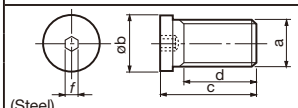
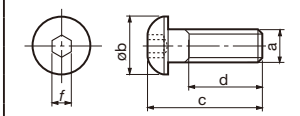
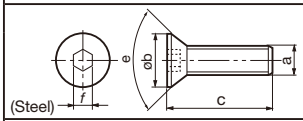
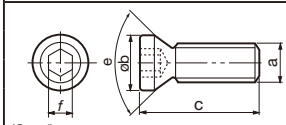
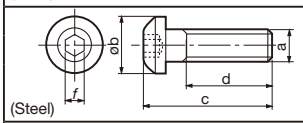
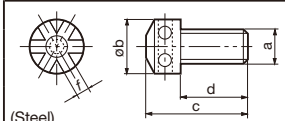
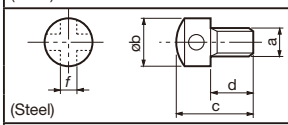
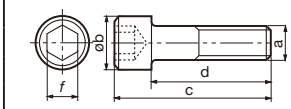
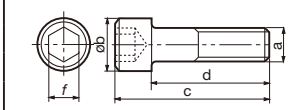
Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / *f*	
	**CSTA-NO2**	#2-56UNC	0.157	0.236	0.157	82°	T8	0.96
	CSTA-NO2S			0.197	0.118			
	CSTA-NO2L			0.315	0.236			
	CSTA-NO3	#3-48UNC	0.169	0.276	0.157		T9	1.70
	CSTA-NO5	#5-40UNC	0.197	0.315	0.197			
	CSTA-1.6	M1.6x0.35	0.098	0.122	0.035	80°	T6	0.44
	CSTA-4	M4x0.7	0.276	0.394	0.303	82°	T15	2.58
	CSTA-5	M5x0.8	0.283	0.591	0.433			
	CSTA-5S			0.472	0.315			
	CSTA-5SS			0.374	0.217			
	CSTA-5ST25			0.472	0.315		T25	3.69
	CSPA-5IP15		0.280	0.591	0.433		15IP	2.58
	CSPA-5SIP15			0.472	0.315			
	CSPA-5IP20			0.591	0.433		20IP	3.69
(Steel)	**CSPA-5SIP20**			0.472	0.315			
	**CSP-2L033**	M2x0.4	0.102	0.130	0.075	88°	6IP	0.52
	CSTB-2		0.106	0.130	0.055		T6	0.52
	CSTB-2L			0.205	0.130			
	CSTB-2L040			0.157	0.083			
	CSTB-2.2	M2.2x0.45	0.138	0.240	0.138		T7	0.74
	CSTB-2.2L038			0.150	0.087			
	CSTB-2.2S			0.181	0.079			
	CSTB-2.2L053DR		0.118	0.209	0.126			
	CSTB-2.2L053DL		0.118	0.209	0.126			
	CSTB-2.2R		0.122	0.240	0.146			
 CSP-2L033 type shown	**CSTB-2.5**	M2.5x0.45	0.138	0.236	0.134		T8	0.96
	CSTB-2.5L046		0.128	0.181	0.102		T7	0.66
	CSTB-2.5L080		0.138	0.315	0.213		T8	0.96
	CSTB-2.5B			0.217	0.102			
	CSTB-2.5L054DR			0.213	0.114		T7	
	CSTB-2.5L054DL							
	CSTB-2.5S			0.189	0.087		T8	
 CSTB-4SD type shown	**CSTB-3**	M3x0.5	0.161	0.315	0.177		T9	1.70
	CSTB-3L042			0.165	0.028			
	CSTB-3L050			0.197	0.079			
	CSTB-3L081		0.165	0.319	0.185		T8	0.96
	CSTB-3S		0.161	0.236	0.098		T9	1.70
	CSTB-3.5ST	M3.5x0.6	0.209	0.492	0.157		T15	2.58
	CSTB-3.5H		0.205	0.256	0.122	60°		
	CSTB-3.5		0.217	0.331	0.169			
	CSTB-3.5T		0.256	0.394	0.217		T20	3.69
	CSTB-3.5TS			0.335	0.157			
	CSTB-3.5D		0.185	0.331	0.193		T9	1.70
	CSTB-3.5L110		0.217	0.433	0.295		T15	2.58
	CSTB-3.5L115		0.189	0.453	0.276		T10	1.84
	CSTB-3.5L115-S		0.189	0.453	0.256			2.58
 CSTC-4L type shown	**CSTB-3.5L**		0.209	0.492	0.331		T15	2.58
	CSTB-4	M4x0.7	0.217	0.449	0.291			
	CSTB-4L060			0.236	0.079			
	CSTB-4L085			0.334	0.137			
	CSTB-4L090		0.224	0.354	0.217			
	CSTB-4L115-S		0.217	0.453	0.256			4.06
	CSTB-4S		0.217	0.315	0.157			2.58
	CSTB-4ST	M4x0.5	0.252	0.579				
	CSTB-4SD	M4x0.7	0.217	0.315			T8	0.96
	CSTB-4M			0.374	0.217		T15	2.58
	CSTB-4F	M4x0.5	0.276	0.579	0.343			
	CSTB-4TS	M4x0.7	0.256	0.354	0.177		T20	3.69
	CSTB-5	M5x0.8	0.276	0.472	0.295			
	CSTB-5S			0.374	0.197			
(Steel)	**CSTB-5L105**			0.413	0.240			

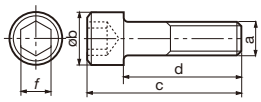
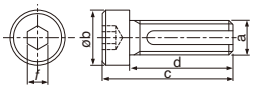
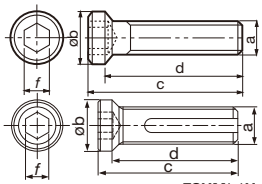
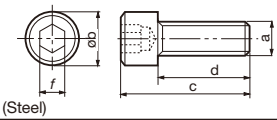
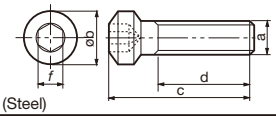
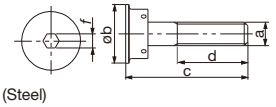
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / *f*	
 (Steel)	**CSTB-5L120**			0.472	0.256			
	CSTB-5L159		0.283	0.626	0.441			
	CSTB-5L163-S		0.272	0.642	0.445			4.43
	CSTC-4L055DR	M4x0.5	0.213	0.217	0.079	44°	T8/T10	0.96/1.84
	CSTC-4L055DL	M4x0.5	0.213	0.217	0.079		T8/T10	0.96/1.84
	CSTC-4L100DR	M4x0.7	0.213	0.394	0.234		T8/T10	0.96/1.84
	CSTC-4L100DL	M4x0.7	0.213	0.394	0.234		T8/T10	0.96/1.84
	CSPB-1.8L3.3	M1.8x0.35	0.094	0.130	0.039	60°	6IP	0.37
	CSPB-1.8L3.6			0.142	0.051			
	CSPB-1.8FL3.6	M1.8x0.2		0.142	0.063			
	CSPB-1.8FL4.3			0.169	0.091			
	CSPB-2L043	M2x0.4	0.106	0.169	0.098		6IP	0.52
	CSPB-2H		0.102	0.134	0.063			
	CSPB-2.2	M2.2x0.45	0.118	0.236	0.154		7IP	0.74
	CSPB-2.2SH			0.157	0.079			0.81
	CSPB-2.5	M2.5x0.45	0.138	0.236	0.138		8IP	0.96
	CSPB-2.5S			0.165	0.067			
	CSPB-2.5SH		0.130	0.205	0.130		7IP	0.81
	CSPB-3.5	M3.5x0.6	0.205	0.354	0.220		15IP	2.58
 (Steel)	**CSPB-3.5S**	M3.5x0.6	0.205	0.256	0.122	60°	15IP	2.58
	CSPB-4	M4x0.7	0.217	0.457	0.291			
	CSPB-4S			0.323	0.157			
	CSPB-5	M5x0.8	0.276	0.472	0.295		20IP	3.69
	VX040024A	M4	0.215	0.354	0.236		T15	3.32
	VX040028A	M4	0.205	0.382	0.185	44°	T15	3.32
	SR M2.5X0.45-L6 IP7	M2.5x0.45	0.134	0.236	0.136	60°	7IP	0.89
	SR10503833L040	M2.5x0.45	0.128	0.157	0.079		T7	0.96
	SR14-500-L5.1	M4	0.217	0.201	0.091		T15	2.58
	SR 14-500-L7.0	M4	0.217	0.276	0.165		T15	2.58
	SR14-506	M4x0.7	0.224	0.315	0.185		T15	3.54
	SR14-554/S	M4x0.7	0.224	0.366	0.197		T15	3.32
	SR 14-560	M2.2x0.45	0.138	0.252	0.150	50°	T8	0.89
	SR 14-560/S	M2.5x0.45	0.138	0.211	0.108		T8	0.89
	SR 14-562	M3.5	0.189	0.344	0.219	60°	T10	2.36
	SR 14-562/S	M3.5	0.189	0.256	0.130		T10	2.36
	SR 14-571/S	M3.5x0.6	0.201	0.295	0.157		T10	2.36
	SR 14-591	M5x0.8	0.260	0.531	0.299		T20	3.69
	SR 34-508	M2.2x0.45	0.124	0.181	0.105		T7	0.66
	SR 34-514	M2.5x0.45	0.130	0.205	0.126		T7	0.66
	SR 76-943	M6	0.378	0.787	0.394	90°	T20	3.69
	SR 76-961	M5	0.260	0.531	0.289	61°	T15	2.58
	SR 76-963	M5	0.339	0.787	0.378	91°	T15	2.58
	SR 10503833-S	M2.5X0.45	0.128	0.150	0.069	60°	T7	0.66
	SR 114-018-L3.40	M2.5	0.142	0.132	0.079	56°	T6	0.52
	SM35-114-H0	M3.5x0.6	0.220	0.449	0.201	60°	T15	2.58
	SM40-143-H0	M4X0.7	0.220	0.563	0.331	61°	T15	2.58
	TS25F080A	M2.25X0.35	0.146	0.272	0.083	60°	T8	0.96
	TS25064I	M2.5X0.45	0.138	0.252	0.150	50°	T8	0.96
	TS30F100A	M3X0.35	0.181	0.327	0.087	60°	T10	1.84
	TS30085I/HG	M3X0.5	0.169	0.335	0.220		T9	1.70
	TS30100I/HG-P	M3x0.5	0.169	0.276	0.161		9IP	1.48
	TS30C72I	M3X0.5	0.165	0.283	0.177		T9	1.70
	TS40085I/HG	M4	0.224	0.335	0.177		T15	2.58
	TS35085I/HG	M3.5x0.6	0.209	0.335	0.169		T15	2.58
	TS40093I/HG	M4	0.224	0.366	0.169		T15	2.58
	TS40B100I	M4	0.236	0.394	0.236	R3.0	T15	2.58
	TS40F120A	M4X0.5	0.236	0.417	0.118	60°	T15	2.58
	TS45120I	M4.5	0.272	0.472	0.295	R3.5	T20	3.69
	TS50115I	M5	0.276	0.447	0.252	60°	T20	3.69
	TS50230D3	M5X0.8	0.276	0.906	0.531		T20	-
	TS50250D35	M5X0.8	0.295	0.984	0.571		T25	-
	TS50F160A	M5X0.5	0.276	0.547	0.138		T20	3.69

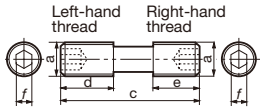
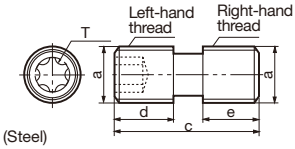
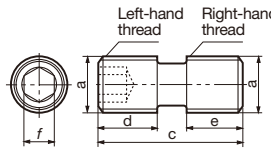
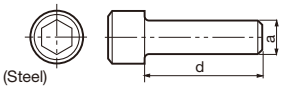
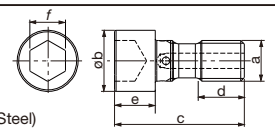
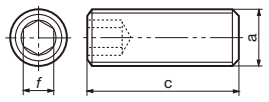
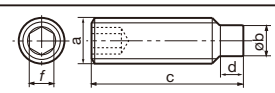
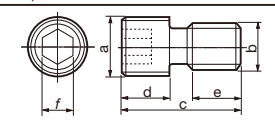
Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / *f*	
 (Steel)	**TS60265D4**	M6X1.0	0.315	1.043	0.610	60°	T25	-
	TS60285D42	M6X1.0	0.335	1.122	0.657		T25	-
	TS60320D5	M6X1.0	0.374	1.220	0.709		T25	-
	TS60F200A	M6X0.75	0.323	0.657	0.177		T20	5.16
	TS70F250A	M7X0.75	0.394	0.827	0.220		T25	5.16
	TS80340D6	M8X1.25	0.394	1.339	0.787		T25	-
	TS80F300A	M8X1.0	0.472	0.984	0.287		T30	7.38
 (Steel)	**CSPD-1.8S**	M1.8x0.35	0.094	0.130	0.055		6IP	0.52
	CSTD-3T	M3x0.5	0.169	0.276	0.177		T10	1.84
	CSPD-3				0.165		10IP	1.84
 (Steel)	**CSTB-4.5L110P**	M4.5X0.75	0.260	0.461	0.276		T15	2.58
 (Steel)	**SRM5X0.8IP20X+ACROLYTE**	M5X0.8	0.362	0.591	0.386		20IP	5.53
 (Steel)	**CSTC-2**	M2x0.4	0.122	0.201	-		T6	0.52
 (Steel)	**CSTR-4L100**	M4x0.7	0.224	0.394	0.217		T15	2.58
 (Steel)	**SR16-212-01397**	M5x0.8	0.252	0.492	0.268		T20/T10	1.84
	SR16-212-01397L							
 (Steel)	**CST-3.5**	M3.5X0.6	0.236	0.189	-		T9	1.70
	CST-3.5S			0.138	-			
	CST-5	M5x0.8	0.394	0.709	0.512		T25	3.69
	CST-5S			0.472	0.276			
	CSTF-2L055-S	M2x0.4	0.106	0.217	0.150		T6	0.52

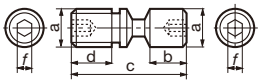
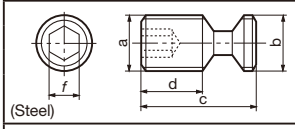
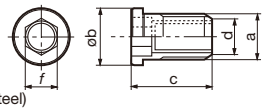
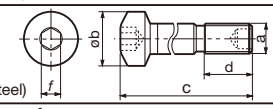
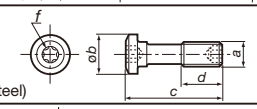
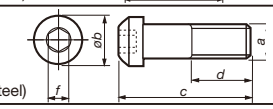
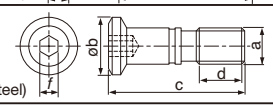
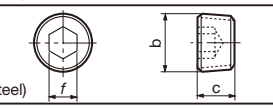
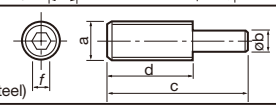
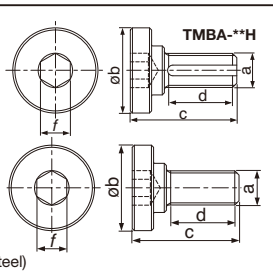
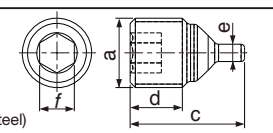
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	T / *f*	e	
 Cross recessed head screw (Steel)	**SM2.5×0.45×8**	M2.5x0.45	0.197	0.315	-	-	90°	-
	SM2.5×0.5×8	M2.5x0.5	0.197	0.315	-	-	90°	-
	SM3×0.5×6	M3x0.5	0.236	0.236	-	-	90°	-
	SM3×0.5×8			0.315	-	-	90°	-
	SM3×0.5×10			0.394	-	-	90°	-
 (Steel)	**MSP-5**	M5x0.8	0.240	0.311	0.193	2		1.11
	MSP-6.3	M6.3x1	0.303	0.500	0.390	2.5		2.21
 (Steel)	**BHM3-8**	M3x0.5	0.217	0.394	0.315	2		1.11
	BHM4-8	M4x0.7	0.276	0.417		2.5		1.62
	BHM4-10			0.496	0.394			
	BHM5-14	M5x0.8	0.354	0.693	0.551	3		2.21
	BHM6-20-A	M6x1.0	0.413	0.945	0.787	4		3.69
	BHM8-25U	M8	0.551	1.154	0.984	5		6.27
	BHM8-30U			1.350	1.181			
 (Steel)	**CSHM-3-8**	M3	0.236	0.315	-	2	90°	1.11
 (Steel)	**CSHB-4-A**	M4	0.217	0.433		T15	60°	1.48
	CSHB-6	M6	0.335	0.748	-	4	60°	3.69
	CSHB-6-A	M6	0.335	0.748				3.69
 (Steel)	**RT-1**	M6	0.394	0.886	0.551	4		3.69
	RT-2	M8	0.512	1.220	0.787	5		6.27
 (Steel)	**ASM6**	M6	0.394	0.709	0.472	3		-
	AJM5F	M5x0.5	0.354	0.512	0.315	2		-
	AJM5	M5x0.8	0.354	0.512	0.315	2		-
 (Steel)	**ASM34S**	M3	0.189	0.315	0.197	2		-
	ASM34L			0.433	0.315			-
	ASM54	M5x0.8	0.354	0.551	0.354	3		-
 (Steel)	**CHHM3.5-10**	M3.5x0.6	0.236	0.531	0.394	3		2.21
	CHHM4-10	M4x0.7	0.276	0.551				
	CHHM5-14	M5x0.8	0.335	0.748	0.551	4		3.69
	CHHM5-18			0.906	0.709			
	CHHM6-15	M6	0.394	0.827	0.591	5		6.27
	CHHM6-20			1.024	0.787			
	CHHM6-25			1.220	0.984			
 Hex. socket head screw (JISB1176) (Steel)	**CM3X0.5X6**	M3x0.5	0.217	0.354	0.236	2.5		1.62
	CM3X0.5X10			0.512	0.394			
	CM4X0.7X10	M4x0.7	0.276	0.551		3		2.21
	CM4X0.7X12			0.630	0.472			
	CM4X0.7X14			0.709	0.551			
	CM4X0.7X15			0.748	0.591			
	CM4X0.7X20			0.945	0.787			
	CM5X0.8X8	M5x0.8	0.335	0.512	0.315	4		3.69
	CM5X0.8X10-A			0.591	0.394			
	CM5X0.8X12			0.669	0.472			
	CM5X0.8X12-A			0.669	0.472			
	CM5X0.8X14			0.709	0.551			
	CM5X0.8X16			0.827	0.630			
	CM5X0.8X16-A			0.827	0.630			
	CM5X0.8X18			0.906	0.709			
	CM5X0.8X20-A			0.984	0.787			
	CM5X0.8X25-A			1.181	0.984			

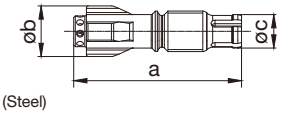
Screws

Shape	Designation	Dimension (in)							Torque (lbs·ft)
		a	øb	c	d	e	*f*	g	
	CM6X1X16-A	M6x1.0	0.394	0.866	0.630		0.197		6.27
	CM6X1X20-A			1.024	0.787				
	CM6X1X25-A			1.220	0.984				
	CM6X1.0X40-A			1.811	1.575				
	CM6X10	M6		0.630	0.394				
	CM6X16			0.866	0.630				
	CM6X20			1.024	0.787				
	CM6X25			1.220	0.984				
	CM6X30-S	M6x1.0	0.394	1.417	1.181				
	CM8X1.25X20-A	M8x1.25	0.512	1.102	0.787		0.236		18.44
	CM8X1.25X25-A			1.299	0.984				
	CM8X30H			1.417	1.181		0.197		
 Hex. socket head screw (JISB1176)	**CM10X30H**	M10x1.5	0.630	1.496	1.181		0.236		29.50
	CM12X30H	M12x1.75	0.709	1.575			0.315		51.63
	CM16X40H	M16x2	0.945	2.126	1.575		0.394		73.75
	CM16x75	M16	0.945	3.583	2.953		0.551		73.75
	CM16x120	M16	0.945	5.354	4.724		0.551		73.75
	CM16x140	M16	0.945	6.142	5.512		0.551		73.75
	CM20x80	M20	1.181	3.937	3.150		0.669		110.63
	CM20x120	M20	1.181	5.512	4.724		0.669		110.63
 CM***H	**CM20x150**	M20	1.181	6.693	5.906		0.669		110.63
	CAP-CM12x1.75x50	M12	0.709	2.441	1.969		0.394		51.63
	CAP-CM16X2.0X55	M16	0.945	2.795	2.165		0.551		29.50
	CAP-CM20X2.5X50	M20	1.181	2.756	1.969		0.669		73.75
	C0.375X1.125H	3/8-24UNF	0.562	1.500	1.125		0.219		25.81
	C0.500X1.375H	1/2-20UNF	0.750	1.875	1.375		0.313		51.63
	SD06-A3	M10x1.5	0.630	2.756	2.362		0.315		29.50
	SRM6X16DIN912-12.9	M6x1	0.394	0.866	0.630		0.197		
	VC00TEDI12040F	M12	1.024	2.008	1.575		0.315		44.25
	VC00TEDI20040F	M20	1.929	1.969	1.358		0.472		110.63
	VC00TANG16040F	M16	1.811	1.831	1.299		0.394		44.25
	SD08-98	M12x1.75	0.709	3.031	2.559		0.394		51.63
	LHM12x1.75x30-C	M12	0.709	1.453	1.181		0.315		51.63
	VC004762I10035F	M10	0.630	1.772	1.378		0.315		44.25
	FCS3	M3x0.5	0.217	0.630	0.472		0.098		
(Steel)	**FCS6**	M6x1	0.394	1.024	0.787		0.197		
 (Steel) FSHM*-*H	**FSHM8-30**	M8x1.25	0.433	1.181	1.063		0.197		18.44
	FSHM8-30H								18.44
	FSHM10-40	M10	0.551	1.575	1.437		0.236		29.50
	FSHM10-40H								29.50
 (Steel)	**SHCM4-10**	M4x0.7	0.236	0.551	0.394		0.118		2.21
	SHCM4-12			0.630	0.472				
	SHCM4-16			0.787	0.630				
 (Steel)	**CTS-M6**	M6x1	0.394	0.984	0.748		0.157		3.69
 (Steel)	**RSFTS-050M**	M10	0.984	2.047	1.673		0.236		

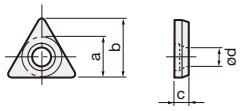
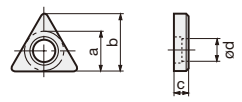
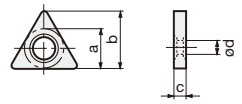
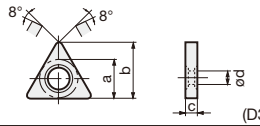
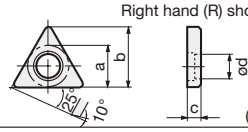
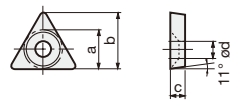
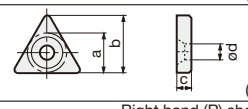
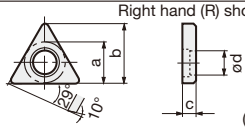
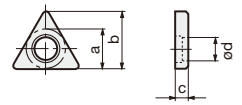
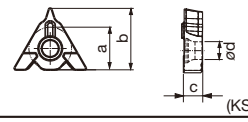
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / *f*	
 (Steel)	**MCS520-2.5**	M5×0.8		0.787	0.276	0.236	0.098	2.21
	MCS620-3	M6×1				0.276	0.118	4.43
	MCS625-3			0.984		0.394	0.315	
	MCS825-4	M8×1				0.492	0.256	
	MCS828-4			1.122	0.472	0.413	0.157	5.90
	NDS-8A			1.181	0.453	0.453		
	NDS-8S	M8×1.25		0.787	0.315	0.315		
	RSRGR5M40	M4×0.5		0.354	0.144	0.164	T8	0.96
	SR PS 118-0273	M10		1.575	0.650	0.591	0.197	29.50
 (Steel)	**DS-5T**	M5×0.8		0.472	0.197	0.197	T10	2.58
	DS-6T	M6		0.591	0.236	0.236	T15	2.58
	DS-6P	M6×1		0.827	0.276	0.276	15IP	4.43
	FDS-8ST	M8×1		0.787	0.315	0.315	T27	7.38
	FDS-8ST-18			0.709		0.236		
 (Steel)	**DS-6**	M6×1		0.591	0.236	0.236	0.118	4.43
	DS-8	M8×1.25		0.630	0.276	0.276	0.157	5.90
	DS-8S			0.512	0.217	0.217		
	DS-10	M10×1.5		1.024	0.394	0.472	0.197	5.90
	FDS-6Z	M6×0.75		0.807		0.217	0.118	4.43
	FDS-8	M8×1		1.024		0.394	0.157	5.90
	FDS-8S			0.787	0.315	0.315		
	FDS-8SS			0.728		0.256		
 (Steel)	**SS100**	1/4-20UNC			0.750			
	S-412	10-32UNF			0.750			
 (Steel)	**SHM8x1.25x35-C**	M8	13	1.693	0.906	0.315	0.236	18.44
	SHM10x1.5x30-C	M10	16	1.575	0.669	0.394	0.315	29.50
	SHM16x2x35-C	M16	24	2.008	0.709	0.630	0.551	73.75
	SHM20x2.5x40-C	M20	30	2.283	0.787	0.709	0.669	110.63
 Hex. socket screw (Flat end)(JISB1177)	**SSHM2.5-3**	M2.5		0.118				
	SSHM3-3	M3		0.118			0.059	0.74
	SSHM3-4			0.157				
	SSHM3-6			0.236				
	SSHM4-4	M4		0.157				
	SSHM4-5			0.197				
	SSHM4-6			0.236			0.079	1.11
	SSHM4-8			0.315				
	SSHM4-10			0.394				
	SSHM4-14			0.551				
	SSHM5-6	M5		0.236				
	SSHM5-10			0.394			0.098	1.48
	SSHM5-16			0.630				
	SSHM6-12	M6		0.472				
	SSHM6-16			0.630				
	SSHM6-18			0.709			0.118	2.21
	SSHM6-20			0.787				
	SSHM8-8	M8		0.315				
	SSHM8-10			0.394				
	SSHM8-12			0.472				
	SSHM8-14			0.551			0.157	3.69
	SSHM8-16			0.630				
	SSHM8-18			0.709				
 Hex. socket screw (Cylindrical end) (Steel) (JISB1177)	**M5×7**	M5	3.5	0.276	0.049	-	0.098	1.48
	M5×8			0.315		-		
	M5×10			0.394		-		
	M6×30	M6	4	1.181	0.059	-	0.118	2.21
 (Steel)	**JDS-3525**	M3.5x0.35	M2.5 x0.45	0.295	0.118	0.098	0.079	0.74
	JDS-5040	M5x0.5	M4 x0.7	0.394	0.157	0.157	0.098	0.74

Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	b	c	d	e	T / *f*	
 LCS2 has a hex. socket in threaded end only. (Steel)	**LCS2**	M5	0.197	0.551	0.256		0.079	1.11
	LCS3	M6	0.236	0.669			0.098	1.48
	LCS3B			0.591				
	LCS4	M8	0.315	0.827			0.118	2.21
	LCS4K				0.378			
	LCS4CA			0.689	0.256			
	LCS5			0.984	0.335			
	LCS5CA			0.807				
	LCS6	M10	0.386	1.071	0.390		0.157	3.69
	LCS8	M12	0.465	1.417	0.504		0.197	5.90
(Steel)	**LCS8C**	M10	0.386	1.189	0.524		0.157	3.69
 (Steel)	**LCS22**	M5	M5	0.394	0.185		0.079	1.11
	LCS22A	M6	M6	0.421				
	LCS23A	M5	M5	0.516	0.201		0.098	1.48
	LCS33	M5	M5	0.472	0.244		0.079	1.11
	LCS43	M6	M6	0.531	0.287		0.098	1.48
 (Steel)	**DTS5-3.5**	M5	0.248	0.341	M3.5		0.138	2.95
	DTS5-3.5SS			0.268				
	DTS5-3.5S			0.276				
	DTS6-4	M6	0.303	0.402	M4		0.157	3.69
	DTS6-4.5		0.295	0.394	M4.5		0.177	3.69
 (Steel)	**DLCS33**	M5	0.354	1.240	0.394		0.118	2.21
	DLCS43	M6	0.472	1.339	0.374		0.157	3.69
	DLCS54	M8x1	0.551	1.614	0.433			5.16
	DLCS64	M10x1	0.630	1.969	0.591		0.197	5.90
 (Steel)	**ACS-5W**	M5	0.315	0.787	0.335		T15	2.95
	ACS-6W	M6	0.394	1.024	0.476		T20	4.72
 (Steel)	**ACS3**	M5x0.8	0.295	1.008	0.472 - 0.591		0.118	2.95
	ACS4	M6x1	0.354	1.091	0.551 - 0.669		0.157	5.16
 (Steel)	**WCS3**	M6	0.374	0.886	0.315		0.118	2.21
 (Steel)	**PT1/4GN**		0.519	0.394	-		0.236	7.01
	1/8-28		0.383	0.276	-		0.197	5.90
 (Steel)	**LS-8**	M8	0.236	1.299	0.787		0.157	3.69
	CCS4-A							
	BH5-10-A							
	BH4-10-A							
(Steel)	**BH-40050-A**							
 (Steel)	**TMBA-M10**	M10x1.5	1.063	1.181	0.827		0.315	29.50
	TMBA-M12	M12x1.75	1.299	1.417	1.024		0.394	51.63
	TMBA-M12H	M12x1.75		1.358			0.315	
	TMBA-M16	M16x2	1.575	1.969	1.575		0.551	73.75
	TMBA-M16H	M16x2						
	TMBA-M20	M20x2.5	1.969	2.205	1.654		0.669	110.63
	TMBA-M20H	M20x2.5						
	TMBA-M24	M24x3	2.559	2.717	2.165		0.748	110.63
	TMBA-M24H	M24x3						
	TMBA-0.500H	1/2-20UNF	1.299	1.335	1.000		0.313	51.63
	TMBA-0.6255.375H	5/8-11UNF	1.484	2.256	1.75		0.313	
	TMBA-0.750H	3/4-16UNF	1.969	2.294	1.861		0.500	110.63
 (Steel)	**SR-10400611**	M4X0.5		0.260	0.118	1	0.079	

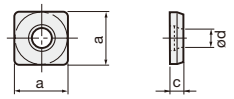
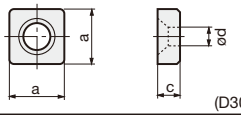
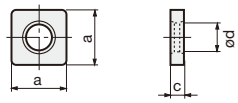
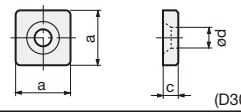
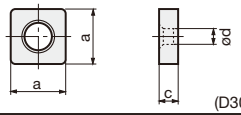
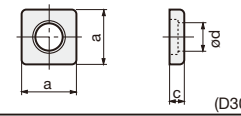
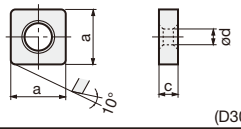
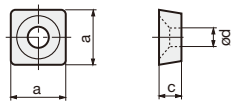
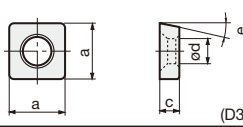
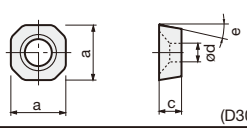
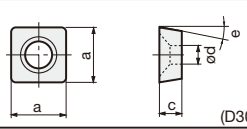
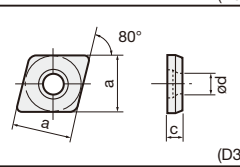
Shape	Designation	Dimension (in)			Torque (lbs·ft)
		a	øb	øc	
 (Steel)	**SCR-TRM-T5**	1.031	0.228	0.169	5.16 - 5.90
	SCR-TRM-T6	1.043	0.248	0.189	5.90 - 7.38
	SCR-TRM-T7	1.102	0.291	0.228	9.59 - 11.06
	SCR-TRM-T8	1.248	0.386	0.248	12.54 - 14.75
	SCR-TRM-T9	1.358	0.461	0.264	15.49 - 16.96

Shims

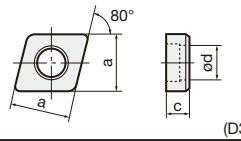
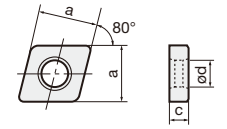
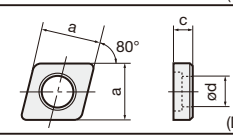
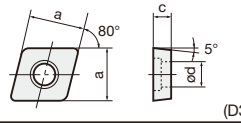
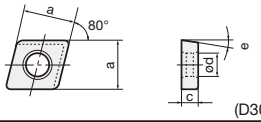
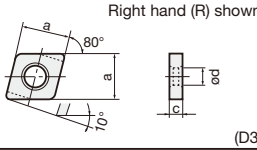
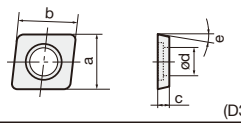
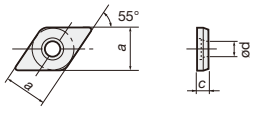
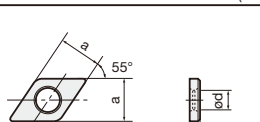
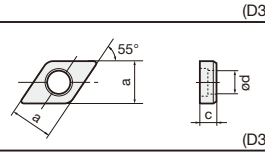
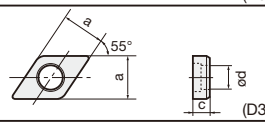
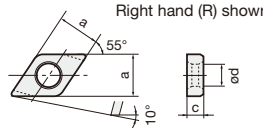
Shape	Designation	Dimension (in)				
		a	b	c	ød	
 (D30)	**AST322**	0.366	0.520	0.126	0.173	
	AST422	0.492	0.709			
 (D30)	**MST-322**	0.358	0.508	0.128	0.228	
	MST-432	0.492	0.705	0.189	0.287	
	MST-533	0.614	0.874		0.382	
	MST-644	0.740	1.047	0.252	0.445	
 (D30)	**LST317**	0.366	0.520	0.106	0.197	
	LST42	0.492	0.709	0.126	0.264	
	LST53	0.618	0.878	0.189	0.303	
	LST42K	0.429	0.614	0.126	0.264	
 (D30)	**LST317CA**	0.366	0.520	0.106	0.197	
	LST42CA	0.492	0.709	0.126	0.264	
Right hand (R) shown  (D30)	**ELST42**	0.453	0.650	0.126	0.256	
	ELST317	0.335	0.472	0.106	0.193	
	ELST317BR					
	ELST317BL					
 (D30)	**PAT-32**	0.323	0.461	0.126	0.138	
	***PAT-53**	0.528	0.780	0.189	0.197	
 (D30)	**NAT-32**	0.374	0.528	0.126	0.138	
	NAT-42E	0.488	0.701		0.122	
Right hand (R) shown  (D30)	**LST317BR**	0.366	0.520	0.106	0.197	
	LST317BL					
 (D30)	**SST32**	0.335	0.469	0.126	0.213	
 (KS15F)	**LST33**	0.433	0.624	0.187	0.173	

Note: * marked shims are made of steel.

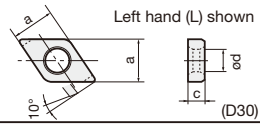
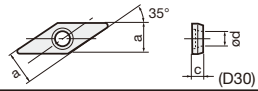
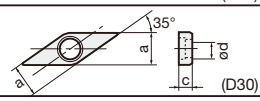
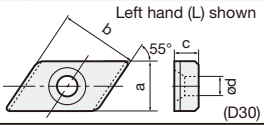
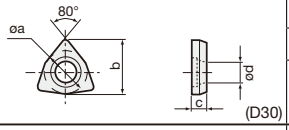
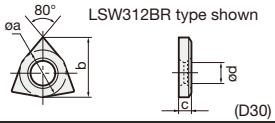
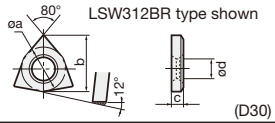
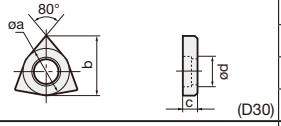
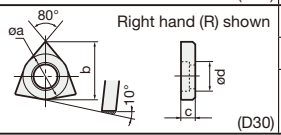
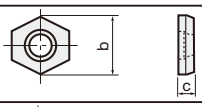
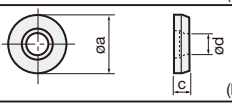
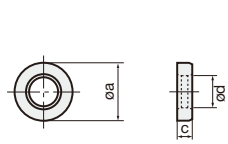
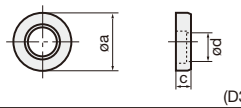
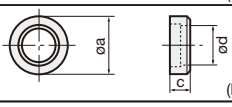
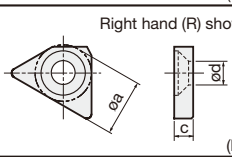
Shims

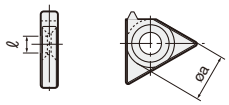
Shape	Designation	Dimension (in)				
		a	b	c	ød	e
 (D30)	**ASS422**	0.492		0.126	0.173	
	CS44-A			0.185		
 (D30)	**ASS533**	0.618		0.189	0.217	
	ASS634	0.744				
 (D30)	**ELSS32**	0.335		0.126	0.193	
	LSS33	0.366		0.169	0.197	
	ELSS42	0.461		0.126	0.256	
	LSS42	0.492			0.264	
	ELSS53	0.579		0.189	0.315	
	LSS53	0.618			0.303	
	ELSS63	0.705			0.382	
	LSS63	0.744				
	ELSS84	0.953		0.252	0.508	
	LSS84	0.992			0.516	
 (D30)	**NAS-42**	0.500		0.126	0.138	
	NAS-04	1.240		0.252	0.358	
 (D30)	**MSS-432**	0.492		0.189	0.287	
	MSS-442			0.252		
 (D30)	**SSS32**	0.335		0.126	0.213	
Right hand (R) shown  (D30)	**LSS42BR**	0.492		0.126	0.264	
	LSS42BL					
 (D30)	**PAS-32**	0.323		0.126	0.118	
	PAS-42	0.449			0.138	
	***PAS-63**	0.669		0.189	0.197	
 (D30)	**LSS42CA**	0.492		0.126	0.264	8°
	LSS53CA	0.618		0.189	0.303	10°
 (D30)	**FSSA1102**	0.457		0.079	0.217	13°
 (D30)	**FSSP1102**	0.433		0.079	0.217	17°
 (D30)	**ASC322**	0.366		0.126	0.173	
	ASC422	0.492				
	ASC533	0.618		0.189	0.217	
	ASC634	0.744				
	CC44-A	0.492		0.185		

Note: ⋆ marked shims are made of steel.

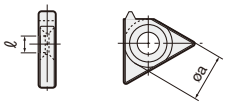
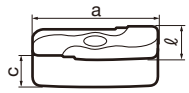
Shape	Designation	Dimension (in)				
		a	b	c	ød	e
 (D30)	**MSC-432**	0.492		0.189	0.287	
	MSC-442			0.252		
	MSC-533	0.614		0.189	0.382	
	MSC-543			0.252		
	MSC-634	0.740			0.445	
 (D30)	**ELSC32**	0.335		0.126	0.244	
	LSC42	0.492			0.256	
	ELSC42	0.461				
	LSC53	0.618		0.189	0.303	
	ELSC53	0.579			0.319	
	ELSC63	0.705			0.382	
	LSC63	0.744				
	LSC317	0.366		0.106	0.197	
 (D30)	**SSC32**	0.335		0.126	0.213	
	SSC4T3	0.449		0.157	0.260	
 (D30)	**SSC4T3-P**	0.449		0.157	0.260	5°
	SSC54-P	0.528				5°
 (D30)	**LSC42CA**	0.492		0.126	0.264	8°
	LSC53CA	0.618		0.189	0.303	10°
Right hand (R) shown  (D30)	**LSC42BR**	0.492		0.126	0.264	
	LSC42BL					
 (D30)	**ZSA1102**	0.413	11	0.079	0.216	11°
	ZSA1502	0.614	12.4		0.236	11°
 (D30)	**ASD322**	0.366		0.126	0.173	
	ASD423	0.492		0.126	0.173	
	ASD432	0.492		0.189	0.173	
	CD44-A	0.492		0.185		
 (D30)	**ELSD32**	0.335		0.126	0.193	
	ELSD42	0.461			0.256	
	LSD42	0.492			0.264	
	LSD42A					
	LSD43			0.189		
	LSD43A					
 (D30)	**MSD-322**	0.366		0.126	0.228	
	MSD-432	0.492		0.189	0.287	
	MSD-442			0.252		
 (D30)	**SSD32**	0.335		0.126	0.213	
Right hand (R) shown  (D30)	**ELSD317BR**	0.335		0.106	0.193	
	ELSD317BL					
	LSD42BR	0.492		0.126	0.264	
	LSD42BL					

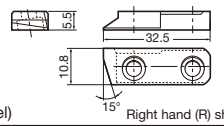
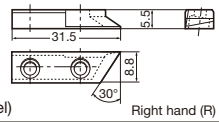
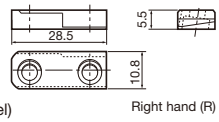
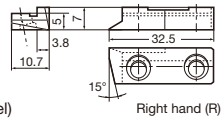
Shims

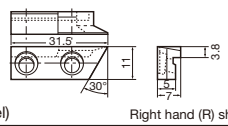
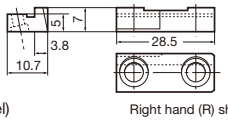
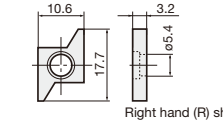
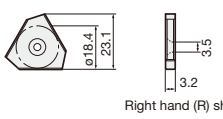
Shape	Designation	Dimension (in)				
		øa	b	c	ød	
 Left hand (L) shown (D30)	**LSZ42BR**	0.492		0.126	0.264	
	LSZ42BL					
 (D30)	**ASV322**	0.366		0.126	0.173	
	CV34-A	0.366		0.185		
 (D30)	**MSV-322**	0.365		0.126	0.228	
	SSV32	0.331			0.213	
	SSV42	0.433			0.248	
 Left hand (L) shown (D30)	**CSK54R**	0.370	0.583	0.189	0.138	
	CSK54L					
 (D30)	**ASW322**	0.367	0.453	0.126	0.173	
	ASW422	0.492	0.598			
 LSW312BR type shown (D30)	**LSW312**	0.367	0.453	0.106	0.197	
	LSW42	0.492	0.610	0.126	0.264	
 LSW312BR type shown (D30)	**LSW312BR**	0.367	0.453	0.106	0.197	
	LSW312BL					
 (D30)	**MSW-432**	0.504	0.622	0.189	0.287	
	MSW-533	0.630	0.776		0.382	
	MSW-633	0.756	0.933		0.445	
 Right hand (R) shown (D30)	**MSW-432BR**	0.504	0.622	0.189	0.287	
	MSW-432BL					
 (D30)	**CH44-A**		0.492	0.185		
 (D30)	**ASR420**	0.492		0.126	0.173	
 (D30)	**LSR32**	0.350		0.126	0.197	
	LSR32C	0.331				
	LSR42	0.476			0.264	
	LSR42C	0.390			0.197	
	LSR53C	0.551		0.189	0.264	
	LSR63C	0.677			0.323	
	LSR84C	0.862		0.252	0.382	
 (D30)	**MSR-43**	0.492		0.189	0.287	
	MSR-44			0.252		
 (D30)	**SSR32**	0.343		0.125	0.205	
 Right hand (R) shown (D30)	**G16EL/IR**	0.374	-	0.126	0.157	
	G16ER/IL			0.126		
	G16EL/IR-DT			0.156	0.213	
	G16ER/IL-DT			0.156		

Shape	Designation	Dimension (in)		
		øa	ℓ	Lead angle
	**AE16-4DT**	0.374	0.213	4°
	AE16-3DT		0.213	3°
	AE16-2DT		0.213	2°
	A16-1DT		0.213	1°
	AE16-0DT		0.213	0°
	AE16-99DT		0.213	-1°
	AE16-98DT		0.213	-2°
	AE16-4		0.157	4°
	AE16-3		0.157	3°
	AE16-2		0.157	2°
	A16-1		0.169	1°
	AE16-0		0.157	0°
	AE16-99		0.157	-1°
	AE16-98		0.157	-2°
	AN16-4DT	0.374	0.213	4°
	AN16-3DT		0.213	3°
	AN16-2DT		0.213	2°
	AN16-0DT		0.213	0°
	AN16-99DT		0.213	-1°
	AN16-98DT		0.213	-2°
	AN16-4		0.157	4°
	AN16-3		0.157	3°
	AN16-2		0.157	2°
	AN16-0		0.157	0°
	AN16-99		0.157	-1°
	AN16-98		0.157	-2°
	GXE16-98	0.374	0.157	-2°
	GXE16-98DT		0.213	-2°
	GXE16-99		0.157	-1°
	GXE16-99DT		0.213	-1°
	GXE16-0		0.157	0°
	GXE16-0DT		0.213	0°
	GXE16-1		0.169	1°
	GX16-1DT		0.213	1°
	GXE16-2		0.157	2°
	GXE16-2DT		0.213	2°
	GXE16-3		0.157	3°
	GXE16-3DT		0.213	3°
	GXE16-4		0.157	4°
	GXE16-4DT		0.213	4°
	GXE22-98DT	0.500	0.260	-2°
	GXE22-99DT			-1°
	GXE22-0DT			0°
	GX22-1DT			1°
	GXE22-2DT			2°
	GXE22-3DT			3°
	GXE22-4DT			4°
	GXN16-98	0.374	0.157	-2°
	GXN16-98DT		0.213	-2°
	GXN16-99		0.157	-1°
	GXN16-99DT		0.213	-1°
	GXN16-0		0.157	0°
	GXN16-0DT		0.213	0°
	GXN16-1		0.169	1°
	GXN16-2		0.157	2°
	GXN16-2DT		0.213	2°
	GXN16-3		0.157	3°
	GXN16-3DT		0.213	3°
	GXN16-4		0.157	4°
	GXN16-4DT		0.213	4°
	GXN22-98DT	0.500	0.260	-2°
	GXN22-99DT			-1°
	GXN22-0DT			0°
	GXN22-2DT			2°
	GXN22-3DT			3°
(D30)	**GXN22-4DT**			4°

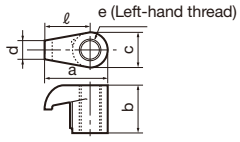
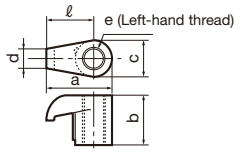
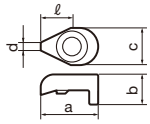
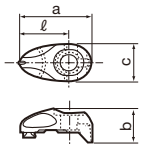
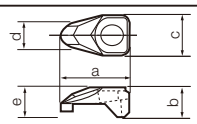
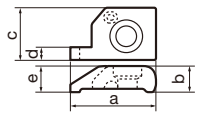
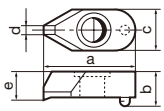
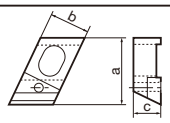
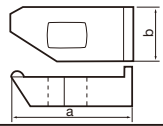
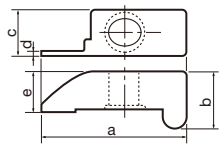
Shims

Shape	Designation	Dimension (in)				
		a	øa	ℓ	c	Lead angle
	**NXE22-98**		0.500	0.157		-2°
	NXE22-99					-1°
	NXE22-0					0°
	NXE22-1			0.177		1°
	NXE22-2			0.157		2°
	NXE22-3					3°
	NXE22-4					4°
	NXE27-98		0.626	0.157		-2°
	NXE27-99					-1°
	NXE27-0					0°
	NXE27-1			0.177		1°
	NXE27-2			0.157		2°
	NXE27-3					3°
	NXE27-4					4°
	NXN22-98		0.500	0.157		-2°
	NXN22-99					-1°
	NXN22-0					0°
	NXN22-1			0.177		1°
	NXN22-2			0.157		2°
	NXN22-3					3°
	NXN22-4					4°
	NXN27-98		0.626	0.157		-2°
	NXN27-99					-1°
	NXN27-0					0°
	NXN27-1			0.177		1°
	NXN27-2			0.157		2°
	NXN27-3					3°
(D30)	**NXN27-4**					4°
	**TSL12R**	0.472		0.185	0.177	4.5°
	TSL12L	0.472		0.185	0.177	4.5°
	TSL16R	0.626		0.252	0.197	5°
	TSL16L	0.626		0.252	0.197	5°
	TSL24R	0.937		0.370	0.280	7°
	TSL24L	0.937		0.370	0.280	7°
	TSL12RI	0.421		0.185	0.177	4.5°
	TSL12LI	0.421		0.185	0.177	4.5°
	TSL16RI	0.740		0.252	0.197	5°
(D30)	**TSL16LI**	0.740		0.252	0.197	5°

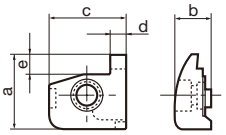
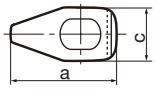
Shape	Designation
 (Steel) Right hand (R) shown	**SL-1R**
	SL-1L
 (Steel) Right hand (R) shown	**SL-2R**
	SL-2L
 (Steel) Right hand (R) shown	**SL-3R**
	SL-3L
 (Steel) Right hand (R) shown	**SL-6R**
	SL-6L

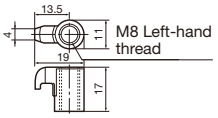
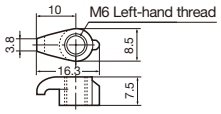
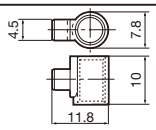
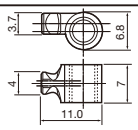
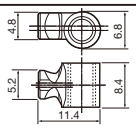
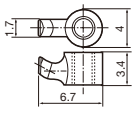
Shape	Designation
 (Steel) Right hand (R) shown	**SL-7R**
	SL-7L
 (Steel) Right hand (R) shown	**SL-8R**
	SL-8L
 (D30) Right hand (R) shown	**SGSR151**
	SGSL151
 (D30) Right hand (R) shown	**STN62R**
	STN62L

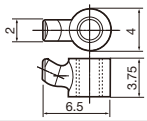
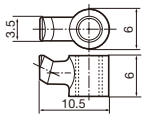
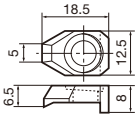
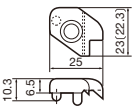
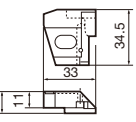
Clamps

Shape	Designation	Dimension (in)					
		a	b	c	d	e	ℓ
 (Steel)	**MCL-5M**	0.579	0.433	0.307	0.157	M5	0.425
	MCL-6	0.732	0.453	0.374		M6	0.543
	MCL-8S	0.752	0.531	0.429	0.197	M8	0.535
	MCL-8M	0.886					0.669
	MCL-8L	1.004	0.571		0.157		0.787
 (Steel)	**MCPM-6**	0.579	0.441	0.311	0.157	M5	0.425
	MCPM-9	0.752	0.661	0.429	0.197	M8×1	0.535
	MCPM-12	0.886					0.669
	MCPM-20	0.732	0.374	0.374	0.157	M6	0.543
	MCPM-21		0.480				
	MCPM-22	0.846	0.520				0.657
	MCPM-30	1.004	0.661	0.429	0.197	M8×1	0.787
 (Steel)	**DCPM-33**	0.630	0.366	0.413	0.094		0.335
	DCPM-43	0.835	0.453	0.531	0.118		0.520
	DCPM-54	1.016	0.600	0.551	0.138		
	DCPM-64	1.118	0.610	0.630	0.157		
 (Steel)	**ACP3S**	0.898	0.374	0.394			0.591
	ACP3S-E	0.854	0.374	0.394			0.547
	ACP3L	1.232	0.472	0.512			0.917
	ACP3L-E	1.039	0.472	0.512			0.724
	ACP4S	1.012	0.472	0.512			0.697
	ACP5S	1.185	0.508	0.591	-	-	0.815
	ACP6S	1.315	0.504	0.650	-	-	0.945
 (Steel)	**ACP3**	0.705	0.394	0.394	0.256	0.248	
	ACP4	1.020	0.547	0.472	0.276	0.425	
 Right hand (R) shown (Steel)	**CTC-3R**	1.142	0.346	0.630	0.087	0.315	
	CTC-3L						
	CTC-4R			0.669	0.126		
	CTC-4L						
	CTC-5R			0.709	0.165		
	CTC-5L						
 (Steel)	**CP81A**	1.102	0.413	0.472	0.138	0.315	
	CP81B						
 TC-3 type shown, TC-4 : Left-hand thread (Steel)	**TC-3**	0.748	0.492	0.327	–	–	–
	TC-4	0.850		0.315			
 (Steel)	**TF-72**	0.866	0.445				
	TF-73	0.866	0.445				
	TF-184	0.866	0.445				
	TF-185	0.866	0.445				
 (Steel)	**CCR2**	1.366	0.587	0.421	0.047	0.413	
	CCL2						
	CCR3				0.087		
	CCL3						
	CCR4				0.110		
	CCL4						
	CCR5				0.126		
	CCL5						
	CCR6				0.154		
	CCL6						
	CCR8				0.193		
	CCL8						

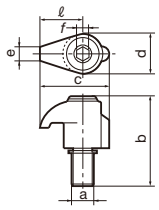
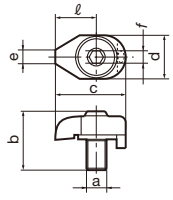
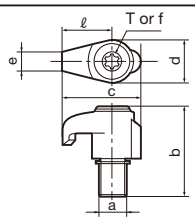
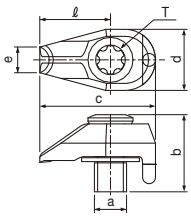
Clamps

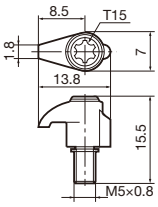
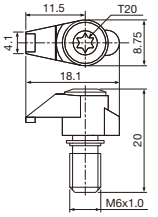
Shape	Designation	Dimension (in)					
		a	b	c	d	e	
 Right hand (R) shown (Steel)	**CFG-3SR**	0.866	0.433	0.909	0.079	0.236	
	CFG-3SL						
	CFG-4SR				0.118		
	CFG-4SL						
	CFG-4DR	1.260				0.630	
	CFG-4DL						
	CFG-5SR	0.866			0.157	0.236	
	CFG-5SL						
	CFG-5DR	1.260				0.630	
	CFG-5DL						
	CFG-6SR	0.906			0.197	0.276	
	CFG-6SL						
	CFG-6DR	1.299				0.669	
	CFG-6DL						
	CFG-8SR	1.102		1.067	0.276	0.315	
	CFG-8SL						
	CFG-8DR	1.496				0.709	
	CFG-8DL						
 (Steel)	**CCP4-A**	1.146		0.551			

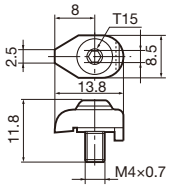
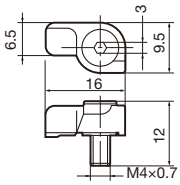
Shape	Designation
 (Steel)	**NF-84A**
 (Steel)	**CP536**
 (Steel)	**CP91**
 (Steel)	**CP900**
 (Steel)	**CP910**
 (Steel)	**JCP-1**

Shape	Designation
 (Steel)	**JCP-2**
 (Steel)	**JCP-3** **JCP-3N**
 (Steel)	**CQ-1**
 Right hand (R) shown (Steel)	**CPK5R** **CPK5L**
 Right hand (R) shown (Steel)	**C11R-5** **C11L-5**

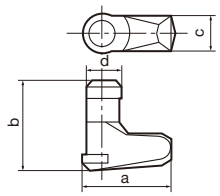
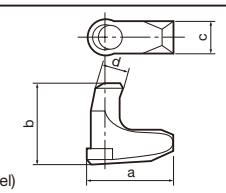
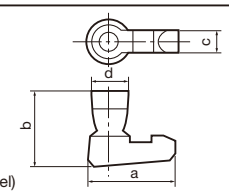
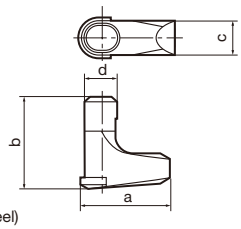
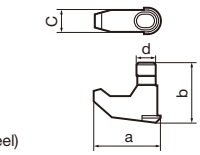
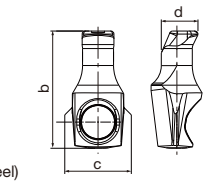
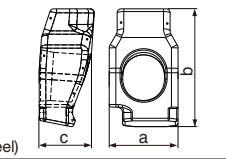
Clamp Sets

Shape	Designation	Dimension (in)						
		a	b	c	d	e	ℓ	T / f
 (Steel)	**CSG-5S**	M5×0.8	0.531	0.543	0.276	0.071	0.335	0.098
	CSG-5		0.610					
	CSG-6S	M6×1		0.642	0.335	0.098	0.394	0.118
	CSG-6		0.709					
	CSG-6L		0.846					
	CSG-8S	M8×1	0.827	0.807	0.433	0.138	0.492	0.157
	CSG-8		0.925					
 (Steel)	**CSW-00**	M4×0.7	0.453	0.472	0.315	0.079	0.295	0.098
	CSW-1	M5×0.8	0.650	0.650	0.374	0.157	0.394	0.118
	CSW-0	M4×0.7	0.453	0.543	0.335	0.098	0.315	0.098
	CSW-2	M6×1	0.787	0.807	0.433	0.236	0.512	0.157
	CSW-40	M4×0.7	0.472	0.520	0.315	0.079	0.295	0.098
	CSW-50	M5×0.8	0.591	0.665	0.394		0.374	0.118
 (Steel)	**CSP16**	M5×0.8	0.610	0.567	0.272	0.126	0.358	T15
	CSP22	M6×1	0.787	0.713	0.350	0.165	0.453	T20
	CSP27	M8×1.25	0.925	0.961	0.469	0.154	0.614	0.157
 (Steel)	**CSY-15**	M4×0.7	0.457	0.453	0.276	0.118	0.236	15IP
	CSY-20	M5×0.8	0.472	0.709	0.374	0.157	0.433	20IP

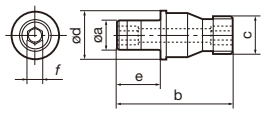
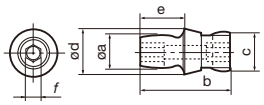
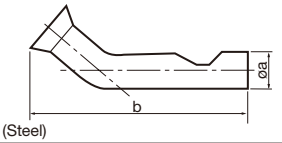
Shape	Designation
 (Steel)	**CSG-5T**
 (Steel)	**CSX20**

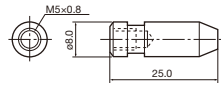
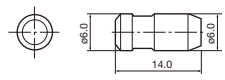
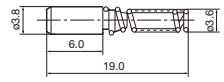
Shape	Designation
 (Steel)	**CSW-0T**
 (Steel)	**CSL-4**

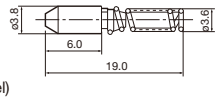
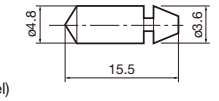
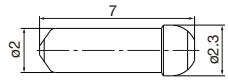
Levers

Shape	Designation	Dimension (in)				
		a	b	c	d	
 (Steel)	**LCL3**	0.394	0.472	0.146	0.142	
	LCL4	0.575	0.551	0.185	0.185	
	LCL5	0.673	0.669	0.236	0.236	
	LCL6	0.807	0.827	0.295	0.295	
	LCL8	1.000	1.000	0.339	0.339	
 (Steel)	**LCL3C**	0.425	0.465	0.134	0.118	
	LCL4C	0.512	0.528	0.146	0.134	
	LCL5C	0.732	0.697	0.185	0.177	
	LCL6C	0.807	0.748	0.236	0.224	
	LCL8C	0.953	0.925	0.295	0.244	
 (Steel)	**LCL22N**	0.295	0.256	0.102	0.081	
	LCL32N	0.394	0.307	0.126	0.126	
	LCL33NL	0.453	0.374	0.122	0.142	
	LCL33N	0.394	0.370	0.126	0.126	
	LCL43N	0.528	0.394	0.185	0.185	
 (Steel)	**LCL23**	0.307	0.335	0.102	0.083	
	LCL33	0.398	0.476	0.142	0.146	
	LCL33L	0.472	0.453	0.122	0.142	
	LCL43S	0.531	0.520	0.185	0.185	
	LCL43M					
	LCL44	0.634	0.575	0.185	0.185	
	LCL54	0.650	0.677	0.240	0.236	
 (Steel)	**DLCL43**	0.612	0.551	0.197	0.185	
	DLCL54	0.752	0.752	0.240	0.236	
	DLCL64	0.846	0.827	0.295	0.295	
 (Steel)	**SLLV-1**		0.305	0.134	0.096	
	SLLV-2		0.305	0.134	0.108	
 (Steel)	**FCL4**	0.197	0.306	0.150		
	FCL8	0.394	0.563	0.212		

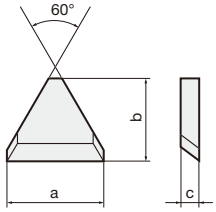
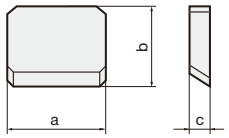
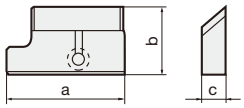
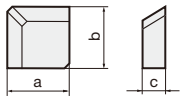
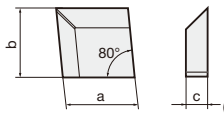
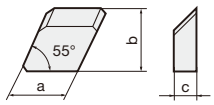
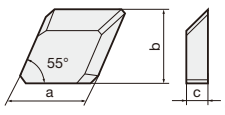
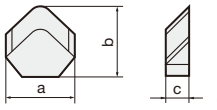
Pins

Shape	Designation	Dimension (in)					
		øa	b	øc	ød	e	*f*
 (Steel)	**MLP32L**	0.154	0.346	M5×0.8	0.220	0.138	0.079
	MLP33	0.146					
	MLP34L	0.146	0.516		0.244	0.197	
	MLP46	0.197	0.677	M6.3×1	0.307	0.217	0.098
	MLP46L		0.732			0.272	
	MLP58	0.244	0.862	M8×1	0.406		0.118
	MLP68	0.307		M10×1	0.469		0.157
	MLP68L		0.949			0.358	
 (Steel)	**MLP44**	0.197	0.520	M6.3×1	0.280	0.217	0.098
	MLP33L	0.146	0.409	M5×0.8	0.220	0.201	0.079
 (Steel)	**SW99**	0.315	1.870				

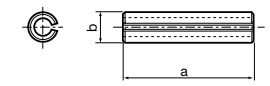
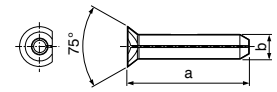
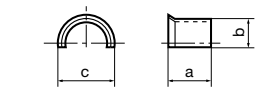
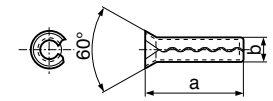
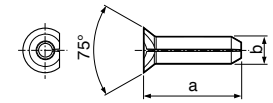
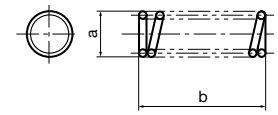
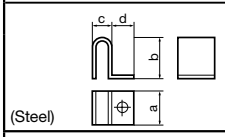
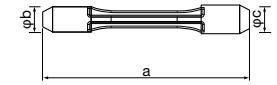
Shape	Designation
 (Steel)	**SP-8**
 (Steel)	**SP-6**
 (Steel)	**BP-3**

Shape	Designation
 (Steel)	**BP-360**
 (Steel)	**BP-490**
 (Steel)	**SL-PI-2**

Chipbreaker Pieces

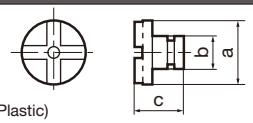
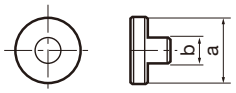
Shape	Designation	Dimension (in)				
		a	b	c		
 (TX30)	**CBT-2S**	0.346	0.299	0.079		
	CBT-2M	0.291	0.260			
	CBT-3S	0.524	0.476	0.098		
	CBT-3M	0.484	0.437			
	CBT-3L	0.445	0.398			
	CBT-4S	0.740	0.665			
	CBT-4M	0.701	0.626			
	CBT-4L	0.661	0.567			
	NCT-2S	0.559	0.465			
	NCT-2M	0.512	0.425			
	NCT-2L	0.469	0.386			
 (TX30)	**CBS-3S**	0.374	0.327	0.079		
	CBS-3M		0.287			
	CBS-4S	0.500	0.457	0.098		
	CBS-4SN					
	CBS-4M		0.417			
	CBS-4L		0.358			
	NCS-3S		0.441			
	NCS-3M		0.402			
	NCS-3L		0.343			
 Right hand (R) shown (TX30)	**B11 R-5**	0.945	0.512	0.197		
	B11 L-5					
 (TX30)	**CBS-4SN**	0.453	0.453	0.098		
	CBS-4MN	0.413	0.413			
	CBS-4LN	0.354	0.354			
	NCS-3SN	0.441	0.441			
	NCS-3MN	0.402	0.402			
	NCS-3LN	0.343	0.343			
 (TX30)	**CBC-4SN**	0.453	0.453	0.098		
	CBC-4MN	0.413	0.413			
	CBC-4LN	0.374	0.374			
 Right hand (R) shown (TX30)	**CBD-4SR**	0.500	0.453	0.098		
	CBD-4MR		0.413			
	CBD-4ML					
	CBD-4LR		0.374			
 (TX30)	**CBD-4SN**	0.453	0.453	0.098		
	CBD-4MN	0.413	0.413			
 (TX30)	**CBR-4SN**	0.500	0.469	0.098		
	CBR-4MN		0.429			

Springs (Springs for Shims)

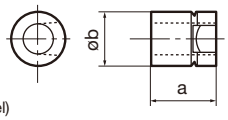
Shape	Designation	Dimension (in)					
		a	b	c	d		
 (Steel)	**SP-2.5**	0.472	0.106				
 (Steel)	**SP-16-L14**	0.535	0.112				
 (Steel)	**LSP3**	0.217	0.118	0.232			
	LSP3L	0.276					
	LSP4		0.157	0.299			
	LSP4S	0.236					
	LSP5	0.335	0.177	0.346			
	LSP6	0.433	0.232	0.429			
	LSP6C	0.335	0.189	0.366			
	LSP8	0.472	0.394	0.606			
 (Steel)	**PSP-2.5**	0.394	0.106				
	PSP-4.0	0.630	0.165				
	PSP301	0.299	0.118				
 (Steel)	**PSP-16**	0.384	0.112				
 (Steel)	**BP-0**	0.142	0.512				
	BP-5-A						
	BP-7	0.276	0.433				
	BP-8.8	0.346					
	BP-9	0.346	0.394				
	BP-10	0.386					
	SP913	0.354	0.512				
 (Steel)	**BSP-1**	0.307	0.295	0.189	0.236		
 (Steel)	**PN3-4**	2.520	0.354	0.394			

Parts for Tools

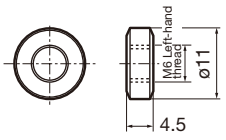
Coolant Supply Attachment

Shape	Designation	Dimension (in)					
		a	b	c	Thread		
 (Plastic)	**EA-20**	0.787	0.394	0.591			
	EA-25	0.984					
	EA-32	1.260	0.630				
 (Plastic)	**CA-16**	0.630	0.315		M6		
	CA-20	0.787	0.335		M6		
	CA-25	0.984	0.453		R1/8		
	CA-32	1.260	0.453		R1/8		
	CA-40	1.575	0.453		R1/8		

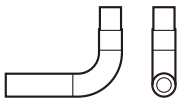
Pistons

Shape	Designation	Dimension (in)				
		a	øb			
 (Steel)	**DPIS33**	0.496	0.354			
	DPIS43	0.465	0.394			
	DPIS44	0.528	0.394			
	DPIS54	0.630	0.512			
	DPIS64		0.591			

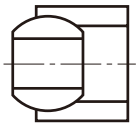
Nuts

Shape	Designation
	**SRW11**

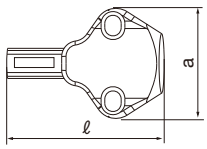
Coolant Pipe & Nozzle

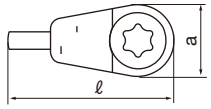
Shape	Designation
	**PNZ5**

Coolant Nozzle

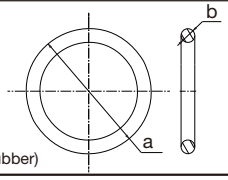
Shape	Designation
	**CNZ125**
	SATZ-M8X1-M3
	SATZ-M10X1-M5
	EZ104
	EZ83

Coolant unit

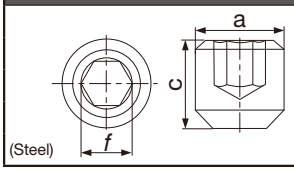
Shape	Designation	Dimension (in)	
		a	ℓ
	**CU-CW-CHP**	0.819	1.169
	CU-D-CHP	0.819	1.165
	CU-V-CHP	0.819	1.181

Shape	Designation	Dimension (in)	
		a	ℓ
	**S-CU-CHP**	0.276	0.638

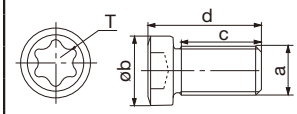
O-ring for TungTurn-Jet

Shape	Designation	Dimension (in)				
		a	øb			
 (Rubber)	**OR6.4X0.9N**	0.323	0.035			
	OR14X2.5NN	0.748	0.098			

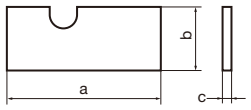
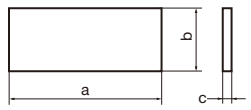
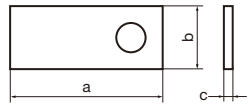
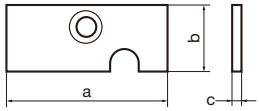
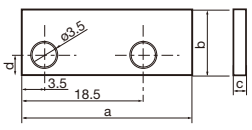
Coolant screw for TungTurn-Jet

Shape	Designation	Dimension (in)				
		a	c			T / *f*
 (Steel)	**SRM4X4 TL360**	M4	0.157			0.079

Mounting screw for TungTurn-Jet

Shape	Designation	Dimension (in)				
		a	øb	c	d	T / *f*
 (Steel)	**SRM3**	M3X0.5	0.165	0.276	0.193	T8

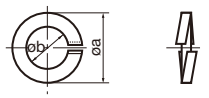
Sizing Plates

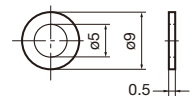
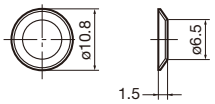
Shape	Designation	Dimension (in)					
		a	b	c	d		
 (Steel)	**S0816A**	2.165	0.610	0.031			
	S1016A			0.039			
	S0816B	1.969		0.031			
	S1016B			0.039			
	S0816C	1.772		0.031			
	S1016C			0.039			
	S0820A	2.402	0.768	0.031			
	S1020A			0.039			
	S0820B	2.146		0.031			
	S1020B			0.039			
	SM-00	0.709	0.315	0.039			
 (Steel)	**SW04**	1.004	0.228	0.010 0.020 0.039			
	SW05	1.457	0.327	0.010			
	SW06	1.417	0.425	0.020 0.039			
	SW08	1.398	0.484	0.079			
 (Steel)	**S0810**	1.575	0.433	0.031			
	S1010			0.039			
 Attached with fix screw and wrench. (Steel)	**PSTR08**	0.945	0.433	0.059			
	PSTL08						
	PSTR10	1.654	0.650	0.079			
	PSTL10						
	PSTR12	1.850	0.748	0.079			
	PSTL12						
 (Steel)	**AP0801**	1.024	0.374	0.020	0.118		
	AP0802			0.039			
	AP0803			0.059			
	AP0804			0.079			
	AP0805			0.098			
	AP1101	1.181	0.453	0.020	0.197		
	AP1102			0.039			
	AP1103			0.059			
	AP1104			0.079			
	AP1105			0.098			
	AP1106			0.118			

SW04 is composed of three plates and SW05 to SW08 are composed of four plates.
Note on fixing screws: PSTR/L08 is attached with CSSM2-4 and other types are attached with CSHM3-8.

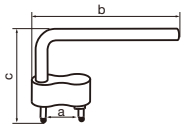
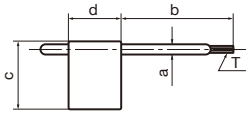
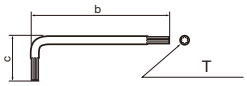
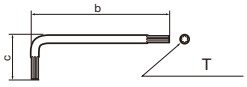
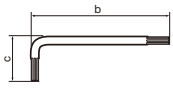
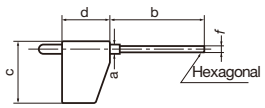
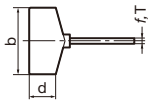
Parts for Tools

Washers

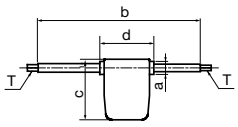
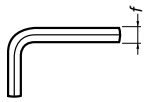
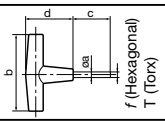
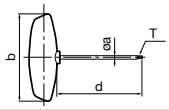
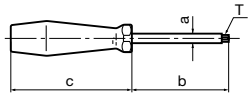
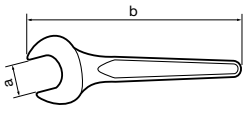
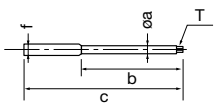
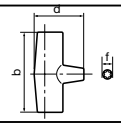
Shape	Designation	Dimension (in)					
		øa	øb				
	**VA4**	0.299	0.161				
	VA5	0.362	0.201				
	VA6	0.413	0.240				

Shape	Designation
	**CPW5**
	**CDW6**

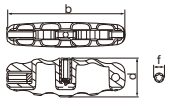
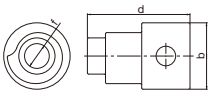
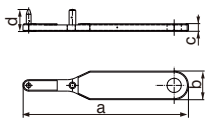
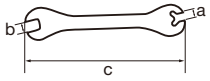
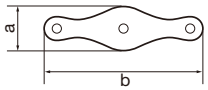
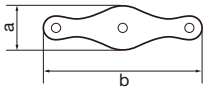
Wrenches and Drivers

Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	T
	**CRW23**	0.382	3.091	2.165			
	CRW33	0.366					
	**T-6F**	0.079	1.378	0.571	0.591		T6
	T-7F			0.748	0.748		T7
	T-8F	0.098	1.575				T8
	T-9F	0.118		0.925	0.787		T9
	T-15F	0.138	1.772	1.102	0.827		T15
	T-20F	0.157					T20
	IP-6F	0.079	1.378	0.583	0.587		6IP
	SET T-15/5	0.138	1.772	1.102	0.827		T15
	T-20TORX	0.154	1.929	1.181	0.866		T20
	**T-6L**		1.890	0.630			T6
	T-8L						T8
	T-9L						T9
	T-15L		2.323	0.866			T15
	T-25TORX		2.598	0.917			T25
	**KEYV-T20**		2.362	0.866			T20
	KEYV-T25		2.559	0.906			T25
	KEYV-T30L		7.480	1.457			T30
	KEYV-T40L		8.189	1.693			T40
	KEYV-T50L		9.134	1.890			T50
	**QL-39**		3.346	1.181			
	**P-2F**	0.157	1.732	0.787	0.492	0.079	
	P-2.5F	0.197	1.772	0.984	0.787	0.098	
	HW2.0/5RED	0.118	1.496	0.591	0.591	0.079	
	**P-2.5T**		1.654		0.591	0.098	
	T-15DF		1.575		0.787		T15

Wrenches, Drivers and Lubricant

Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	T
	**T-1008/5**	0.256	3.346	1.102	0.984	-	T10/T8
	T-2010/5					-	T10/T20
	**1/4HEX**					0.250	
	5/32HEX					0.156	
	1/8HEX					0.125	
	3/32HEX					0.094	
	P-2					0.079	
	P-2.5					0.098	
	P-3					0.118	
	P-3.5					0.138	
	P-4					0.157	
	P-4.5					0.177	
	P-5					0.197	
	P-6					0.236	
	**TP-3A**		2.756	1.181	1.791	0.118	
	TP-4		3.346	1.260	2.087	0.157	
	TP-5			1.594		0.197	
	T-27T		3.268	1.063	2.008		T27
	**T-15T**	0.157	3.150		3.937		T15
	T-20T						T20
	IP-20T						20IP
 Handle shape somewhat varies depending on the type number from the above figure.	**T-6D**	0.098	1.772	2.756			T6
	T-7DB			2.953			T7
	T-7D	0.079		2.756			
	T-8D	0.102	2.402	2.657			T8
	T-9D	0.118	2.559	3.150			T9
	T-10D	0.130	2.756	3.543			T10
	T-15D	0.144	2.795	3.937			T15
	T-20D	0.181	3.543				T20
	T-25D	0.173	3.425	3.386			T25
	IP-6DB	0.000	1.772	2.756			6IP
	IP-7D	0.098	1.772	2.953			7IP
	IP-8D	0.118	2.165	3.150			8IP
	IP-9D	0.130	2.362	3.937			9IP
	IP-10D	0.130	2.795	3.504			10IP
	IP-15D	0.157	3.150	3.937			15IP
	IP-20D	0.157	3.543	3.937			20IP
	**KS-21**	0.827	7.677				
	KS-24	0.945	8.465				
	KS-27	1.063	9.252				
	KS-32	1.260	10.827				
	KS-36	1.417	12.008				
	**M-1000**						
	**BT15S**	0.154	1.969	3.543		0.236	T15
	BT15M	0.154	1.969	4.646		0.236	T15
	BT20S	0.181	1.969	3.543		0.236	T20
	BT20M	0.181	1.969	4.646		0.236	T20
	BLD IP15/S7	0.154	1.969	3.543		0.236	15IP
	BLD IP15/M7	0.154	1.969	4.646		0.236	15IP
	BLD IP20/S7	0.181	1.969	3.543		0.236	20IP
	BLD IP20/M7	0.181	1.969	4.646		0.236	20IP
	BLD T10/S7	0.154	2.244	2.953		0.236	T10
	BLD T10/S7-A	0.154	2.244	2.953		0.236	T10
	**H-TB**		3.937		1.457	0.236	
	H-TBS		2.953		1.457	0.236	

Wrenches and Drivers

Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	T
	**H-TB2W**		3.740		1.236	0.236	
	**AJC08**		0.433		0.669	0.161	
	**ECW-456EF**	3.425	0.591	0.157	0.453		
	ECW-456I	3.169	0.866	0.157	0.413		
	**KEYV-S05**	0.157	0.217	3.937			
	KEYV-S06	0.213	0.315	4.921			
	KEYV-S08	0.260	0.394	5.906			
	KEYV-S10	0.303	0.512	6.890			
	KEYV-S12	0.370	0.630	9.843			
	KEYV-W20						
	**KEYV-177**	1.142	4.331				
	KEYV-217	1.142	4.331				
	**KGDT-100**	1.260	4.272				
	KGDT-110	1.260	4.272				
	KGDT-120	1.260	4.272				
	KGDT-130	1.260	4.272				
	KGDT-140	1.260	4.272				
	KGDT-150	1.260	4.272				
	K-TRM-T5	0.866	3.209				
	K-TRM-T6	1.063	3.622				
	K-TRM-T7	1.236	4.213				
	K-TRM-T8	1.417	4.331				
	K-TRM-T9	1.496	4.331				

Parts for Tools

Locators

Designation	Applicable Tool
LD150R	TXD15125R ~ TXD15315R
LD440R/L	TMD44 TGD4400R/L-A TFD44
LD442R/L	EGD4400R
LD540R/L	TMD54
LE302R	ESE3050R (RS**) ~ 3063R (RS**)
LE303R/L	TSE3003R/LIA ~ 3006R/LIA
LE402AR	ESE4050RA ESE4063RA
LE403R/L	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32
LE405R/L	TSE4005R/LIA ~ 4012R/LIA
LE413R/L	THE40
LE444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI
LE446R/L	TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
LE540R/L	TME54
LF440R/L	THF44
LF540R/L	THF54
LF602R	ERF6050R ~ ERF6063R
LF602R/L	TRF6003R/LI ~ TRF6006R/LI TRF6008R/LI ~ TRF6012R/LI
LMS56R/L	MS08R/L ~ MS12R/L
LN423R/L	TGN42
LN645R/L	TPN64
LP403R/L	TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
LP405R/L	TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
LP413R/L	TGP41 TGP42
LP514R/L	TGP51
LPP16R	TPP16
LR602R/L	ERD6050RA ~ ERD6063RA
LR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
LV525R/L	VSN 1
LV530R/L	VSN 2
LV556R/L	VSN60
LW400R	EFP4063R
LW400R/L	TFD44 TFP4000 SFP4000
LW402R	EFP4050R

Insert locking wedges

Designation	Applicable Tool
FDS-8SST	EDPD09063R EDPD09063RB
FDS-8ST-18	EDP09080R EDPD09080RB DPD09100R~DPD09160R DPD09100RB~DPD09160RB
FW-242R/L	ø63
FW-243R/L	ø80~100
FW-245R/L	ø125 ~
FW304R/L-D	DAD15 DPD15 EDPD15 QPP15
WF150R	TXD15125R ~ TXD15315R
WF310R/L	TGP4100BA TGP4103R/LIA
WF330N	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32 TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
WF330R/L	TSE3003R/LIA ~ 3006R/LIA
WF444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
WF500R	TSE4005R/LIA ~ 4012R/LIA TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
WF500R/L	TMD54 TGP51 THF54
WF50R/L	TME54
WF602R	ERF6050R ~ ERF6063R
WF603R/L	TRF6003R/LI ~ TRF600R/LI
WF608R/L	TRF6008R/LI ~ TRF6012R/LI
WF875N	TPYD06 EPYD06
WN645R/L	TPN64
WP193TR/L	EGD4400R
WP440R/L	TMD44 TGD4400R/L-A TFD44 TGP4100IA ~ TGP4112R/LIA TGP42 THF44 THE40
WR602R/LW	ERD6050RA ~ ERD6063RA
WR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
WT402R	ESE4050RA ESE4063RA
WT402R/L	EME4450RB ~ 4404RB

Parts for Tools

Locator adjusting wedges

Designation	Applicable Tool
FW-305	TFD44 TFP40 SFP4000 EFP4063
FW325R/L-D	DAD15 QPP15 DPD15 EDPD15
RSFTC1008	TPYP12...
RSFTC1009	EPYP12M032C25.0R05
RSFTC1011	EPYP12M025C25.0R03

Fine adjusting screws

Designation	Applicable Tool
AJM5	DPD09 EDPD09
ASM34L	DPD24

Cover

Designation	Applicable Tool
RSFTS6063M	TPYP12M063B22.0R10
RSFTS6080	TPYP12*080B**R12
RSFTS6100	TPYP12*100B**R16
RSFTS6125	TPYP12*125B**R20